

PROJECT MANAGEMENT PLAN

Heritage Management Plan

Sydney Metro West – Western Tunnelling Package

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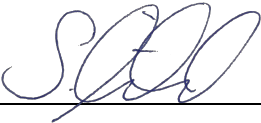


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Date	Date	Date

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DOCUMENT CONTROL

The current document version number and date of revision are shown in the document footer. All changes made to the Management Plan during its implementation on a live project are to be recorded in the amendment tables below.

Revision History

Revision	Date	Description of changes	Prepared by	Approved by
A	17/01/2022	Early Works Submission	Melissa Moritz	Simon Hussey
B	18/03/2022	Draft for stakeholder consultation	Melissa Moritz	Simon Hussey
C	14/04/2022	Revised draft for stakeholder consultation	Melissa Moritz	Simon Hussey
D	18/05/2022	Final draft following stakeholder consultation	Melissa Moritz	Simon Hussey
E	28/06/2022	Final following DPE review	Melissa Moritz	Simon Hussey

Terms and Definitions

Term	Definition
AARD	Archaeological Assessment and Research Design
ACHAR	Aboriginal Cultural Heritage Assessment Report
ARDEM	Archaeological Research Design and Excavation Methodology
AHR	Aboriginal Heritage Report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
Archaeological Potential	The potential for a site to contain archaeological remains. This potential is assessed based on contextual information and can relate to Aboriginal and non-Aboriginal archaeology.
AMS	Archaeological Method Statement
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CHL	Commonwealth Heritage List
CoA	Conditions of Approval
CSSI	Critical State Significant Infrastructure
DPE	Department of Planning and Environment (NSW)
EA	Environmental Advisor
EIS	Environmental Impact Statement
EM	Environmental Manager
EMS	Environmental Management System
EPA	Environmental Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation Act 1999 (Cth)
EPL	Environmental Protection License
ER	Environmental Representative
ESR	Environmental Site Representative
GALC	Gamuda Australia – Laing O’Rourke Consortium
Heritage Act	Heritage Act 1977 (NSW)
Heritage Item	A place, building, work, relic, moveable object or precinct assessed as having heritage significance and listed on a statutory heritage register
Heritage Council	Heritage Council of NSW or its delegate
Heritage NSW	Government agency primarily responsible for heritage management in NSW
HIS	Heritage Interpretation Strategy
HIA	Heritage Impact Assessment
HMP	Heritage Management Plan

Term	Definition
IS	Infrastructure Sustainability
ISC	Infrastructure Sustainability Council
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
Local Significance	An item that is significant to an area in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item
MSF	Maintenance and Stabling Facility
NHL	National Heritage List
NPW Act	National Parks and Wildlife Act 1974 (NSW)
PAD	Potential Archaeological Deposit
PM	Project Manager
PSB	Parramatta Sand Body
RAPs	Registered Aboriginal Party
Research Potential	The potential for an item to yield information that will contribute to an understanding of NSW's cultural or natural history. Note, it is possible for a site to have high archaeological potential with a low research potential
REMM	Revised Environmental Mitigation Measures
RTA	Road Trains of Australia
RTS	Response to Submissions
SEPP	State Environmental Planning Policy
SHR	State Heritage Register
SM	Sydney Metro
SMW	Sydney Metro West
SOPA	Sydney Olympic Park Authority
State Significance	An item that is significant to the state of NSW in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.
WTP	Western Tunnelling Package

1 INTRODUCTION

1.1 Project Description

The scope of the work being undertaken under the Sydney Metro West Western Tunnelling Package works (WTP) (the Project) includes but is not limited to, the following at each construction site:

- Westmead Station
 - Box excavation, including temporary support, stub tunnels, partially mined station cavern and crossover cavern including permanent lining and support
- Parramatta Station
 - Box excavation, including associated support
- Clyde Maintenance and Stabling Facility (MSF)
 - Permanent dive structure, portal, spur running tunnels, spur tunnel junction cavern, bulk earthworks, civil structures, utilities corridor, road crossing and creek diversion
- Rosehill Services Facility
 - Shaft excavation, permanent lining and lateral support
- Sydney Olympic Park (SOP) Station
 - Retrieval of tunnel boring machines (TBMs) through the Central Tunnelling Package (CTP) station box, installation of concrete lining to nozzles (at tunnelling level) and establishment of site facilities (caravan or similar)
- Eastern Creek Precast Facility
 - Civil and building works

Demolition and site clearance works will be undertaken as required for the construction sites.

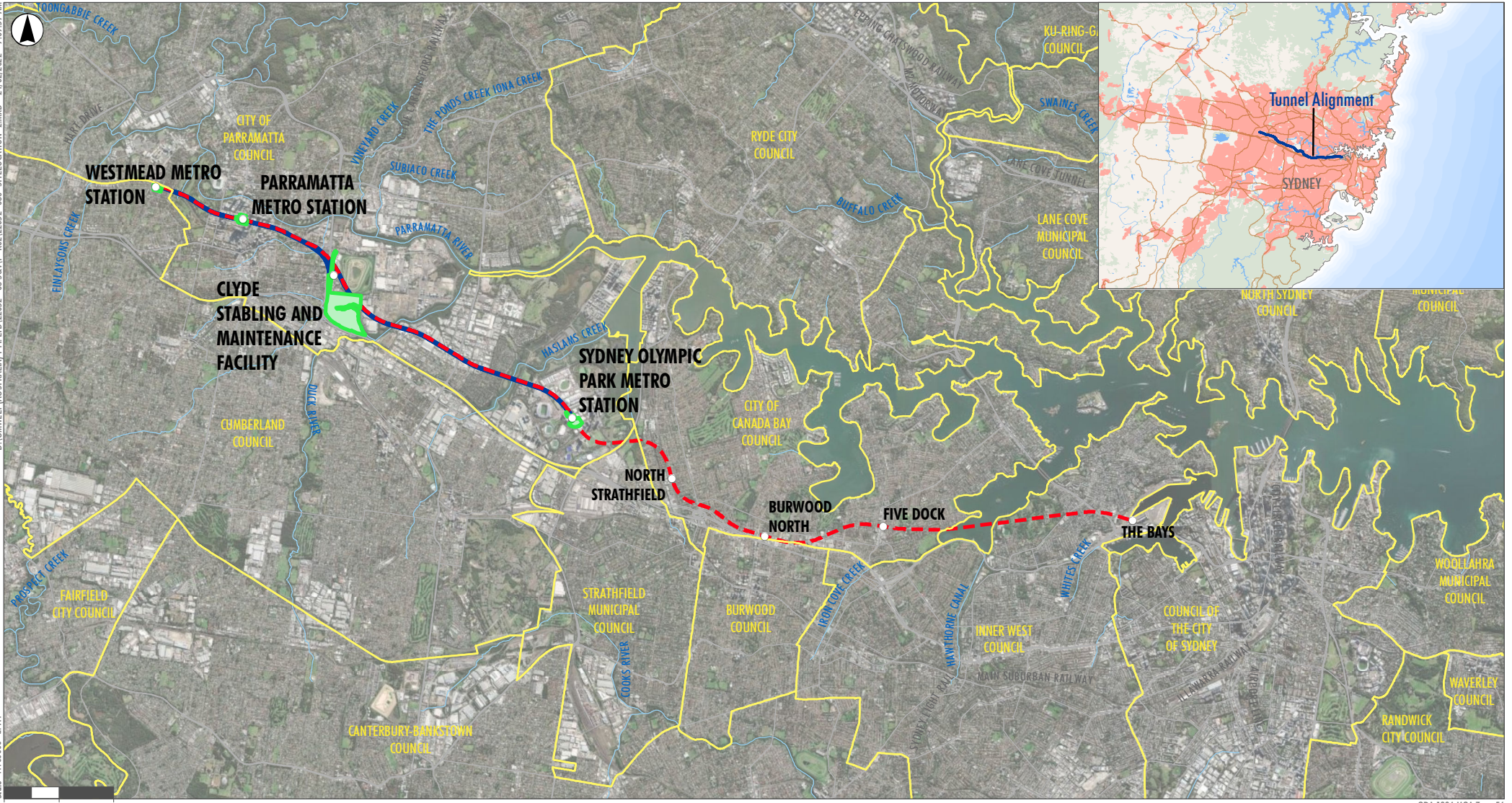
Tunnelling works will be undertaken between SOP and Westmead. Tunnelling will be undertaken by placing the TBMs at the Rosehill Services Facility box and retrieved out at the SOP Station Box and then placed back at the Rosehill Services Facility and retrieved at the Westmead Station Box.

The WTP works at SOP are confined to the same construction footprint as the CTP. WTP works will be undertaken after the site establishment, clearance and station box excavation for the CTP and therefore the surface works for the WTP are limited to those associated with the TBM retrieval.

Refer to Figure 1 for the location of the WTP project.

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Legend

- Surface Construction Sites
- The Project (Western Tunnelling Package)
- Sydney Metro West Concept and Stage 1
- Approved Station Sites
- Local Government Boundary
- Road
- Drainage Line
- Railway Line

1.2 Context

The Construction Environmental Management Plan (CEMP) and sub-plans have been developed for the delivery of the WTP. It will be delivered by Gamuda Australia Laing O'Rourke Consortium (GALC). This Heritage Management Plan (HMP) forms part of the CEMP (SMWSTWTP-GLO-1NL-EV-PLN-000001).

Sydney Metro West – Westmead to The Bays Concept and Stage 1 received planning approval on 11 March 2021 (SSI 10038). The Project comprises the WTP, which is the western portion of Stage 1 of SSI 10038, from Sydney Olympic Park to Westmead.

This HMP has been prepared to address requirements of the Minister's Conditions of Approval (MCoA) and any modifications to the MCoA, Revised Environmental Management Measures (REMMs) listed in the Sydney Metro West – Submissions Report, dated 20 November 2020, the Construction Environmental Management Framework (CEMF) requirements and all applicable legislation as they relate to the Project.

The Aboriginal and non-Aboriginal heritage impacts of the Project were assessed as part of the EIS for the Sydney Metro West – Westmead to The Bays Concept and Stage 1. The detailed assessments are in:

- Artefact, April 2020 *Sydney Metro West, Stage 1. Technical Paper 3: Non-Aboriginal Heritage Report to Sydney Metro (Technical Paper 3)*
- Artefact, April 2020, Sydney Metro West, Stage 1. Technical Paper 4: Aboriginal Cultural Heritage Assessment Report, Parramatta, Cumberland, Canada Bay and Inner West Local Government Areas Report to Sydney Metro (Technical Paper 4).
- Artefact, October 2020, Sydney Metro West Non-Aboriginal Archaeological Research Design Report to Sydney Metro.

The following assessments build upon those undertaken as part of the EIS assessments, and have been completed by Sydney Metro following receipt of the MCoA for the Project. This includes the following reports:

- Clyde MSF /Rosehill Services Facility
 - GML Heritage Pty Ltd, November 2021, *Clyde—Sydney Metro, Aboriginal Heritage Work Method Statement* report prepared for Sydney Metro
 - Artefact, November 2021 Sydney Metro West Modification: Clyde Stabling and Maintenance Facility Technical Paper: Non-Aboriginal Heritage Report prepared for Sydney Metro Authority (Clyde MSF Modification Technical Paper)
 - Umwelt, June 2021 *Sydney Metro West Western Tunnelling Package Clyde Dive Site Significant Fabric Salvage Report*, prepared for GALC
- Parramatta Metro Station Site
 - GML Heritage Pty Ltd. November 2021 Sydney Metro West Parramatta Construction Site Archaeological Research Design and Methodology prepared for Sydney Metro (ARDEM 2021)
 - GML Heritage Pty Ltd, October 2021, *Sydney Metro West Parramatta Construction Site Aboriginal Heritage Report*, report prepared for Sydney Metro (AHR 2021)
 - City Plan Heritage Pty Ltd July 2021 *Heritage Salvage Advice Report*, prepared for Sydney Metro

The following table (Table 1) provides an overview of the works undertaken to date for each element of the Project construction works, as well as any Aboriginal and non-Aboriginal heritage requirements that have been completed or are not the responsibility of GALC.

Table 1: Work undertaken to date at each Project construction site

Construction Site	Relevant Assessment	Heritage Consent Requirement	Works outside of GALC Scope	Work subject to this HMP and GALC Scope
Westmead	<ul style="list-style-type: none"> Technical Paper 3 Technical Paper 4 	<p>MCoA D31-MCoA D33</p> <p>(Unexpected heritage finds and human remains procedure)</p>	The Unexpected Heritage Finds and Human Remains Procedure has been prepared and submitted to the Planning Secretary by Sydney Metro.	Works undertaken by GALC will comply with the Unexpected Heritage Finds and Human Remains Procedure in Attachment 2.
Parramatta	<ul style="list-style-type: none"> Technical Paper 3 Technical Paper 4 ARDEM 2021 AHR 2021 City Plan Heritage Pty Ltd July 2021 Heritage Salvage Advice Report, prepared for Sydney Metro 	<p>MCoA D18</p> <p>(Heritage salvage)</p>	<p>The salvaged materials and moveable heritage register has been prepared and submitted to the Planning Secretary by Sydney Metro, identifying significant items to be salvaged for the following items:</p> <ul style="list-style-type: none"> 220 Church Street, Parramatta 48 Macquarie Street, Parramatta Parramall Shopping Centre, Parramatta 	<p>A salvaged materials and moveable heritage register will be developed for any additional heritage items or potential heritage items should they be identified for demolition during the course of the Project.</p>
		<p>MCoA D15</p> <p>(Investigation of Parramatta Convict Drain)</p>	<p>Detailed investigations will be undertaken by Sydney Metro in Area 1a and Area 1b during early works to confirm the location of the Parramatta Convict Drain.</p>	<p>GALC will undertake detailed investigations in Areas 2-4 of the site as directed by the Excavation Director to confirm the location of the Parramatta Convict Drain.</p> <p>Upon completion of investigations, the findings will</p>

Construction Site	Relevant Assessment	Heritage Consent Requirement	Works outside of GALC Scope	Work subject to this HMP and GALC Scope
				<p>inform detailed construction planning for the construction works at Parramatta Metro Station.</p> <p>GALC will undertake a photographic archival recording of any sections or components of the Parramatta Convict Drain that may require impacts as part of the Project.</p>
		<p>MCoA D21 / REMM AH2</p> <p>(Aboriginal archaeological test excavation)</p>	<p>Aboriginal archaeological test excavation will be undertaken by Sydney Metro in Area 1a and 1b.</p>	<p>Aboriginal archaeological test excavation will be undertaken by GALC for Areas 2-4, refer to Section 7.5.1.</p>
		<p>MCoA D22</p> <p>(Aboriginal archaeological test excavation methodology)</p>	<p>The Aboriginal Archaeological Test Excavation Methodology has been prepared by Sydney Metro, which is outlined in the AHR (GML, 2021)</p> <p>The Aboriginal Archaeological Salvage Excavation Methodology will be revised by Sydney Metro following analysis of the test excavation results, refer to Section 7.5.1.4.</p>	<p>Aboriginal archaeological test excavation will be undertaken by GALC for Areas 2-4, in accordance with the AHR 2021. Refer to Section 7.5.1.</p> <p>Should salvage excavation be required in areas 2-4, this will be undertaken by GALC.</p>

Construction Site	Relevant Assessment	Heritage Consent Requirement	Works outside of GALC Scope	Work subject to this HMP and GALC Scope
		<p>MCoA D23</p> <p>(Aboriginal archaeological excavation report)</p>	<p>Sydney Metro will facilitate access to the results of Aboriginal archaeological excavations during early works at Parramatta Station.</p>	<p>GALC will engage the Aboriginal archaeological excavation director to prepare the Aboriginal Cultural Heritage Excavation Report. This report will be provided to Sydney Metro for submission to the Department of Planning.</p>
		<p>MCoA D25-MCoA D27</p> <p>(Development of methodology for and completion of non-Aboriginal archaeological excavation)</p>	<p>A revised Archaeological Research Design and Excavation Methodology has been prepared by Sydney Metro in consultation with Heritage NSW.</p> <p>This document is:</p> <p>GML Heritage Pty Ltd. November 2021 Sydney Metro West Parramatta Construction Site Archaeological Research Design and Methodology prepared for Sydney Metro (ARDEM 2021)</p> <p>An Excavation Director has been appointed by Sydney Metro. The appointed Excavation Director is Abi Cryerhall, with Sophie Jennings Appointed as Secondary Excavation Director.</p>	<p>GALC will engage the Excavation Director throughout the Project, who will oversee and advise on matters associated with non-Aboriginal archaeology. Refer to Section 7.5.1.1.</p>

Construction Site	Relevant Assessment	Heritage Consent Requirement	Works outside of GALC Scope	Work subject to this HMP and GALC Scope
		<p>MCoA D28 and MCoA D29 / REMM NAH7</p> <p>(Non-Aboriginal archaeological excavation report)</p>	<p>Sydney Metro will facilitate access to the results of non-Aboriginal archaeological excavations during early works (Area 1a and Area 1b) at Parramatta Metro Station site.</p>	<p>GALC will undertake archaeological fieldwork in accordance with the program outlined in the ARDEM 2021, refer to Section 7.5.2.3.</p> <p>GALC will engage the nominated Excavation Director to prepare the non-Aboriginal archaeological excavation report for all investigations undertaken at the Parramatta Metro Station site, including Area 1a and Area 1b.</p> <p>GALC will provide the report to Sydney Metro for submission to the Department of Planning.</p>
		<p>MCoA D31-MCoA D33</p> <p>(Development of unexpected finds procedures)</p>	<p>The Unexpected Heritage Finds and Human Remains Procedure has been prepared and submitted to the Planning Secretary by Sydney Metro.</p>	<p>Works undertaken by GALC will comply with the Unexpected Heritage Finds and Human Remains Procedure in Attachment 2.</p>
		<p>REMM NAH1 / NAH10</p>	<p>Sydney Metro has carried out archival recording for the following sites:</p>	<p>N/A</p>

Construction Site	Relevant Assessment	Heritage Consent Requirement	Works outside of GALC Scope	Work subject to this HMP and GALC Scope
		(Archival recording)	<ul style="list-style-type: none"> Shops (and potential archaeological site) (Parramatta LEP Item No. I703) Kia Ora (and potential archaeological site) (Parramatta LEP Item No. I716) 220 Church Street, Parramatta 48 Macquarie Street, Parramatta 	
		REMM NAH10 (Assessment of significance for unlisted heritage items)	<p>Sydney Metro has undertaken an assessment of significance for the following sites:</p> <ul style="list-style-type: none"> 220 Church Street, Parramatta 48 Macquarie Street, Parramatta. These assessments are included in the Technical Paper 3 	This Plan has been prepared with consideration to the two unlisted sites, which were identified as meeting the threshold for local heritage significance.
Clyde	<ul style="list-style-type: none"> Technical Paper 3 Technical Paper 4 GML Heritage Pty Ltd, November 2021, Clyde—Sydney Metro, Aboriginal Heritage Work 	MCoA D18 (Heritage salvage)	N/A	GALC will prepare a salvaged material register and methodology for any heritage items identified for demolition as part of the project. This will include the Rosehill Railway Station Footbridge and any other items that may be identified during the course of the Project.

Construction Site	Relevant Assessment	Heritage Consent Requirement	Works outside of GALC Scope	Work subject to this HMP and GALC Scope
	Method Statement report prepared for Sydney Metro, <ul style="list-style-type: none"> Clyde MSF Modification Technical Paper 	MCoA D21 / REMM AH2 (Aboriginal archaeological test excavation)	Aboriginal archaeological test excavation has been undertaken by Sydney Metro in the areas of identified archaeological potential at the Clyde site.	N/A
		MCoA D22 (Aboriginal archaeological test excavation methodology)	The Aboriginal Archaeological Test Excavation Methodology has been prepared by Sydney Metro, which is outlined in Aboriginal Heritage Work Method Statement prepared for the site (GML, 2021)	N/A
		MCoA D23 and MCoA D29 (Aboriginal archaeological excavation report)	At the completion of Aboriginal cultural heritage test excavations Sydney Metro will complete an Aboriginal Cultural Heritage Excavation Report.	N/A
		MCoA D31-MCoA D33 (Development of unexpected finds procedures)	The Unexpected Heritage Finds and Human Remains Procedure has been prepared and submitted to the Planning Secretary by Sydney Metro.	Works undertaken by GALC will comply with the Unexpected Heritage Finds and Human Remains Procedure in Attachment 2.

Construction Site	Relevant Assessment	Heritage Consent Requirement	Works outside of GALC Scope	Work subject to this HMP and GALC Scope
		REMM NAH1 (Archival recording)	Sydney Metro has carried out archival recording for the following sites: <ul style="list-style-type: none"> RTA Depot (Parramatta LEP Item No. I576) 	N/A
Rosehill	<ul style="list-style-type: none"> Technical Paper 3 Technical Paper 4 Clyde MSF Modification Technical Paper 	MCoA D31-MCoA D33 (Development of unexpected finds procedures)	The Unexpected Heritage Finds and Human Remains Procedure has been prepared and submitted to the Planning Secretary by Sydney Metro.	Works undertaken by GALC will comply with the Unexpected Heritage Finds and Human Remains Procedure in Attachment 2.
Sydney Olympic Park	<ul style="list-style-type: none"> Technical Paper 3 Technical Paper 4 	MCoA D31-MCoA D33 (Development of unexpected finds procedures)	The Unexpected Heritage Finds and Human Remains Procedure has been prepared and submitted to the Planning Secretary by Sydney Metro.	Works undertaken by GALC will comply with the Unexpected Heritage Finds and Human Remains Procedure in Attachment 2.
		REMM NAH1 (Archival recording)	Sydney Metro will undertake archival recording for the following sites as part of the Central Tunnelling Package Work: <ul style="list-style-type: none"> State Abattoirs (SEPP Listing No. A) 	N/A

1.3 Environmental Management System Overview

The Project CEMP is the primary Environmental Management System (EMS) document for the delivery of the proposed works. This HMP is one of a suite of aspect-specific support plans that have been prepared to support the CEMP.

Key interactions for this sub-plan with other management plans in the EMS include:

- Site Establishment Management Plan
- Noise and Vibration Management Sub-plan
- Spoil Management Sub-plan
- Flora and Fauna Management Sub-plan
- Visual Amenity Management Sub-plan.

An overview of the Environmental Management System (EMS) is provided in the CEMP Section 4.

1.4 Consultation Requirements

1.4.1 Government Agencies

In accordance with MCoA C5, this HMP has been prepared in consultation with relevant government agencies including:

- Heritage NSW
- Sydney Olympic Park Authority (SOPA) (in respect of Sydney Olympic Park)
- City of Parramatta Council
- Cumberland City Council.

Consultation was undertaken over a 21-day period, commencing on 21 April 2022 with the submission of the HMP. The Consultation approach was applied across all plans and stakeholders and included issuing of the document to stakeholders accompanied by an introductory workshop. Following receipt of comments two weeks later, an offer was made to hold a comment review workshop to discuss and close comments directly with the stakeholder the following week. A second workshop would also be made available should there be any outstanding or technical issues requiring further discussion.

An introductory meeting was held on 24 March with City of Parramatta Council, 1 April with SOPA, 7 April with Cumberland City Council and 20 April with Heritage NSW, which was organised by Sydney Metro and delivered by GALC. At the introductory meeting, GALC introduced themselves, the project team and outlined the scope of the WTP. The consultation approach was presented, and feedback invited on that approach. No issues were raised on the consultation approach during the introductory meetings.

None of the stakeholders took the offer of a comment review workshop in relation to their review of this HMP.

Details of issues raised by stakeholders during consultation is provided in Attachment 6, including copies of correspondence in accordance with MCoA A6. The approach to consultation is further outlined in the CEMP.

1.4.2 Aboriginal Community Consultation

Consultation with the Registered Aboriginal Parties (RAPs) has been undertaken during the preparation of the EIS and technical studies, as well as the AHR 2021. GALC is required to continue this consultation for the duration of the Project in relation to Aboriginal cultural heritage. A list of the RAPs consulted on the Project is included in Attachment 4.

A description of ongoing consultation requirements to be implemented throughout construction are described in Section 7.4.1 of this HMP. A log of consultation with Aboriginal community members is included in Attachment 4 and will be updated following all future consultation.

1.5 Certification and Approval

Sydney Metro West – Westmead to The Bays Concept and Stage 1 was subject to environmental impact assessment under the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). It was also declared a Critical State Significant Infrastructure (CSSI) by the Minister for Planning & Public Spaces (the Minister).

An Environmental Impact Statement (EIS) has been prepared under Division 5.2 of the EP&A Act and in accordance with Part 3 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000. Following exhibition of the EIS, an Amendment Report and Submissions Report were also prepared. After an assessment was carried out, the Minister determined that the Sydney Metro West – Stage 1 would be approved subject to conditions.

The planning approval (Infrastructure Approval SSI 10038) and related environmental assessment documents are located at: <https://www.planningportal.nsw.gov.au/major-projects/project/25631>.

This HMP, Archaeological Research Design and Excavation Methodology (except for Parramatta Metro Station which was approved on 28 October 2021), Unexpected Heritage Finds Procedure and Exhumation Management Plan will be approved by the Planning Secretary (DPE). This HMP will be submitted to the ER for endorsement and the Planning Secretary for approval no later than one (1) month before the commencement of construction. Construction will not commence until this HMP has been endorsed by the ER and approved by the Planning Secretary, unless otherwise agreed by the Planning Secretary.

The Final Excavation Report and Aboriginal Cultural Heritage Excavation Report will be submitted to the Planning Secretary, Heritage NSW, and the Relevant Council for information no later than 24 months after the completion of any archaeological excavation. This will be the responsibility of Sydney Metro.

This sub-plan including the Unexpected Heritage Finds Procedure and Exhumation Management Plan, including any minor amendments approved by the ER, will be implemented for the duration of construction.

1.6 Authorship

This HMP has been prepared by GALC in response to MCoA C13. In accordance with MCoA C13(a), this document has been prepared by Melissa Moritz, Umwelt Senior Heritage Consultant, with review and input by Nicola Roche and Tim Adams, Umwelt Principal Consultants.

2 PURPOSE AND SCOPE

2.1 Purpose

The purpose of the HMP is to describe the heritage management approach that will be utilised by GALC employees and its subcontractors during construction of the Project. This sub-plan forms an integral part of the Project CEMP and GALC's EMS. It applies to all works associated with the Project and establishes the environmental management controls to be implemented by GALC employees and its subcontractors.

This HMP outlines how GALC will comply with and implement the applicable heritage requirements of the:

- Sydney Metro Construction Environmental Management Framework (CEMF)
- Minister for Planning and Public Space's Conditions of Approval for the Project (MCoA)
- Revised Environmental Mitigation Measures (REMMs)
- SSI Modifications - Modification 1 Administrative Modification
- SSI Modifications - Modification 2 Clyde Stabling And Maintenance Facility – Current Status (16 May 2022) being: More Information Required
- Infrastructure Sustainability Council (ISC) Infrastructure Sustainability (IS) rating tool.

2.2 Scope

This sub-plan outlines the mitigation and management measures that GALC will use to comply with relevant approval, statutory and contract requirements in relation to potential impacts to Aboriginal and non-Aboriginal heritage during construction of the Project.

Specifically, this sub-plan addresses environmental aspects and impacts that relate to:

- Site establishment including installation of site sheds and site amenities, noise barriers and protective hoardings surrounding the construction sites
- Site clearing as approved in the EIS (excluding SOP which will be cleared as part of the CTP)
- Earthworks, including excavation and piling
- Realignment of Duck Creek and A'Becketts Creek, Clyde (to be partly enclosed in proposed culverts and remainder to be retained as a naturalised channel)
- Temporary road and intersection modification / site access
- Minor utility works and connections
- Tunnelling:
 - Ventilation passages excavation
 - Cross passage excavation
 - Tunnel decline/shaft excavation
- Tunnel supporting activities:
 - Spoil handling (including on-site truck movements)
 - Construction of acoustic sheds and other mitigation measures.

3 OBJECTIVES AND TARGETS

The key objectives of the HMP are to ensure that impacts to Aboriginal and Non-Aboriginal heritage are minimised and are within the scope permitted by the MCoA. To achieve these objectives, the targets in Table 2 have been established for the management of heritage impacts during the Project construction.

Table 2: Cultural heritage targets and performance criteria

Objective	Target	Measurement Tool
Consider heritage values in any architectural design, education, or physical interpretation	Heritage values are embedded in the Project design plans and construction management plans. Heritage awareness training for a site is included in site inductions.	Site induction records Design review process to include review of heritage impacts associated with any proposed design or construction planning modifications. This will include impacts on Aboriginal and non-Aboriginal archaeology and cultural heritage and built heritage items in or near the construction site.
Minimise impacts on items or places of heritage value	Impact to heritage items and places are minimised through implementing control measures implemented during construction.	Condition surveys before, during and after construction Archival recording prior to the commencement of construction works Records of vibration and archaeological monitoring undertaken for construction activities Site inspections during construction activities Audits of work practices, protective measures and compliance with CoA and mitigation measures.
Ensure full compliance with the MCoA and mitigation measures for the Project.	Complete the construction of the Western Tunnelling Package with zero non-compliance incidents.	Condition surveys Archival recordings Records of vibration and archaeological monitoring undertaken for construction activities Site inspections Audits
Avoid accidental impacts on heritage items	A HMP is prepared for the Project.	Condition surveys before, during and after construction

Objective	Target	Measurement Tool
	Information regarding the location of known heritage and applicable control measures are included in site inductions and Environmental management documents.	Archival recording prior to the commencement of construction works Records of vibration and archaeological monitoring undertaken for construction activities Site inspections during construction activities Audits of work practices, protective measures and compliance with CoA and mitigation measures
Maximise worker’s awareness of Aboriginal and Non-Aboriginal heritage	Information regarding heritage items and their heritage significance and location is included in site inductions.	Site induction records
Meet IS rating tool requirements and objectives in the Sustainability Management Plan	Level 1 for credit Her-1 ‘Heritage assessment and management’ which demonstrates community heritage values have been identified through consultation and integrated into studies as well as measures to minimise adverse impacts to heritage during construction have been identified and implemented Level 2 for credit Her-2 ‘Monitoring of heritage’ which demonstrates monitoring of heritage has been undertaken at appropriate intervals during construction and that the monitoring and modelling demonstrates maintenance of heritage values	Construction Monitoring Program Consultation Records Section 7

4 ENVIRONMENTAL REQUIREMENTS

4.1 Legislation and Standards

Legislation and standards as they apply to the Project to be undertaken by GALC are provided in Table 3.

Table 3: Legislation, standards, policies, and guidelines, relevant to the Project

Legislation	<p><i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)</i> <i>Australian Heritage Council Act 2003 (Cth)</i> <i>Coroners Act 2009 (NSW)</i> <i>Environmental Protection and Biodiversity Conservation Act 1999 (Cth)</i> <i>Environmental Planning and Assessment Act 1979 (NSW)</i> <i>Protection of the Environment Operations Act 1997 (NSW)</i> <i>National Parks and Wildlife Act 1974 (NSW)</i> <i>Heritage Act 1977 (NSW)</i></p>
Standards	<p>AS/NZS ISO 14001: <i>Environmental Management</i></p>
Guidelines and Specifications	<p>Code of Practice for the archaeological investigation of Aboriginal objects in NSW (OEH 2010) Aboriginal cultural heritage consultation requirements for proponents 2010 (OEH 2010) Due Diligence Code of practice for protection of Aboriginal objects in NSW (OEH 2010) Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW (OEH 2010) Assessing Heritage Significance (NSW Heritage Office 2001) Levels of Heritage Significance (NSW Heritage Office 2008) Assessing Significance for Historical Archaeological Sites and Relics (NSW Heritage Branch, Department of Planning 2009) NSW Heritage Council’s Criteria for Assessment of Excavation Directors (2011) Investigating Heritage Significance (NSW Heritage Office 2001) NSW Government’s Aboriginal Participation in Construction Guidelines (2007) How to Prepare Archival Recording of Heritage Items (Heritage Branch 1998) Photographic Recording of Heritage Items Using Film or Digital Capture (Heritage Branch 2006) Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977</p>

4.2 Approvals, Licences and Permits

This HMP has been developed to satisfy the requirements of MCoA C1. A full list of applicable MCoAs, REMMs, CEMF requirements and EPL condition requirements is provided in Attachment 1 of this plan.

Other legislation relevant to this HMP is included in Attachment 2 of the CEMP.

4.3 IS Rating Tool Requirements

The IS Rating Tool requirements relevant to this HMP are outlined in Table 4 below.

Table 4: IS Rating tool requirements specific to this HMP

Credit	IS Rating Tool Requirement	Document Reference
Her-1 L1	Community heritage values have been identified through consultation and integrated into studies Measures to minimise adverse impacts to heritage during construction and operation have been identified and implemented	Attachment 4 Section 7
Her-2 L1	Monitoring of heritage is undertaken at appropriate intervals during construction	Section 8.3 Construction Monitoring Program
Her-2 L2	Requirements of L1 are achieved Monitoring and modelling of heritage demonstrates maintenance of heritage values.	Construction Monitoring Program

5 EXISTING ENVIRONMENT

As identified in Section 1.2, the Project EIS included Aboriginal and Non-Aboriginal technical papers which identified the heritage context of each Project construction site. This included the assessment of listed heritage items and potential heritage items in the construction site as well as areas of Aboriginal and non-Aboriginal archaeological potential. The following section provides a summary of the existing environment at each of the Project construction sites, as well as identifying where further management measures are required to be completed as part of the Project. The details of the management measures for the Project are included in Section 7 of this HMP.

5.1 Westmead Metro Station

5.1.1 Non-Aboriginal Heritage

5.1.1.1 Listed Heritage Items

No listed heritage items are located within the Westmead Metro Station construction site.

Technical Paper 3 identified three listed heritage items located in the vicinity of the construction site. These are listed in Table 5, with their location in relation to the construction site shown in Figure 2.

Table 5: Listed heritage items in the vicinity of Westmead Metro Station construction site

Heritage Item	Listing	Significance	Location
Westmead Public School c.1917	Cumberland LEP 2021 Item I295	Local	20m southwest of the construction site
Victorian Residence (in grounds of UWS)	Parramatta LEP 2011 I629	Local	60m northwest of the construction site
University of Western Sydney	Parramatta LEP 2011 I628	Local	60m northwest of the construction site

5.1.1.2 Identified Potential Heritage Items

Technical Paper 3 did not identify any potential heritage items located in the construction site or within the vicinity. No further assessment of potential heritage items is required.

5.1.1.3 Non-Aboriginal Archaeological Potential

During utilities investigations associated with the Sydney Metro West project, several areas of sandstone road surfaces were encountered. These were assessed by RPS in August of 2021 as being the ballasted sandstone base of a cambered road (known as a Telford Road), dating from the 1920s – 1930s.

The works encountered sit on the perimeter and outside of the Westmead Metro Station construction site and will not be removed in their entirety by the Project. If encountered during works, archival recording will be undertaken.

No further assessment or investigations is required to manage the 1920s-1930s sandstone road surface.

5.1.2 Aboriginal Cultural Heritage

Technical Paper 4 did not identify any registered Aboriginal sites located within the construction site and it was assessed as having low potential to contain Aboriginal objects and low archaeological potential. No further assessment or investigations are required.

5.1.3 Relevant Mitigation and Management Measures

The construction activities at Westmead Metro Station construction site must implement the following environmental management and mitigation measures:

- Protecting Aboriginal Heritage (Section 7.3.4)
- All project-wide management and mitigation measure (Section 7.1, Table 13)
- Settlement (Section 7.4.8)
- Unexpected Heritage Finds (Section 7.4.5).



Legend

- Construction Boundary
- WTP Tunnel Alignment
- Local Environmental Plan – Heritage Conservation Area
- Item - General

GDA 1994 MGA Zone 56

FIGURE 2
Heritage Items in the context of Westmead Metro West Construction Site

5.2 Parramatta Metro Station

5.2.1 Non-Aboriginal Heritage

5.2.1.1 Listed Heritage Items

The Technical Paper 3 identified five local heritage items and one state heritage item located within the Parramatta Metro Station construction site or immediately adjoining the site. The 'Shops' and 'Kia Ora' heritage items, which are located completely within the Parramatta Metro Station construction site, will be retained and identified as a 'Heritage No-go Zone' (refer to Section 7.6.8). There are also 11 listed heritage items located in the vicinity of the construction site.

Table 6 provides the details of the listed heritage items identified, with their location also shown on Figure 3.

Table 6: Listed Heritage Items located in the Parramatta Metro Station Construction Site or within the vicinity

Heritage Item	Listing	Significance	Location
Shops (and potential archaeological site) (41-59 George Street, Parramatta)	Parramatta LEP 2011 Item I703	Local	Within construction site
Convict Drain	Parramatta LEP 2011 Item I647	Local	Partially within construction site
Kia Ora (and potential archaeological site)	Parramatta LEP 2011 Item. I716	Local	Within construction site
Roxy Theatre	SHR Listing No. 00711 Parramatta LEP 2011 Item I00711	State	Within buffer zone; immediately adjacent (east) of construction site
Horse Parapet Façade (and potential archaeological site)	Parramatta LEP 2011 Item. I656	Local	Within buffer zone; immediately adjacent (southwest) of construction
Murrays' Building (and potential archaeological site)	Parramatta LEP 2011 Item I652	Local	Within buffer zone; 20m south of construction site
Dr Pringle's Cottage	Parramatta LEP 2011 Item I705	Local	Partially within buffer zone; 20m north of construction site
Redcoat's Mess House	SHR Listing No. 00218 Parramatta LEP 2011 Item. I00218	State	Partially within buffer zone; 40m north of construction site
Civic Arcade (former theatre) (and potential archaeological site)	Parramatta LEP 2011 Item. I704	Local	Partially within buffer zone; 20m north of construction site

Heritage Item	Listing	Significance	Location
Westpac Bank	Parramatta LEP 2011 Item. I665	Local	Partially within buffer zone; 40m northwest of construction site
Wall and Sandstone Cellblock (and potential archaeological site)	Parramatta LEP 2011 Item I659	Local	Partially within buffer zone; 40m northwest of construction site
HMV (former Commonwealth Bank) (and potential archaeological site)	Parramatta LEP 2011 Item I658	Local	Partially within buffer zone; 20m west of construction site
Telstra House (former post office) (and potential archaeological site)	Parramatta LEP 2011 Item. I657	Local	Partially within buffer zone; 20m west of construction site
Shop (and potential archaeological site)	Parramatta LEP 2011 Item I655	Local	Partially within buffer zone; 20m west of construction site
Bicentennial Square and adjoining buildings	Parramatta LEP 2011 Item I651	Local	Partially within buffer zone; 20m south of construction site
Centennial Memorial Clock	Parramatta LEP 2011 Item I654	Local	Partially within buffer zone; 40m south of construction site
Leigh Memorial Uniting Church	Parramatta LEP 2011 Item I719	Local	Within buffer zone; 20m south of construction site

5.2.1.2 Identified Potential Heritage Items

The assessment prepared in Technical Paper 2 identified two potential heritage items located within the construction site. Although these items are not included on a statutory heritage register (such as a local environmental plan or the NSW State Heritage Register), they were assessed as meeting the threshold for local heritage significance. The details of the potential heritage items are included in Table 7. These items will be demolished as part of the early works under the existing project approvals and therefore will not be subject to additional management controls within this HMP.

Table 7: Potential Heritage Items Identified within the Parramatta Metro Station Construction Site.

Potential Heritage Item	Assessment significance	Location
Late 19th century commercial building 220 Church Street Parramatta	Local	Within the construction site
Mid-20th century Inter-War Modern style commercial building 48 Macquarie Street, Parramatta	Local	Within the construction site

5.2.1.3 Non-Aboriginal Archaeological Potential

Technical Paper 3 included an assessment of potential for the construction site to contain non-Aboriginal (historical) archaeological remains. This assessment identified that the site has the potential to contain significant archaeological remains, including the remains of the heritage listed 'Convict Drain', which is likely located below the existing ground surface. The ARDEM 2021 subsequently prepared in accordance with MCoA D25 provided a more detailed assessment of non-Aboriginal archaeological potential and identified areas ranging from low to high potential to contain historical archaeological remains. Figure 4 shows the mapping of archaeological potential for the construction site, including the approximate location of the Convict Drain which will not be impacted by the Project.

Archaeological investigations, including testing and salvage excavations is required prior to the commencement of construction impacts on the site. This has commenced as part of the Early Works package by Sydney Metro, and will be continued as part of the Project. The location of the Convict Drain has been confirmed as part of the Early Works archaeological investigations.

5.2.2 Aboriginal Cultural Heritage

Technical Paper 4 identified that an Aboriginal site – a Potential Archaeological Deposit, was located within the Parramatta Metro Station construction site. This Aboriginal archaeological site is listed on the Aboriginal Heritage Information Management Sydney as Site ID 45-6-3582. It was also identified that the construction site had the potential to contain significant Aboriginal archaeological remains.

The AHR 2021 expanded on this assessment prepared for Parramatta Metro Station in Technical Paper 4. It identifies that the construction site is partially located within the mapped extent of the Parramatta Sand Body (PSB), a significant geological feature which is listed on the NSW State Heritage Register (item 01863). The PSB is a significant archaeological resource which has the potential to contain evidence of Aboriginal activity dating from the Holocene and Pleistocene epochs.

The site and surrounding area have been identified as being significant to Aboriginal people due to its association with evidence of occupation and passing history onto future generations. The site was assessed as indicatively being of moderate to high significance through its research potential and scientific value and of moderate significance in terms of its representative and rarity values. The construction site has been assessed as having moderate to high Aboriginal archaeological potential. Figure 4 identifies the areas of Aboriginal archaeological potential within the construction site.

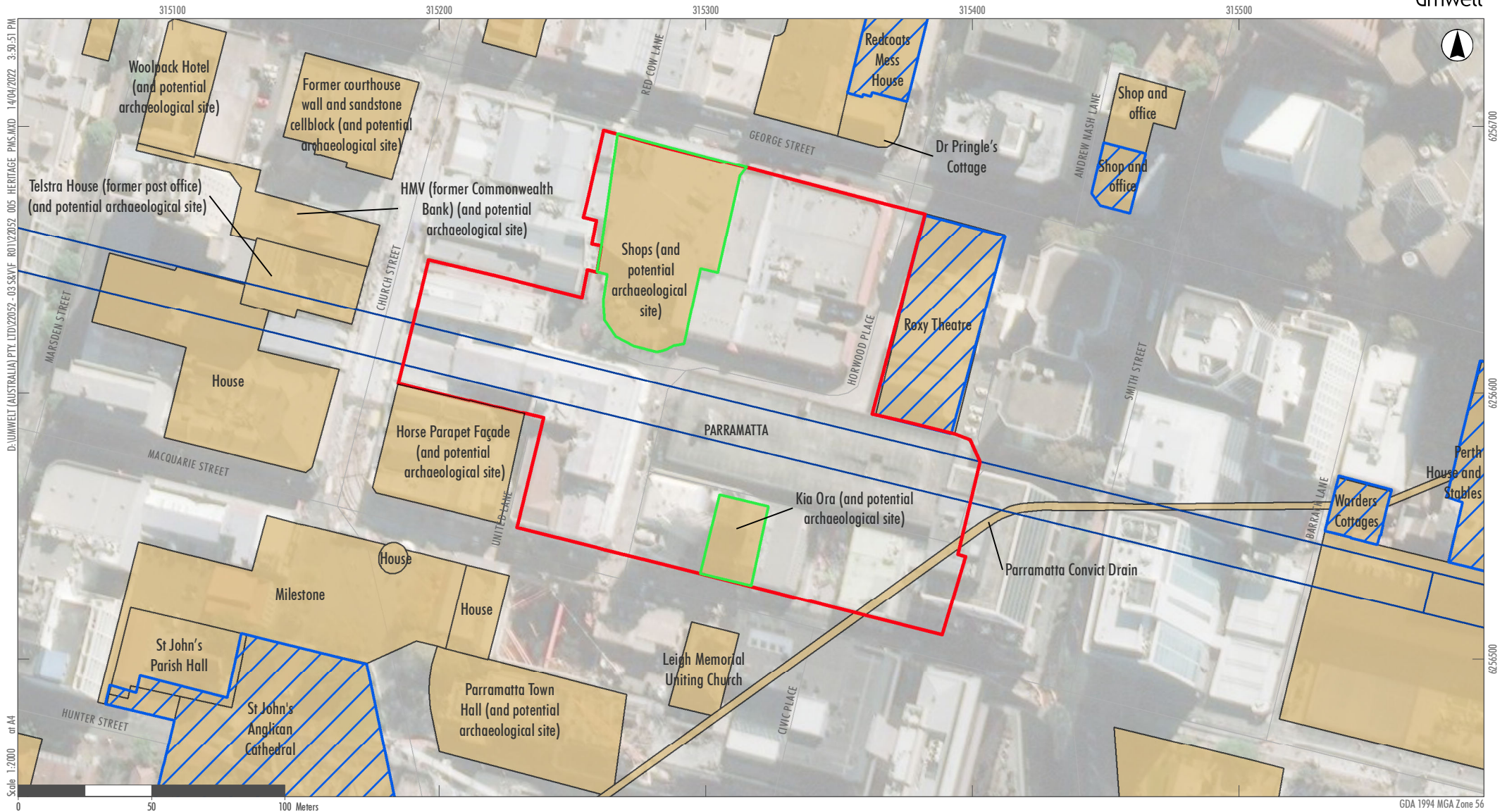
Archaeological investigations, including testing and salvage excavations are required prior to the commencement of construction impacts on the site, in conjunction with the non-Aboriginal archaeological investigations. This has commenced as part of the Early Works package by Sydney Metro, and will be continued as part of the Project.

5.2.3 Relevant Mitigation and Management Measures

The construction activities at Parramatta Metro Station construction site must implement the following environmental management and mitigation measures:

- All project-wide management and mitigation measure (Section 7.1, Table 13)
- Aboriginal Consultation (7.3.1)
- Protecting Aboriginal Heritage (Section 7.3.4)

- Parramatta Metro Station Archaeological Investigations (Section 7.4)
- Archival Recording (Section 7.5.1)
- Noise and Vibration Management (Section 7.5.2)
- Condition Survey (Section 7.5.2)
- Periodic Monitoring (Section 7.5.5)
- Settlement (Section 7.4.8)
- Unexpected Heritage Finds (Section 7.4.5)
- Incidental and Additional Impacts to Heritage (Section 7.5.7)
- Heritage Interpretation (Section 7.5.8)
- SHR Listing Update (Section 7.5.9).



- Legend**
- ▭ Construction Boundary
 - ▭ NSW State Heritage Item
 - WTP Tunnel Alignment
 - ▭ Local Environmental Plan - Heritage Item
 - ▭ Heritage Items to be Retained

FIGURE 3

Heritage Items in the context of Parramatta Metro Station



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- Legend**
- Construction Boundary
 - WTP Tunnel Alignment
 - Approximate Convict Drain Alignment
 - Heritage Items to be Retained
- Historical Archaeological Potential**
- High
 - Moderate
 - Low
 - Nil

GDA 1994 MGA Zone 56

FIGURE 4
Plan showing Historical Archaeological Potential at Parramatta Metro Station Construction Site

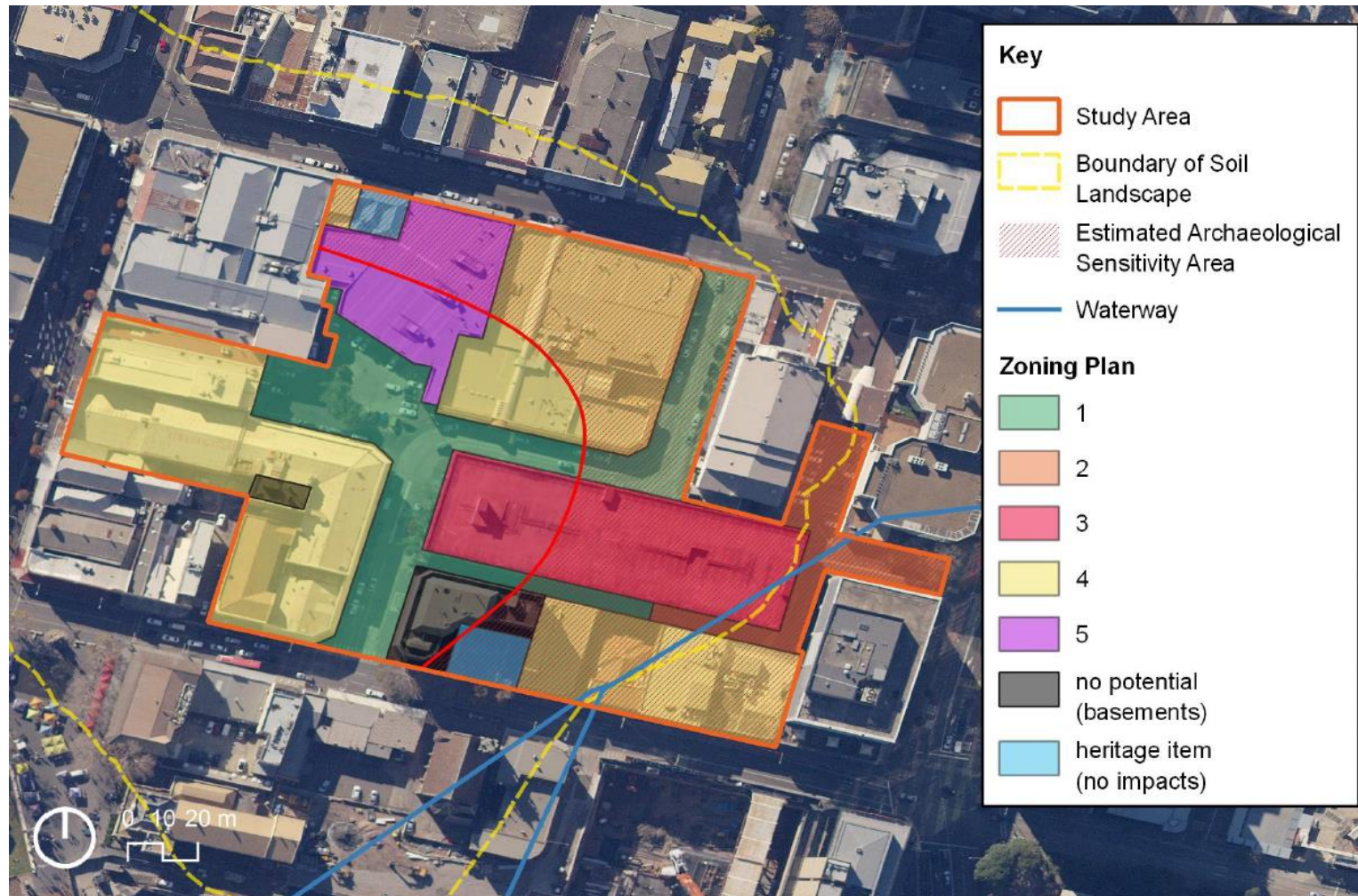


Figure 5: Aboriginal archaeology zoning plan for the Sydney Metro, Parramatta site, with hypothetical 'sensitivity line'. (Source: GML, AHR 2021)

5.3 Clyde Maintenance and Stabling Facility

5.3.1 Non-Aboriginal Heritage

5.3.1.1 Listed Heritage Items

Technical Paper 3 for the EIS identified three local heritage items located within the Clyde MSF construction site. There is also one listed heritage item located in the vicinity of the construction site. Table 8 provides the details of the listed heritage items identified, with their location also shown on Figure 6.

Table 8: Listed Heritage Items located in or within the vicinity of

Heritage Item	Listing	Significance	Location
Wetlands	Parramatta LEP 2011 Item I1	Local	Partially within the construction site
RTA Depot	Parramatta LEP 2011 Item I576	Local	Within the construction site
Pedestrian Bridge	Transport Asset Holding Entity Section 170 Heritage and Conservation Register Item 4801762	Local	Within construction site
Capral Aluminium	Parramatta LEP 2011 Item I575	Local	20m east of the construction site.

5.3.1.2 Identified Potential Heritage Items

The *Clyde Stabling and Maintenance Facility Technical Paper: Non-Aboriginal Heritage* (Artefact, 2021) prepared as part of the Modification 2 Report identified one potential heritage item located in the construction site. This was the former Rosehill Railway Station, which was identified as meeting the threshold for local heritage significance.

Table 9: Identified potential

Potential Heritage Item	Assessed Potential Significance	Location
Rosehill Railway Station	Local	Within the construction site

5.3.1.3 Non-Aboriginal Archaeological Sites

Technical Paper 4 for the EIS did not identify any known non-Aboriginal archaeological sites within the Clyde MSF. This construction site was also assessed as having low to nil potential to contain non-Aboriginal archaeology.

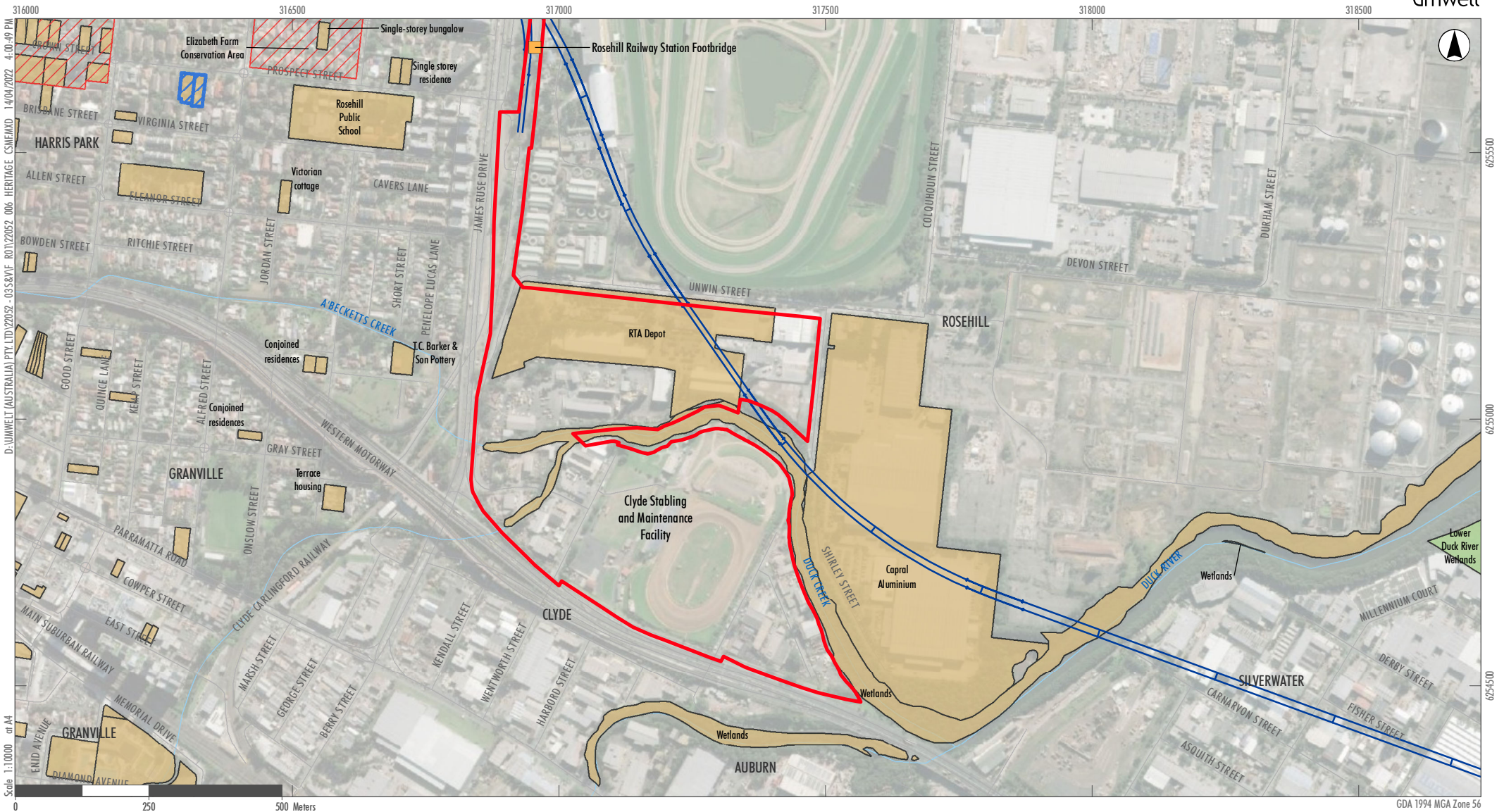
No further assessment or investigation was required as a result of Technical Paper 4 or the MCoA for the Project.

5.3.2 Aboriginal Cultural Heritage

The assessment in Technical Paper 4 for the EIS did not identify any registered Aboriginal sites located within the construction site. However, an area of low to moderate Aboriginal archaeological potential has been identified within the construction site. Other areas of the construction site have been assessed as having low potential for Aboriginal archaeology. This has been subject to further investigations and assessment by Metro, including test excavation completed in May 2022. Management of these areas will be informed by the results of the test excavations undertaken.

5.3.3 Relevant Mitigation and Management Measures

- All project-wide management and mitigation measure (Section 7.1, Table 13)
- Aboriginal Consultation (7.3.1)
- Protecting Aboriginal Heritage (Section 7.3.4)
- Archival Recording (Section 7.5.1)
- Noise and Vibration Management (Section 7.5.2)
- Condition Survey (Section 7.5.2)
- Periodic Monitoring (Section 7.5.5)
- Settlement (Section 7.4.8)
- Unexpected Heritage Finds (Section 7.4.5)
- Incidental and Additional Impacts to Heritage (Section 7.5.7)



- Legend**
- ▭ Construction Boundary
 - ▬ WTP Tunnel Alignment
 - TAHE Section 170 Heritage and Conservation Register Item
 - NSW State Heritage Item
 - Local Environmental Plan – Heritage Conservation Area
 - Local Environmental Plan – Heritage Item
 - Local Environmental Plan – Landscape Heritage Item

FIGURE 6
Heritage Items in the context of Clyde Stabling and Maintenance Facility Construction Site

5.4 Sydney Olympic Park Metro Station

5.4.1 Non-Aboriginal Heritage

5.4.1.1 Listed Heritage Items

The preparation of Technical Paper 3 identified that a listed heritage item is partially located within the Sydney Olympic Park Metro Station construction site. Table 10 provides the details of the listed item and Figure 7 shows the location.

Table 10: Listed heritage items located in the Sydney Olympic Park Construction Site.

Item	Listing	Significance	Location
State Abattoirs	State Environmental Planning Policy (State Significant Precincts) 2005 Listing No. A; Sydney Regional Environmental Plan No 24 – Homebush Bay Area Item No. 1	State	Partially within the construction site.

5.4.1.2 Identified Potential Heritage Items

The assessment within Technical Paper 3 did not identify any potential heritage items located in or near the construction site.

5.4.1.3 Non-Aboriginal Archaeological Sites

The Technical Paper 3 did not identify any known non-Aboriginal Archaeological sites within the construction site. This construction site was also assessed as having low to nil potential to contain non-Aboriginal archaeology.

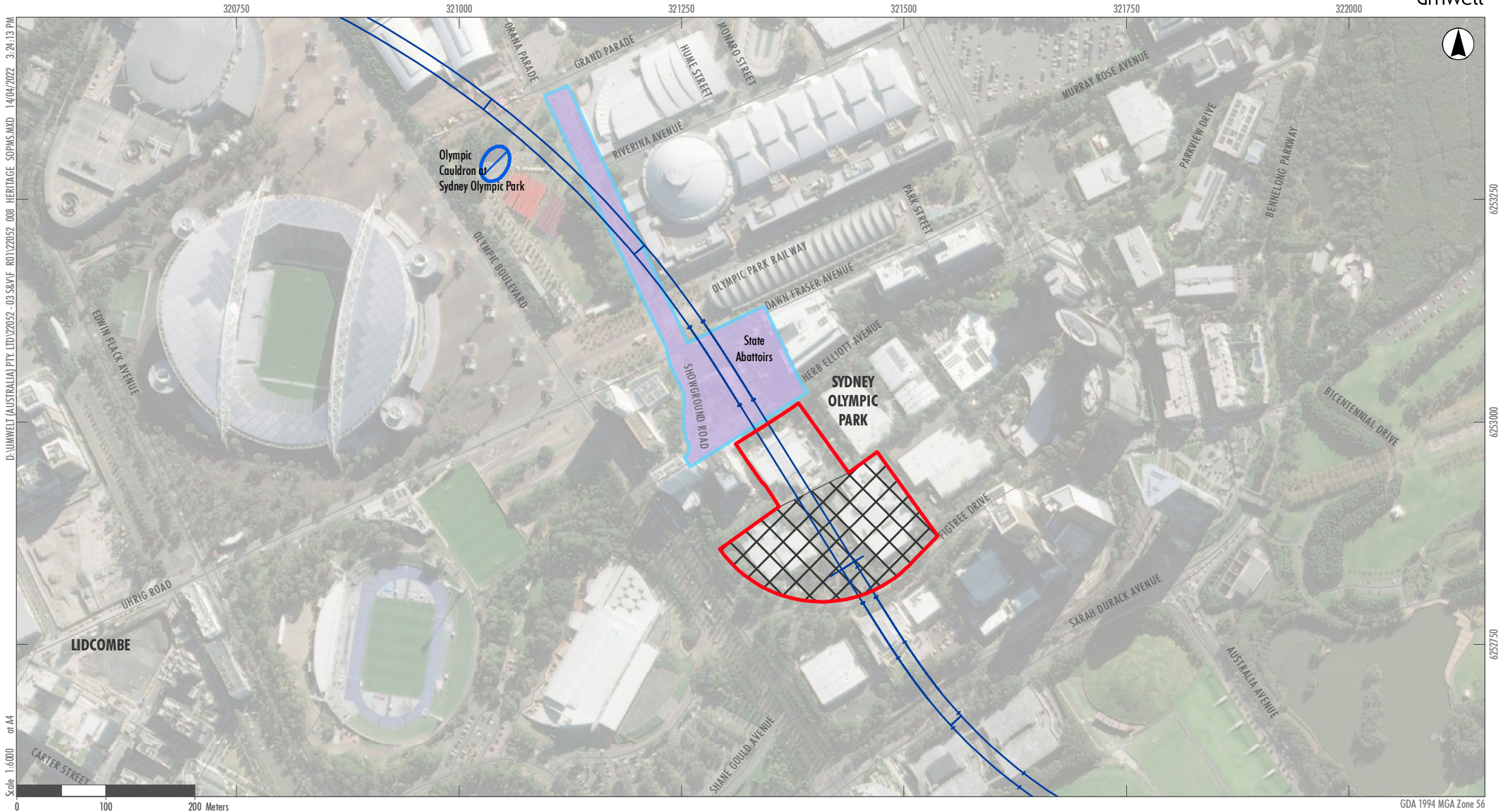
No further assessment or investigation was required as a result of Technical Paper 4 or the MCoA for the Project.

5.4.2 Aboriginal Cultural Heritage

Technical Paper 4 did not identify any registered Aboriginal sites located within the construction site and it was assessed as having low potential to contain Aboriginal objects and low archaeological potential. No further assessment or investigations are required.

5.4.3 Relevant Mitigation and Management Measures

- All project-wide management and mitigation measure (Section 7.1, Table 13)
- Protecting Aboriginal Heritage (Section 7.3.4)
- Noise and Vibration Management (Section 7.5.2)
- Periodic Monitoring (Section 7.5.5)
- Settlement (Section 7.4.8)
- Unexpected Heritage Finds (Section 7.4.5)
- Incidental and Additional Impacts to Heritage (Section 7.5.7)



Legend

- Construction Boundary
- NSW State Heritage Item
- Tunneling Alignment
- State Environmental Planning Policy – Heritage Item
- Start of CTP Tunnelling
- Sydney Regional Environmental Plan – Heritage Item

FIGURE 7

Heritage Items in the context of Sydney Olympic Park Metro Station Construction Site

6 ASPECTS AND IMPACTS

6.1 Construction Activities

The Project will involve a range of construction activities incorporating various heavy machinery, plant and equipment that will operate in several locations across the Project. To assess the level of potential impact on Aboriginal and non-Aboriginal heritage, the broad categories of construction activity likely to have an impact are identified below:

- Site establishment including installation of site sheds and site amenities, noise barriers and protective hoardings surrounding the construction sites
- Site clearing as approved in the EIS (excluding Sydney Olympic Park)
- Earthworks, including excavation and piling
- Realignment of Duck Creek and A'Becketts Creek, Clyde (to be partly enclosed in proposed culverts and remainder to be retained as a naturalised channel)
- Temporary road and intersection modification / site access
- Minor utility works and connections
- Tunnelling:
 - Ventilation passages excavation
 - Cross passage excavation
 - Tunnel decline/shaft excavation
- Tunnel supporting activities:
 - Spoil handling (including on-site truck movements)
 - Construction of acoustic sheds and other mitigation measures

6.2 Impacts

General construction activities that will impact, or have the potential to impact on Aboriginal and non-Aboriginal heritage during construction may include:

- Removal of vegetation and trees, including street trees, that have heritage significance for views and vistas of a site
- Vibrational impacts to heritage structures during construction
- Realignment of Duck Creek and A'Becketts Creek, Clyde
- General construction works undertaken within areas of archaeological potential
- Introduction of temporary structures, work areas and equipment during construction, resulting in changes to the surrounding setting and context of heritage items. This includes:
 - Introduction of acoustic sheds
 - Set up and use of material, plant and spoil storage areas during construction, although these may be screened by the acoustic shed or other measures
 - The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs
 - Introduction of car parks, laydown areas, workshops, dangerous goods storage, wheel wash, site offices and staff amenities during construction
 - Introduction of metal clad acoustic sheds

- Roadworks, road closures, footpath and bus stop relocation within the area surrounding the site
- Introduction of noise barriers and hoardings surrounding the construction sites
- Establishment of a concrete segment production facility
- Construction of open dive structures
- General earthworks
- Excavation works.

The potential for impacts on Aboriginal and non-Aboriginal heritage from the above aspects of the Project will depend on several factors. Primarily impacts will be dependent on the nature, extent and magnitude of construction activities.

Table 11 outlines the assessed impacts of the Sydney Metro West – Stage 1 works, as identified in Technical Paper 3 of the EIS, on the non-Aboriginal heritage and archaeological remains. The impacts for Parramatta Convict Drain have been updated based on the preliminary results of archaeological investigations during Early Works on the site.

It should be noted that Table 11 includes impacts as a result of the Project, as well as impacts resulting from other delivery phases for Sydney Metro West – Stage 1 (refer to Section 1.5 of the CEMP for more detail). The risks to heritage items from construction works have also been assessed as part of a risk assessment in Attachment 4 of the CEMP. Refer to Figure 8 for the potential impacts to historical archaeology as a result of construction.

Impacts on the listed AHIMS sites and areas of Aboriginal archaeological potential are also included in Table 11.

Section 7 includes a suite of mitigation measures that will be implemented to avoid or minimise impacts.

Table 11: Potential impacts on heritage items and archaeological remains as identified in the EIS

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
Westmead				
Westmead Public School <i>Cumberland LEP Item No. 1295</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Minor Changes to the surrounding setting and context of the heritage item due to demolition of existing buildings and construction activities.
Parramatta				
Shops (and potential archaeological site) (41-59 George Street, Parramatta) <i>Parramatta LEP Item No. 1703</i>	Local	Minor This heritage item is located within the Parramatta metro station construction site. Demolition of the modern adjoining development / additions within the heritage curtilage of this item as part of the Early Works scope.	Minor The heritage item would experience vibration levels above the cosmetic damage screening criteria.	Minor Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Convict Drain <i>Parramatta LEP Item No. 1647</i>	Local	Neutral A portion of the curtilage of the heritage item is located within the construction site. Archaeological investigations undertaken as part of the Early	Minor The heritage item is unlikely to experience vibration levels above the cosmetic damage screening criteria.	Neutral As a subsurface archaeological item, the portion of this item which is located outside of the construction site for Stage 1 cannot be visually impacted.

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
		<p>Works for the site have located the alignment of the drain within the site.</p> <p>The Convict Drain is not located within the areas of ground disturbance and will not be subject to direct impacts as part of the Project scope.</p>		
Roxy Theatre	State	Neutral	Minor	Minor
		<p>This heritage item is not located within the construction site, therefore there would be no direct impact.</p>	<p>The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria.</p>	<p>Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.</p>
Horse Parapet Façade (and potential archaeological site)	Local	Neutral – Minor	Minor	Minor
		<p>This heritage item is not located within the construction site, therefore there would be no direct impact.</p>	<p>The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria.</p>	<p>Possible minor impact to the remaining historic building to vibration / accidental damage during construction.</p> <p>Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.</p>

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
Murrays' Building (and potential archaeological site) <i>Parramatta LEP Item No. 1652</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Minor Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Kia Ora (and potential archaeological site) <i>Parramatta LEP Item No. 1716</i>	Local	Minor This heritage item is located within the Parramatta metro station construction site but would not be demolished.	Minor The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria.	Negligible Possible minor impact to the remaining historic building to vibration / accidental damage during construction. Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities. Construction activities would change the configuration and presentation of views towards Kia Ora, and would potentially detract from the historic quality of the 19th century residence.

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
Dr Pringle's Cottage <i>Parramatta LEP Item No. 1705</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Redcoat's Mess House <i>SHR Listing No. 00218 Parramatta LEP Item No. 100218</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Neutral Views of construction activities are shielded by existing buildings for this heritage item, therefore there would be no visual impact.
Civic Arcade (former theatre) (and potential archaeological site) <i>Parramatta LEP Item No. 1704</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Westpac Bank <i>Parramatta LEP Item No. 1665</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Minor Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
Former Courthouse Wall and Sandstone Cellblock (and potential archaeological site) <i>Parramatta LEP Item No. 1659</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Potential direct impact by vibration is not anticipated.	Neutral There are no visual corridors or sightlines to or from the Parramatta metro station construction site.
HMV (former Commonwealth Bank) (and potential archaeological site) <i>Parramatta LEP Item No. 1658</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Telstra House (former post office) (and potential archaeological site) <i>Parramatta LEP Item No. 1657</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Shop (and potential archaeological site) (197 Church Street, Parramatta)	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
<i>Parramatta LEP Item No. 1655</i>				buildings and construction activities.
Bicentennial Square and adjoining buildings <i>Parramatta LEP Item No. 1651</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Centennial Memorial Clock <i>Parramatta LEP Item No. 1654</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Leigh Memorial Uniting Church <i>Parramatta LEP Item No. 1719</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
220 Church Street, Parramatta <i>Identified Potential heritage item</i>	Local	Major As this item would be demolished during establishment of the construction site, Stage 1 would	N/A	N/A

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
		<p>result in the complete removal of heritage fabric, and a major direct impact. The item would not retain its heritage significance and would no longer provide a representative example of its type.</p> <p>The demolition of this item would not be undertaken as part of the Project scope.</p>		
48 Macquarie Street, Parramatta	Local	Major	N/A	N/A
<i>Identified Potential heritage item</i>		<p>As this item would be demolished during establishment of the construction site, Stage 1 would result in the complete removal of heritage fabric, and a major direct impact. The item would not retain its heritage significance and would no longer provide a representative example of its type.</p> <p>The demolition of this item would not be undertaken as part of the Project scope.</p>		
Areas of identified Aboriginal archaeological potential and AHIMS site 45-6-3582	Aboriginal Site	Major	High	N/A
		<p>Stage 1 works for Parramatta Metro Station would include the total removal of any intact former ground surface(s) located within the construction footprint. This</p>		

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
		would also include the removal of AHIMS site 45-6-3582 where within the construction footprint. These impacts would result in total loss of value. The removal of this item would not be undertaken as part of the Project scope.		
Areas of identified non-Aboriginal archaeological potential	Local and State	Major Stage 1 works for Parramatta Metro Station would include the total removal of all areas of non-Aboriginal archaeological potential where located within the construction footprint. This impact would result in total loss of significant archaeological remains where removed through ground disturbing works. The removal of this item would not be undertaken as part of the Project scope.	High	N/A
Clyde				
Wetlands	Local	Minor	N/A	Minor
<i>Parramatta LEP Item No. 11</i>		Stage 1 for the Clyde MSF including ancillary infrastructure and construction activities would require direct impact on the		Changes to the surrounding setting and wider context of the heritage item due to removal of vegetation, civil works, and the establishment

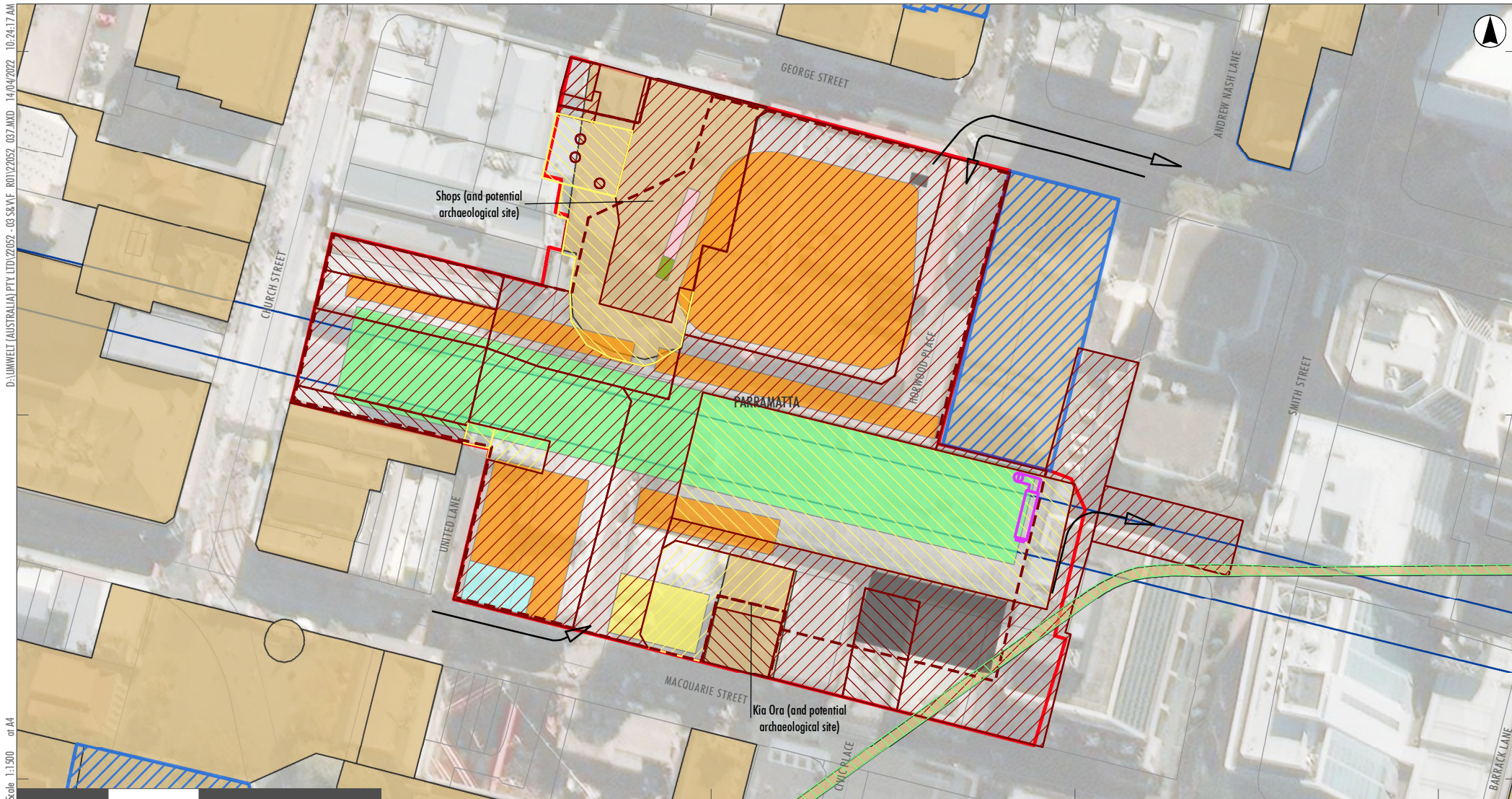
Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
		<p>wetlands, resulting in permanent changes to this heritage item.</p> <p>There would be removal of 0.7 hectares of vegetation within the affected portion of the item. The wetlands heritage item covers a large area of vegetation along Parramatta and its tributaries, and the impact to around 0.7 hectares, would represent a relatively minor direct impact within the overall scale and context of the heritage item.</p> <p>The Project will realign parts of Duck Creek and A'Becketts Creek, which comprises a portion of this heritage listing.</p>		of new structures over A'Beckett's Creek and Duck Creek.
<p>RTA Depot (1B and 5 Unwin Street James Ruse Drive, Rosehill)</p> <p><i>Parramatta LEP Item No. 1576</i></p>	Local	<p>Minor</p> <p>This heritage item is located within the Clyde MSF construction site.</p> <p>Construction of Stage 1 would result in demolition of modern development / additions within the heritage curtilage of this item (which are not considered to have heritage significance), in addition</p>	<p>Minor</p> <p>The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria.</p>	<p>Minor</p> <p>Changes to the existing aesthetic quality and character of the heritage item due to demolition of existing buildings and construction activities.</p>

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
		to all other developments / structures within the construction zone. Components of heritage significance would not be demolished.		
Capral Aluminium (Unwin Street, Rosehill) <i>Parramatta LEP Item No. 1575</i>	Local	Neutral This heritage item is not located within the construction site, therefore there would be no direct impact.	Neutral Vibration is predicted to be below the cosmetic damage screening criteria.	Negligible Changes to the surrounding setting and wider context of the heritage item due to demolition of existing buildings and construction activities.
Rosehill Railway Station Footbridge TAHE S170 Register Item 4801762	Local	Major This item is located within the Clyde MSF construction site. The Project would include the demolition of this item. The demolition of the footbridge would have a major direct heritage impact and would result in a loss of a relatively rare remaining example of the bridge type, and a diminished understanding of the relationship between the railway corridor (now decommissioned since the closure of the Carlingford T6 line), Rosehill Railway Station	N/A	N/A

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
		(to be removed) and its relationship with Rosehill Gardens Racecourse. The removal of the heritage item will also have a cumulative impact on the loss of NSW railway heritage.		
Rosehill Railway Station <i>Identified Potential heritage item</i>	Local	Major The Project would require removal of this heritage item as part of Modification 2. Whilst Rosehill Railway Station is currently unlisted, it meets the criteria for local heritage listing and listing on Transport Asset Holding Entity's s170 register. The impact of the removal of the Rosehill Railway Station would have a major direct impact, with the loss of an 1888 railway station and the first railway platform to be constructed from concrete in NSW. The removal of the train station would have a further cumulative impact on the loss of heritage along the Carlingford Line, which although decommissioned and partially dismantled, still provides understanding and heritage interpretation of the development of the railway network.	N/A	N/A

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
Area of identified Aboriginal archaeological potential	Moderate heritage significance (indicative)	<p>Major</p> <p>Stage 1 works at the Clyde MSF construction site would include ground disturbing works within an area identified as having likely to contain intact natural soil profiles with the potential to hold Aboriginal objects.</p> <p>The impact of the Stage 1 works would result in the total loss of value and complete removal of the area of identified Aboriginal archaeological potential.</p> <p>Archaeological investigations and earthworks in this area will occur prior to the commencement of the Project and will further refine the archaeological potential for this area and include provision of salvage. Provided that these works are completed, the impact of Stage 1 works have been mitigated in accordance with CoA.</p>	N/A	N/A
Sydney Olympic Park				
State Abattoirs	State	Nil	Minor	Nil
<i>State Environmental Planning Policy (State</i>		No impacts to this heritage item will result from the construction activities included in the Project.	The gatehouse and the Administration Block building (to the east of the construction site) is	No indirect impacts to this heritage item will result from the

Heritage Item	Heritage Significance	Direct Impact	Potential for Direct Impact	Indirect Impact
<p><i>Significant Precincts)</i> 2005 Listing No. A</p> <p><i>Sydney Regional Environmental Plan No 24 – Homebush Bay Area Item No. 1</i></p>			<p>predicted to experience vibration levels above the cosmetic damage screening criteria.</p>	<p>construction activities included in the Project</p>



Legend

- | | | | | |
|--|--|---|--------------------------|-------------|
| Construction Boundary | Historical Archaeological Potential High | Construction Site Elements Excavation Box | Parking | Entry/Exit |
| WTP Tunnel Alignment | Moderate | Laydown | Water Treatment Facility | Hoarding |
| Approximate Convict Drain Alignment | Low | Office | Weighbridge | Ventilation |
| Environmentally Sensitive Areas | Nil | | | |
| NSW State Heritage Item | | | | |
| Local Environmental Plan – Heritage Item | | | | |

Image Source: ESRI (2021) Data source: DFSI (2021)

GDA 1994 MGA Zone 56

FIGURE 8
Plan showing Construction Site Elements with the Historical Archaeological Potential at Parramatta Metro Station

7 ENVIRONMENTAL MITIGATION AND MANAGEMENT MEASURES

Measures to manage heritage impacts and reduce the risk of impact to sensitive receivers will be implemented throughout construction of the Project.

7.1 Standard Mitigation and Management Measures

Specific measures and requirements to meet the objectives of this Plan and to address impacts on heritage are outlined Table 12. These measures have been developed in line with the requirements in the EIS. As a minimum, the following will be incorporated at each construction site and documented on the Environmental Controls Map in Attachment 8 of the CEMP, where applicable.

The mitigation and management measures set out below have been formulated taking into account the MCoA and REMMs for the Project and will be implemented in addition to the ARDEM and AHR (Section 5.1 and Section 5.2). Refer to Attachment 1 for the detailed MCoA and REMMs relevant to the mitigation and management of heritage for the duration of the Project. Table 12 below provides a summary of responsibilities for compliance with each of the MCoA relevant to the Project.

Table 12: Responsibility for Compliance with Project MCoAs

Condition of Approval ID	Responsibility
A2	GALC and Sydney Metro
C1	GALC
C5	GALC via Sydney Metro
C6	GALC
C7	Sydney Metro
C9	Sydney Metro
C10	GALC
D13	GALC and Sydney Metro
D14	GALC
D15	GALC where works not undertaken by Early Works contractor
D16	GALC
D17	GALC (White Bay excluded from Scope)
D18	Sydney Metro (completed)
D19	GALC
D20	GALC via Metro
D21	GALC where works not undertaken by Early Works contractor
D22	GALC where works not undertaken by Early Works contractor
D23	Sydney Metro
D24	GALC

Condition of Approval ID	Responsibility
D25	Sydney Metro (completed)
D26	Sydney Metro (Completed)
D27	Sydney Metro (completed)
D28	Sydney Metro
D29	Sydney Metro
D30	Sydney Metro
D31	GALC
D32	Sydney Metro (Completed)
D33	GALC and Sydney Metro
NAH1	GALC where not previously completed by Sydney Metro
NAH2	Sydney Metro (demolition outside of GALC scope)
NAH3	Out of scope for WTP
NAH4	Out of scope for WTP.
NAH5	Sydney Metro
NAH6	GALC where works not undertaken by Early Works contractor
NAH7	Sydney Metro
NAH8	GALC and Sydney Metro
NAH9	Sydney Metro (Completed)
AH1	GALC via Sydney Metro
AH2	GALC where works not undertaken by Early Works contractor
AH3	Sydney Metro
AH4	Section GALC

Table 13: Project wide heritage management and mitigation measures

Item	Mitigation and Management Measure and Project site requirements	Source	Timing	Responsibility
SEA – Senior Environmental Advisor, EA – Environmental Advisor, CM – Construction Manager, SS – Site Supervisor				
1.	<p>All site staff, including subcontractors will attend a site induction which will include information regarding cultural heritage to be provided before the start of construction work. The induction will include details on the location and significance of heritage items in the construction footprint and the processes in place to protect and manage works in the vicinity of heritage items and identified archaeological sites/areas of archaeological potential.</p> <p>The registered Aboriginal parties consulted as part of the project will provide input into the contents of the inductions relating to any Aboriginal cultural values associated with the construction site to ensure the appropriate transmission of any culturally sensitive information.</p>	MCoA C13 and MCoA D19	Prior to construction	EA/SEA
2.	<p>Site activities will be planned in advance to ensure all necessary clearance or approvals have been obtained prior to the commencement of work. This includes noting areas of Aboriginal and non-Aboriginal archaeological potential which require excavation or salvage prior to ground disturbing works, or requirements for monitoring by suitably qualified archaeologist during excavation.</p>	GALC Best Practice	Prior to construction	SEA/SS/CM
3.	<p>All known heritage items within the Project work areas will be identified in the Environmental Control Maps, including associated ‘Heritage No-go Zones’. These ‘Heritage No-go Zones’ will include all heritage listed structures and items within the construction boundary and directly adjacent to the construction boundary.</p> <p>‘Heritage No-go Zones’ in the ECMs will be communicated to all staff during the site induction prior to works commencing. Protective fencing and signage will be established before the start of work (where required). Adequate ‘Heritage No-go Zones’ around all heritage items and sites within the construction site will aim to provide protection from both direct and indirect impacts.</p>	CEMP MCoA D16	Pre-construction Construction	SS/SEA/CM

Item	Mitigation and Management Measure and Project site requirements	Source	Timing	Responsibility
SEA – Senior Environmental Advisor, EA – Environmental Advisor, CM – Construction Manager, SS – Site Supervisor				
4.	Construction activities will not destroy, modify or otherwise physically affect any heritage item, archaeological site or area of archaeological potential not identified in documents referred to in Condition A1 of the Instrument of Approval.	MCoA D13	Pre-construction Construction	SEA/SS/CM
5.	Monitoring for settlement will be undertaken in accordance with MCoA D66	MCoA D19 and MCoA D66	Construction	SEA
6.	Records of the involvement of the heritage specialist will be maintained by GALC, including attendance at site, training provided to the project team and any recommendations or advice provided during the construction program.	CEMF	Pre-construction Construction	SEA/EA
7.	Should additional impacts to heritage items or items of potential heritage significance, that were not considered and approved in the EIS, Amendment and Submission Reports be identified during the course of the Project, the impacts will be considered under the approval process described in the CEMP, Section 5.2, or for further consideration and assessment by DPE.	Best Practice	Pre-construction	SEA

7.2 Environmental Control Maps

ECMs have been prepared for each construction site, which outline the location of protection measures, monitoring requirements, environmental obligations and environmentally sensitive areas (refer to Attachment 8 of the CEMP). It is the practical application of the proposed control measures and an important tool to communicate these to all personnel including subcontractors.

Heritage control measures identified on each ECM will include:

- Location of 'Heritage No-go Zones' and requirements for working within 'Heritage No-go Zones'
- Location of Aboriginal and non-Aboriginal heritage listed items, including those identified in Section 5
- Unexpected heritage finds and human remains procedures
- Stockpiling and storage management.

7.3 Specific Mitigation and Management Measures

The specific control measures to meet the objectives of this Plan and to address impacts to heritage items are set out in the following section. These measures have been developed in line with the requirements in the EIS and the Project MCoAs. As a minimum, the following will be incorporated at each construction site and documented on the Environmental Controls Map in Attachment 8 of the CEMP, where applicable.

7.3.1 Heritage Specialist

Prior to the commencement of any works of Project, GALC will engage a suitably qualified Heritage Specialist as part of their environmental team. This Heritage Specialist will assist with the preparation and implementation of this Plan, as well as having the following role through the duration of the Project:

- Provide advice on appropriate methods and locations for the establishment of protective barriers, 'Heritage No-go Zones' and monitoring equipment for heritage items.
- Provide advice in the event of any unexpected heritage finds being discovered, prior to the recommencement of any works in the area in discussion with the Excavation Director.
- Provide advice on any salvaged elements or fabric from heritage items or archaeological investigations
- Provide advice on any vibration treatments which will require intervention with heritage items or their significant fabric
- Provide advice and undertake inspections of heritage items to ensure appropriate mitigation and protective measures are employed to heritage items as required by this HMP and other plans under the CEFM framework.
- Provide advice on any remediation or repair works to heritage items during the course of the Project
- Prepare any additional assessments as required by this HMP. Note: More than one specialist may be engaged to ensure the appropriate skills in Aboriginal, non-Aboriginal heritage and built heritage are available to the GALC team.

7.4 Aboriginal Cultural Heritage Management

7.4.1 Aboriginal Consultation

Aboriginal stakeholder consultation was carried out during the preparation of the Sydney Metro West Environmental Impact Statement and also the preparation of the ACHAR by Artefact in November 2020. Further consultation with the Registered Aboriginal Parties has been undertaken during the preparation of:

- Sydney Metro West Parramatta Station Construction Site Aboriginal Heritage Report, Final Report Dated October 2021
- Clyde-Sydney Metro Aboriginal Heritage Work Method Statement, Draft Report Dated 30 November 2021.

This Aboriginal community consultation was undertaken as best practice in accordance with the Heritage NSW, Department of Planning and Environment, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010).

A list of the RAPs who have been consulted – and will continue to be consulted, is included in Attachment 4 of this HMP. The Registered Aboriginal Parties (RAPs) will be kept informed about Stage 1 of the Project works. The RAPs will continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of Stage 1 of the Project including updates every six months on the project.

Aboriginal consultation shall be undertaken via an Aboriginal Focus Group, or other consultation forums as appropriate. The Aboriginal Focus Group will be established and facilitated by Sydney Metro in accordance with CoA D20. This or other consultation forums will be used by GALC during the Project to ensure ongoing consultation with the RAPs identified in Attachment 4.

Any changes to the approved impacts of the project as outlined in the MCoA, or archaeological methodology would require the Project RAPs will be consulted following the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010). Any such consultation actions will be undertaken with all RAPs listed in Attachment 4 of this HMP.

The archaeological investigations at Parramatta Metro Station should include the participation of RAP representatives with the suitable relevant experience in collaboration with the Project archaeologist.

7.4.2 Protecting Aboriginal Heritage

All reasonable steps will be undertaken to ensure no impacts to Aboriginal heritage occur beyond what has been approved in the EIS and Technical Paper 4.

In areas where Aboriginal archaeological potential has been identified – being Clyde Maintenance and Stabling Facility, and Parramatta Metro Station construction site, no ground disturbing works will be undertaken prior to receiving written clearance from the Aboriginal archaeological Excavation Director and Sydney Metro confirming that all archaeological investigations have been completed in an area and that construction works have been commenced.

All staff and contractors will be provided with a heritage induction outlining the project requirements for protecting Aboriginal heritage and the approved areas of impact. This induction will also include the Unexpected Finds protocol in the unlikely event that Aboriginal archaeology or objects are encountered following completion of the archaeological investigations.

Should works outside of the approved construction impacts be identified during detailed design or construction, no works would commence until confirmation with Sydney Metro and DPE on the appropriate course of action, or until additional approval has been received for any additional construction impacts to Aboriginal heritage.

7.5 Parramatta Metro Station - Archaeological Investigation

7.5.1 Aboriginal Archaeology

The revised ACHAR prepared as part of the EIS identified areas of Aboriginal archaeological potential and the need for archaeological investigations at Parramatta Metro Station prior to the commencement of construction impacts. The AHR 2021 provides a detailed assessment of the archaeological potential for the site and includes the methodology for archaeological investigations. This report is included in Attachment 8 of this HMP.

In compliance with MCoA D21, the archaeological Investigations at Paramatta Metro Station site will be undertaken in areas of archaeological potential that will be subject to construction impacts. The archaeological investigations were commenced within part of the site during the Early Works (outside the scope of the Project).

GALC will undertake archaeological investigations in areas of construction sites which will not receive archaeological clearance as part of the Early Works. This is understood to be Areas 2-4 (Figure 9), which will be confirmed at the completion of the Early Works.

The archaeological investigations will be undertaken in accordance with the AHR 2021, which outlines the Aboriginal test excavation methodology and provides a standard Salvage methodology which will be updated following the results of the testing phase. The full methodology can be found in Section 5.2 of the AHR 2021.

7.5.1.1 Excavation Director

All Aboriginal archaeological investigations will be undertaken in accordance with the methodology contained in the AHR 2021, which was prepared by the nominated Aboriginal archaeological Excavation Director. The nominated Aboriginal archaeological Excavation Director for the Project is Dr Tim Owen.

7.5.1.2 Sedimentology Testing Works

Sedimentology investigations at the Parramatta Metro Station construction site will be undertaken in conjunction with Aboriginal heritage management works. This will be undertaken during early works geotechnical investigations, as well as following the removal of fills within a zone and the completion of any historical archaeology investigations. The information gathered during this testing stage will be used to develop a revised archaeological model for the project and will be used to inform the archaeological excavation methodology.

A hand auger appropriate to the sampling requirements outlined in the AHR 2021 will be used during the testing, and auguring will be undertaken to a depth that provides certainty that no buried soil horizons are present at that location.

The full extent of sedimentary testing will be confirmed during geotechnical investigations and is dependent on the nature and quality of data gathered.

7.5.1.3 Archaeological Testing Works

The need for test excavation at Parramatta Metro Station construction site is triggered by identified areas of potential intact Aboriginal archaeological deposits. This is defined by the AHR 2021 as areas of the construction site with remnant A₁ and/or A₂ soil landscapes above the basal clay.

The location of these areas will be confirmed following the results of sedimentology testing, and the geomorphologist/sedimentologist and Aboriginal archaeological Excavation Director will determine the extent of intact and/or partially truncated soils which will be subject to archaeological hand test excavation.

Areas where natural soil provides have been removed completely or disturbed do not require Aboriginal archaeological testing. All archaeological testing works will be undertaken in accordance with the methodology outlined in the AHR 2021.

Areas 1a and 1b of the Parramatta Metro Station site will be subject to test excavations as part of the Early Works package and outside the scope of this HMP.

Areas 2-4 will be included in the archaeological testing works in accordance with the methodology in the AHR 2021 and in collaboration with the non-Aboriginal archaeological investigations also required within these areas of the site. Section 7.5.2 outlines the program of archaeological works, including Aboriginal archaeological testing.

7.5.1.4 Archaeological Salvage Excavation Works

In accordance with MCoA D22, the requirements for archaeological salvage for Aboriginal archaeology would be determined following analysis of the test excavation results by the Excavation Director, in discussion with the project RAPs. The need for salvage will depend on the nature of natural soil profiles and sedimentology encountered (notably the depth and ability to yield archaeological deposits) and the type of archaeology identified during hand test excavation (e.g. Aboriginal objects, features such as cooking pits). A standard methodology for salvage excavation is included in Section 5.2.5 of the AHR 2021, which will be revised by the Excavation Director following the results of the test excavation works.

Excavation in each area requiring salvage will continue to the margins of the archaeological deposit (for ERS Phase 1 or 3 objects), and/or until artefact densities fall below 10/m² (for ERS phase 2 and 2B deposits).

7.5.2 Non-Aboriginal Archaeology (Historical)

7.5.2.1 Excavation Director

In accordance with MCoA D27, before commencement of archaeological excavation, a suitably qualified Excavation Director has been nominated, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), to oversee and advise on matters associated with non-Aboriginal archaeology for the approval of the Planning Secretary, in consultation with Heritage NSW.

The nominated Primary Excavation Director non-Aboriginal archaeology is Abi Cryerhall and Secondary Excavation Director is Sophie Jennings. Approval from the Department of Industry and Planning of the nominated excavation directors was provided to Sydney Metro on 8 September 2021.

The Excavation Director will plan and oversee archaeological investigation, advise on archaeological issues and detail the nature and extent of oversight required during the archaeological excavations to be undertaken in accordance with the ARDEM 2021. A copy of the ARDEM 2021 is included in Attachment 7 of this HMP.

The Excavation Director will also provide advice regarding potential impacts to archaeological remains during the installation of site protection and monitoring equipment in areas of historical archaeological potential identified in the EIS, as required by MCoA14.

In accordance with Sydney Metro Unexpected Heritage Finds protocol, the Excavation Director (or their delegate) would inspect any potential archaeological remains. The Excavation Director would then determine the appropriate management for any unexpected find, to be provided to GALC and Sydney Metro in writing.

7.5.2.2 Archaeological Excavation

Before the commencement of any work at Parramatta Metro Station construction site, archaeological test and salvage excavations will be undertaken. This will be done in accordance with the ARDEM 2021.

The documents have been prepared in accordance with Heritage Council of NSW guidelines and with reference to the detailed design of Stage 1 construction of the CSSI to guide archaeological excavation. The revised Archaeological Research Design and Excavation Methodology(s) was prepared by the approved Excavation Director(s) and includes:

- a) site specific research for the Parramatta metro station construction site which is conducted by a professional historian to clearly articulate the historical development of the allotments to assist with the reassessment of potential and significance;
- b) comparative analysis from archaeological investigations in Parramatta (including theses, publications and grey literature reports);
- c) preparation of research questions based on the additional site-specific research required by this condition, and relevant research agendas from previously excavated early historical occupation in Parramatta including recovered artefact assemblages; and
- d) a reconsideration of archaeological methods to manage the sites based on this additional assessment.

The revised ARDEM has been prepared by the Excavation Director in consultation with Heritage NSW and submitted to the Planning Secretary for approval. The ARDEM was approved by DPE in November 2021.

The revised Archaeological Research Design and Excavation Methodology(s) will be implemented throughout the archaeological excavation programs. GALC will confirm the requirements of this document have been completed prior to the commencement of any construction works.

7.5.2.3 Archaeological Fieldwork Program

The archaeological fieldwork program outlined in the ARDEM 2021 includes a combination of test excavation, monitoring/recording of minor and low impact works as well as large scale open area salvage excavation and localised (or small scale) salvage excavations. This program, to be delivered in stages, has been developed by the Excavation Directors in response to the project construction program and as access to undertake the investigations becomes available. Figure 9 shows the staging of archaeological investigations overlaying the areas of historical archaeological potential identified in the ARDEM 2021.

The archaeological investigations and excavations in Area 1a and 1b will be completed during the Early Works at Parramatta and will be completed prior to the commencement of GALC Works.

Table 14 provides a general methodology for different construction activities to be undertaken as part of the Project.

The archaeological fieldwork program to be implemented by GALC is outlined in Table 15. This may be divided into further stages by the Excavation Director in response to access and construction program.

Table 14 Construction Activity and associated archaeological fieldwork methodology for Parramatta construction site (ARDEM 2021)

Construction Activity	Fieldwork Methodology
Service investigations within previously disturbed areas (i.e. existing trench alignments).	<ul style="list-style-type: none"> • Unexpected Finds Protocol (see Attachment 4)
Removal of services/substations/trees	<ul style="list-style-type: none"> • Monitoring where excavation outside previously disturbed areas is anticipated
Geotechnical and contamination testing boreholes/test pits	<ul style="list-style-type: none"> • Relocate away from convict hut locations, and areas of high or known archaeology
Demolition to slab/current ground surfaces	<ul style="list-style-type: none"> • Unexpected Finds Protocol (see Attachment 4)
Excavation for new service installation (temporary, relocations and diversions).	<ul style="list-style-type: none"> • Test excavations • Salvage excavation or monitoring (depending on testing results) • Monitoring if minor or shallow excavations not expected to impact archaeological layers
Removal of slab/ground surface/inground structures/footings/services.	<ul style="list-style-type: none"> • Monitoring • Triggers archaeological investigation requirements
Excavation below slab/ground surface including: <ul style="list-style-type: none"> • Road and pedestrian walkways • (temporary, haul, relocations new) • New surfaces for site facilities, laydown areas, turning circles etc • Remediation/contamination removal • Footings/penetrations for site facilities, structures, fencing • Sediment ponds, slurry pits, wheel wash areas, drainage, services etc • Piling and associated works 	<ul style="list-style-type: none"> • Test excavation • Salvage excavation • Monitoring if localised or shallow excavations are proposed in areas of potential and are not expected to impact significant archaeology • Review for opportunities for conservation/relocation/interpretation of state significance archaeology and Convict Drain prior to salvage excavations

Construction Activity	Fieldwork Methodology
Station box excavation	<ul style="list-style-type: none">• Test excavation.• Salvage excavation.

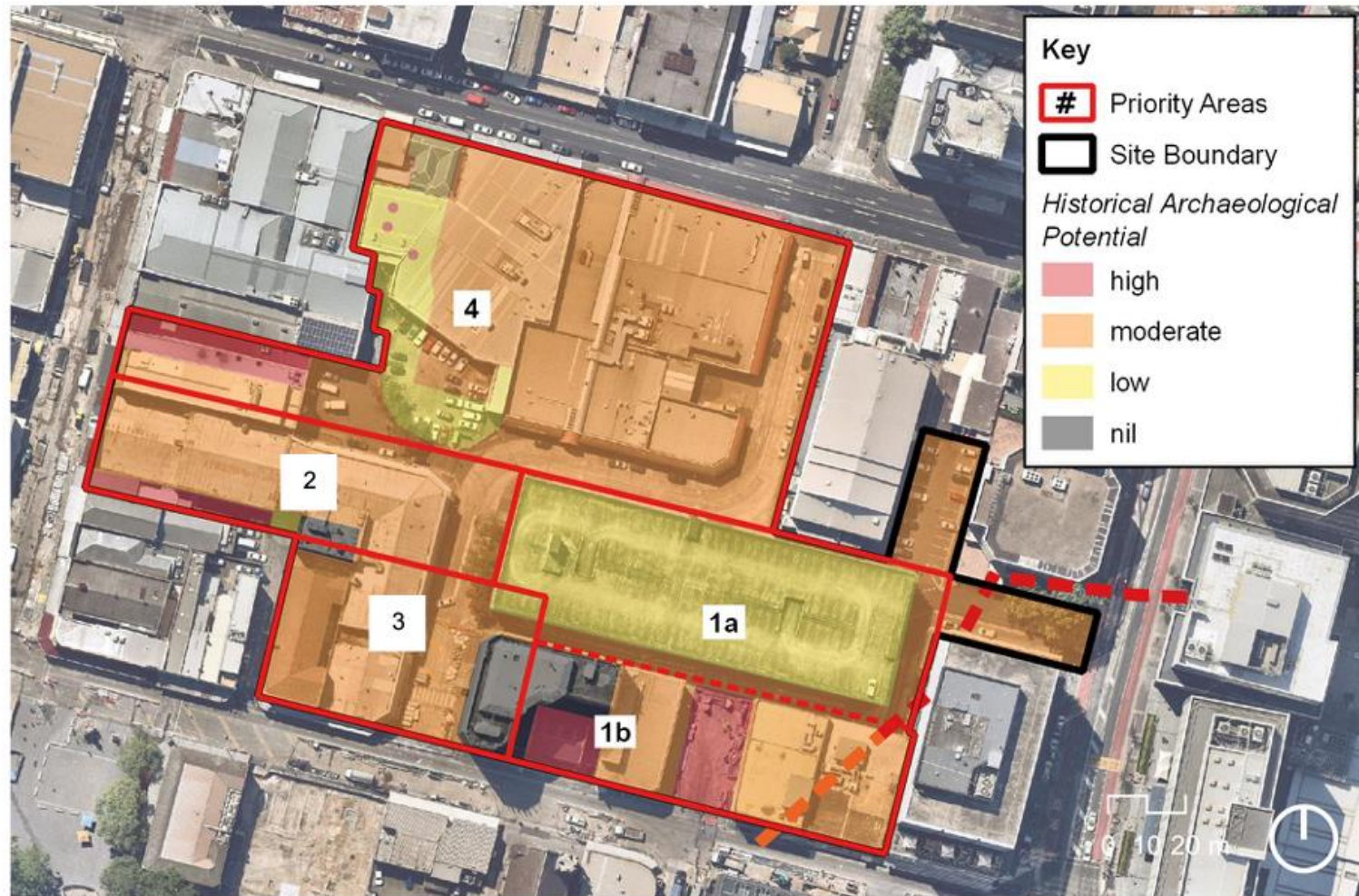


Figure 9: Parramatta construction site priority areas for the historical archaeological fieldwork program. The approximate location of the Convict Drain is indicated by the thick dashed red line (Source: GML ARDEM 2021)

Table 15: Historical Archaeology Program & Methodology (ARDEM 2021)

Stage	Archaeological Program
<p>Area 2</p> <ul style="list-style-type: none"> Station box excavation footprint and associated works 	<ul style="list-style-type: none"> Test excavation for historical and Aboriginal archaeology Expansion to open area salvage excavation (historical archaeology) of entire area and for Aboriginal archaeology where required Includes salvage excavation to Church Street frontage (to capture full extent of significant archaeology expected in this area beyond the western end of the station box). May also expand north to include all Church Street Properties.
<p>Area 3</p> <ul style="list-style-type: none"> Site amenities, parking and road 	<ul style="list-style-type: none"> Localised archaeological excavation/monitoring where service relocations and localised/minor penetrations for temporary aboveground structures are required prior to open area salvage excavations Test excavation for historical and Aboriginal archaeology. Expansion to open area salvage excavation (historical archaeology) and for Aboriginal archaeology where required, May include multiple smaller scale open-area salvage excavations as required by the construction program Monitoring of bulk excavations in area of nil potential to confirm assessment
<p>Area 4</p> <ul style="list-style-type: none"> Temporary road, pedestrian walkway, workshop, plant storage, parking and turning area 	<ul style="list-style-type: none"> Localised archaeological excavation/monitoring where service relocations and localised/minor penetrations for temporary above-ground structures are required prior to open-area salvage excavations. Test excavations for historical and Aboriginal archaeology, followed by review for conservation, interpretation or opportunities where required. Expansion to open-area salvage excavations (historical archaeology) and for Aboriginal archaeology where required. May include multiple smaller-scale open area salvage excavations as required by the construction program and access requirements, Monitoring bulk excavations in areas of nil potential to confirm assessment.

7.5.2.4 Archaeological Monitoring

Construction activities identified above for archaeological monitoring will include the supervision of the works by an archaeologist. The works which meet the criteria for monitoring include minor or localised construction related ground disturbance or excavation works within an area of archaeological potential.

If during the course of these works, the archaeologist identifies archaeological deposits or features, further archaeological investigations, such as test or salvage excavation must be completed in

accordance with the ARDEM 2021 prior to the recommencement of construction impact. Section 6.6 of the ARDEM 2021 provides further instruction.

7.5.2.5 Testing

In accordance with MCoA D25, the ARDEM 2021 outlines the provisions for early physical investigation of areas of impact identified as likely to contain State significant archaeology or that will be impacted by the Project construction activities. GALC will manage the archaeological testing of Areas 2,3 and 4 on the Parramatta Metro Station construction site. Figure 9 shows the locations of the areas to be included in GALCs management.

The test excavations will be undertaken by the nominated Excavation Directors for the project and will be in accordance with the methodology outlined in Section 6.3 of the ARDEM 2021. This includes the location and number of small test pits and trenches which will be used to determine the nature and extent of archaeological deposits and features present on site prior to construction impacts.

7.5.2.6 Salvage

The results of the archaeological testing program will determine where archaeological salvage excavations will be required. This will generally occur within the station box excavation areas, with potential expansion to salvage excavation in other areas. This would be determined by the Excavation director where it is necessary to salvage locally significant archaeology, reveal areas with the potential for State significant archaeology below later phases of archaeology, as well as to facilitate the Aboriginal archaeological excavation program. The excavation director will determine and confirm the necessary salvage approach and whether other steps, such as conservation and/or interpretation review are required based on the results of excavation.

7.5.2.7 Archaeological Clearance

A written clearance confirmation (letter or memo format) must be provided by the Primary Excavation Director(s) to GALC once archaeological management has been completed. This will include whether any further management requirements for Aboriginal or non-Aboriginal archaeology (i.e. salvage excavation or monitoring) is required prior to the commencement of ground disturbing works.

Archaeological clearance can be provided for a particular zone within the construction site, and the written confirmation should include clear delineation of the area to which the clearance applies, including any buffer zones or other management requirement to ensure damage does not occur to areas not included in the clearance.

The archaeological clearance will be signed off by Sydney Metro prior to the commencement of any construction activities in the area. This approval by Sydney Metro will only be valid once received in writing.

All records of archaeological clearance and approval by Sydney Metro will be kept by the ER and relevant environmental managers on the project.

GALC will receive archaeological clearance for Area 1a and 1b prior to commencement of the Project at the Parramatta Metro Station construction site.

7.5.2.8 Archaeological Reporting

MCoA D28 and D29 require an Excavation Report and an Aboriginal Cultural Heritage Excavation Report to be prepared following the completion of all Aboriginal and non-Aboriginal archaeological excavations.

The Archaeological Excavation Report will be prepared by the Excavation Director and be provided to the Heritage NSW within two years of the completion of archaeological excavations specified in the archaeological research design(s).

Sydney Metro will be responsible for the engagement and submission of the Archaeological Excavation Report in accordance with MCoA D29. However GALC will provide any information within their control to Sydney Metro to ensure compliance with this MCoA.

7.5.2.9 State Significant Archaeology

In accordance with MCoA D30, in the event works result in salvage of state significant historical archaeology associated with early convict occupation at the Parramatta metro station construction site for which retention and future conservation is not possible, the key findings of the archaeological investigations will be documented to explain their significance within the context of Parramatta and NSW. This will be undertaken no later than two years after the completion of the archaeological excavations and will be provided for the curation, display and public access of artefacts, site records and final reports. Provision of this information may involve partnerships with museums, local heritage centres and/or universities.

7.5.2.10 Parramatta Convict Drain

In accordance with MCoA D15, Sydney Metro have confirmed the location of the Parramatta Convict Drain during the archaeological investigations in the Early Works program, and it is located outside the area of direct impact for the Project. The section of the Convict Drain within the Parramatta Metro Station construction site will be left exposed in situ at the time of GALC taking possession of the site.

GALC will install protection measures prior to backfilling the length of exposed Convict Drain, to prevent any direct impacts occurring to the archaeological remains. This will be done in consultation with the Excavation Director for the Project, to ensure appropriate materials and methods are used to ensure the ongoing conservation of the Convict Drain in situ.

In accordance with MCoA D46, vibration testing and monitoring will be undertaken when vibration generating construction activities have the potential to impact on the Convict Drain. All management of vibration impacts, will be undertaken in accordance with the Noise and Vibration Management Sub-plan prepared by GALC for the Project. Section 7.6.3 below provides further details on the requirements for managing vibration impacts on heritage items associated with the Project.

7.6 Non-Aboriginal Heritage Management

7.6.1 Archival Recording

Archival recording and reporting will be undertaken for the impacted heritage items and identified potential heritage items identified in the EIS, including the documents identified in MCoA A1.

The archival recording and reporting will be carried out in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006).

All photographic archival recording will be undertaken prior to the commencement of works that have potential to disturb / impact on the items nominated for recording. The photographic archival recording will include:

- A brief report detailing background information and methodology in addition to the archival record
- Detailed photographs of site/item – this will include contextual photographs showing site/item and remains, and relevant relationships to other sites/items and surroundings
- Photographic catalogue sheets (photographic record sheets)
- Measured plan of the site/item
- Photographic plans (referenced to the photographic catalogue sheets) particular to each site showing the location of all the photographic images.

The heritage items to be recorded archivally include:

- Shops (and potential archaeological site) (Parramatta LEP Item No. I703) (Completed by Sydney Metro)
- Kia Ora (and potential archaeological site) (Parramatta LEP Item No. I716) (Completed by Sydney Metro)
- RTA Depot (Parramatta LEP Item No. I576) (Completed by Sydney Metro)
- Rosehill Railway Station Footbridge (TAHE S170 item No. 4801762)
- Rosehill Railway Station (identified potential heritage item)
- 220 Church Street, Parramatta (identified potential heritage item)
- 48 Macquarie Street, Parramatta (identified potential heritage item)

Archival recordings will also be required where additional impacts to heritage items and identified potential heritage items (including demolition or modification) are identified during the course of the Project, or modification to the Project scope.

Prior to the commencement of works, Sydney Metro, on behalf of GALC will submit the reports to DPE, the Heritage Council and City of Parramatta.

7.6.2 Salvage of Significant Fabric

A salvage methodology report will be prepared for the salvage of any significant fabric associated with heritage items or identified potential heritage items to be demolished as part of the Project. This includes any items that may be identified for demolition during the course of the Project.

All salvage methodology reports required for the project will be prepared by the Heritage Specialist, and technical specialists as required (i.e. structural engineer) and will be completed in consultation with Sydney Metro.

Any salvage will be undertaken by suitably qualified construction contractors to ensure no damage to salvaged material.

All salvaged materials will be stored clearly labelled in a secure location to be determined in consultation with Sydney Metro.

7.6.2.1 Rosehill Railway Station Footbridge

A Heritage Salvage Methodology report has been prepared by GALC for the relocation of the Rosehill Railway Station Footbridge in accordance with MCoA D18.1. This identifies the significant fabric to be retained, as well as the methodology for salvage of the fabric, developed in collaboration with GALC engineering team members.

GALC, in consultation with Sydney Metro and the City of Parramatta Council, will investigate opportunities to relocate the footbridge, in accordance with MCoA D18.1.

In accordance with MCoA18.2, when a suitable location for the footbridge is identified, a Heritage Asset Action Plan, including an updated statement of significance, will be prepared to reflect the new setting of the heritage item. This will be undertaken within 12 months of its relocation.

In the event that a suitable new location cannot be identified and/or agreed with the City of Parramatta Council, evidence of consultation and consideration of alternative sites will be provided in accordance with MCoA D18.1 prior to the dismantle and removal of the footbridge from the Clyde MSF site.

7.6.3 Noise and Vibration Management

Indirect impacts, including vibration impacts, not approved under the MCoA will be avoided.

A Noise and Vibration Management Sub-plan has been prepared by GALC. Vibration monitoring will be conducted in accordance with the sub-plan where impacts (identified or potential) have been identified.

Safe working distances have been established for the Project in relation to vibration impacts to sensitive receivers, which is outlined in Table 16.

Table 16: Recommended Minimum working Distances from Vibration Intensive Equipment. (NVMP 2022)

Plant Item	Rating/Description	Minimum Distance		
		Cosmetic Damage Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	Human Response (AVTG)
Vibratory Roller	<50 kN (1–2 tonne)	5 m	11 m	15 m to 20 m
	<100 kN (2–4 tonne)	6 m	13 m	20 m
	<200 kN (4–6 tonne)	12 m	25 m	40 m
	<300 kN (7–13 tonne)	15 m	31 m	100 m
	>300 kN (13–18 tonne)	20 m	40 m	100 m
	>300 kN (>18 tonne)	25 m	50 m	100 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	15 m	23 m
Large Hydraulic Hammer	1,600 kg (18 to 34 t excavator)	22 m	44 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	5 m to 40 m	20 m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	4 m
Jackhammer	Hand held	1 m (nominal)	3 m	2 m

With relation to heritage items, vibrating testing will be conducted during vibration generating activities that have the potential to impact on these items to identify minimum working distances to prevent cosmetic damage. This includes the Parramatta Convict Drain, part of which is located below ground level within the Parramatta Metro Station construction site.

In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, GALC will review the construction methodology and, if necessary, implement additional mitigation measures at the advice of the Project Engineer, Noise and Vibration Specialist and Heritage Specialist. This will include a more detailed assessment which specifically considers the heritage values of the structure, in accordance with NV16. This assessment will be prepared in consultation with the Heritage Specialist to ensure any identified sensitive heritage fabric will be adequately monitored and managed.

In accordance with the MCoA (D47 and D14), before installing protective site boundary hoarding or equipment used for vibration and noise monitoring at any Heritage item identified in the documents listed in Condition A1 of the Instrument of Approval, the advice of the Heritage Specialist will be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item. The installation will also consider and avoid impacts to potential non-Aboriginal archaeology and seek advice from the approved Excavation Director(s) for the Project.

If a heritage item is found to be structurally unsound (following inspection by a qualified structural engineer) a more conservative cosmetic damage criterion of 2.5mm/s peak component particle velocity (from DIN4150) will be applied.

7.6.4 Unexpected Heritage Finds

The Sydney Metro Unexpected Heritage Finds Procedure will be implemented for the duration of the construction works. The procedure will be outlined in the site induction package for all Project construction sites, including outlining responsibilities and reporting requirements.

An unexpected find includes an object, place or archaeological remains that is discovered during the carrying out of the CSSI that may be a heritage item or archaeological remains of local or State significance, but was not identified in the EIS (Chapter 12 and 13, Technical Papers 3 and 4)

A summary of the procedure for unexpected heritage finds should they be encountered is outlined below

1. Stop works, protect the item ('Heritage No-go Zone') and notify the project manager.
Note – if the item is obviously human remains, the local police must be notified by phone immediately and the Sydney Metro Exhumation Management Procedure may be implemented.
2. Notify Sydney Metro Environment Manager
3. Contact the nominated Excavation Director, Archaeologist, or Heritage Specialist.
4. Complete a preliminary recording of the item including photographs to provide to the Excavation Director
5. Arrange access for the Excavation Director or their nominated archaeologist to undertake an inspection of the item as soon as possible
6. Receive advice from Excavation Director and Sydney Metro for next steps.
7. Formally notify the regulator by letter if required
8. Implement advice
9. Receive archaeological clearance from Excavation Director.
10. Resume works upon approval from Sydney Metro Environmental Manager and Excavation Director

The detailed procedure to be implemented is included in Attachment 2 of this document.

Notification to Heritage NSW under s146 of the Heritage Act 1977 will be undertaken for any relics encountered as an unexpected heritage find. All notifications to Heritage NSW will be undertaken by Sydney Metro.

Notification under s89a of the National Parks and Wildlife Act 1974 will be required if a person becomes aware of an Aboriginal object.

The Sydney Metro Environmental Team will be notified of any and all unexpected heritage finds, including where further mitigation measures or management was deemed unnecessary by the Excavation Director

7.6.4.1 Human Remains

In the event that a potential burial site or potential human skeletal material is exposed during construction, works will stop immediately and the project manager and local police to be informed and the Sydney Metro Exhumation Management Plan will be implemented.

This management plan is included in Attachment 5 of this HMP.

7.6.5 Condition Surveys

GALC will undertake building condition surveys including elements of Roxy Theatre, the RTA Depot façade fronting Unwin Street and the former State Abattoirs in accordance with MCoA

C13(d), D60 and D61, in addition to any other heritage buildings identified as being at risk of vibration or settlement induced damage. In accordance with REMM NV17, condition surveys of the heritage buildings will take into consideration the heritage values of the structure in consultation with the Heritage Specialist and a structural engineer.

Copies of the Pre-construction Condition Survey Reports will be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, as well as City of Parramatta Council and SOPA, where applicable, at least one month prior to commencement of construction.

Within three months of the completion of construction, final site inspections will be conducted (unless otherwise agreed by the Planning Secretary) in accordance with MCoA C13(d). Where required, GALC will rectify any property damage caused directly or indirectly by the Project works within six months of completion of the works. Copies of the Post-construction Condition Survey Reports will be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, as well as City of Parramatta Council and SOPA, where applicable.

Where damage is identified and confirmed to be the result of project construction, the GALC would consult with a Heritage Specialist to ensure the rectification works are consistent with the relevant management documentation for that item in accordance with MCoA C13(e).

7.6.6 Periodic Monitoring

Regular inspection will be undertaken by the Heritage Specialist to ensure heritage items are protected and undamaged during the construction works. This will be in conjunction with the specialist inspections undertaken by the structural engineer to inspect the condition of the buildings during high risk works such as excavation and other high vibration scope.

A schedule of inspections of no less than once a month will be prepared by the structural engineer to ensure that the management and mitigation measures implemented for heritage items are meeting the project requirements.

This schedule will be confirmed by the engineer prior to the commencement of any construction work for the Project.

The ER shall record and compile all visits to site by Heritage Specialists, Engineer as well as the project Archaeologists when responding to unexpected heritage finds.

If requested, copies of the monitoring reports will be distributed to the relevant owners of the items surveyed in the vicinity of the proposed work, as well as City of Parramatta Council and SOPA.

7.6.7 Settlement

The potential for settlement as a result of the Project has been identified in the EIS and is addressed in REMM GW05. Compliance with this REMM is described in the Groundwater Management Plan which includes measures and controls for understanding and managing settlement. This would include the development of a detailed geotechnical and hydrological model that would be progressively updated during design and construction. The model would be developed in accordance with REMM GW05, which would include assessment of the potential for damage to structures, services, basements and other sub-surface elements through settlement or strain.

If building damage risk is rated as moderate or higher (as per the CIRIA 1996 risk-based criteria), a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage.

7.6.8 Protective Fencing and Heritage No-go Zones

Protective fencing or hoarding will be established around all heritage buildings or items within and in proximity to the construction sites of the Project.

In addition to protective fencing, 'Heritage No-go Zones' will be established to protect heritage items within the construction boundary for the Project, as well as protective fencing to prevent incidental impacts or damage to heritage items.

'Heritage No-go Zones' are areas where entry and any works are prohibited within the zone. These will be established around any buildings or items of heritage significance within the construction boundary, or immediately adjacent to the construction boundary which are not approved for any impacts as part of the Project.

These 'Heritage No-go Zones' will be identified following a site inspection for heritage items within, or adjacent to, each construction site for the Project. The extent of each 'Heritage No-go Zone' will be identified by the Heritage Specialist and marked out by the Environmental Advisor. Typical measures to mark out the 'Heritage No-go Zone' will include:

- Use of temporary fencing
- Flag tape, para-webbing, or rope.

'Heritage No-go Zones' will be communicated to all construction site staff (including equipment operators) through site inductions, toolbox talks and targeted training prior to works taking place in the vicinity.

In the event access into a 'Heritage No-go Zone' is required, a Permit to Enter 'No-Go Zone' (GA-FRM-HSE-151) will be acquired (refer to Attachment 9). This Permit aims to identify and justify the need to enter, the potential impact as a result and the need for additional consultation or approvals required.

7.6.9 Incidental and Additional Impacts to Heritage Items

No works will be undertaken to the significant fabric of heritage items outside of the approved construction impacts.

Should works outside the scope of the approved construction impacts be required, GALC will undertake additional assessment of these works and confirm if any additional heritage impacts would be required beyond that of the existing project approvals. This would be undertaken in consultation with the asset owner of the heritage item. The additional assessment process would include assessment of impacts to any potential heritage items not previously identified, prepared by the Heritage Specialist for the Project.

Protective measures including hoarding, barriers and 'Heritage No-go Zones' will be established prior to the commencement of construction works to ensure adequate protection to heritage items is provided from incidental damage occurring during construction activities.

If any heritage item is damaged, all work in the area must cease immediately and will not recommence until advice from the Heritage Specialist and structural engineer is obtained and approval from the ER to proceed is provided in writing. GALC will notify Sydney Metro of any incidents and remediation measures to be undertaken prior to commencement of any remediation

works beyond emergency stabilisation or safety works. Sydney Metro will provide approval of any remediation measures to be undertaken by GALC.

Each incident will include a review of the event to determine the cause and prevent any future occurrence (where possible). This may include specific heritage awareness training or additional training as identified by the review of the event by the ER and Heritage Specialist.

The Sydney Metro Environmental Team will be notified of any incidents related to heritage items immediately.

Any heritage items which are damaged or sustain peripheral impact due to the constructions works will be made good by the conclusion of the Project construction works. This will be undertaken in consultation with a structural engineer and Heritage Specialist to ensure appropriate repairs are undertaken in accordance with the best practice principles of The Burra Charter.

Make good works will use the Pre-construction Condition Survey Reports (MCoA D60) to ensure any works to heritage items are consistent with their condition prior to commencement of the Project works.

All make good works will be undertaken in accordance with the MCoA for the Project, including MCoA D62 and D64.

Any changes to State significant heritage items as a result of incidental damage will include a photographic archival recording identifying the changes to the significant fabric, layout or setting of the heritage item. This archival recording and reporting must be carried out in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006), and will include:

- A brief report detailing background information and methodology in addition to the archival record
- Detailed photographs of site/item – this will include contextual photographs showing site/item and remains, areas of change resulting from the Project works, and relevant relationships to other sites/items and surroundings
- Photographic catalogue sheets (photographic record sheets)
- Measured plan of the site/item
- Photographic plans (referenced to the photographic catalogue sheets) particular to each site showing the location of all the photographic images.

7.6.10 Heritage Interpretation

A Heritage Interpretation Plan is being prepared by Sydney Metro in accordance with the Sydney Metro West Heritage Interpretation Strategy, which will include the results of the archaeological investigations carried out during the Project. GALC will ensure the required information within their control is provided to Sydney Metro for inclusion in the Heritage Interpretation Plan.

7.6.11 SHR Listing Update

Any changes to an item listed on the SHR that a resulting from the Project works will be included in an update to the listing detail for the heritage item. GALC would provide any updates to Sydney Metro for submission to Heritage NSW.

8 COMPLIANCE MANAGEMENT

8.1 Roles and Responsibilities

The GALC Project Team’s organisational structure and overall roles and responsibilities are outlined in Section 7 of the CEMP. Specific responsibilities for the management of heritage is identified in Table 17.

Table 17: Roles and responsibilities

Role	Responsibilities
Environmental Manager	<ul style="list-style-type: none"> Develop and implement the HMP Oversee all required activities outlined in Section 7.0 and in accordance with this sub-plan Oversee compliance tracking and reporting Oversee the keeping of all environmental records Engage suitably qualified consultants to support implementation of this sub-plan In consultation with the Project Director and Site Supervisor, oversee the investigation and reporting of environmental incidents Regularly engage with the key stakeholders and other interface contractors to achieve environmental alignment. Management of system documents and for auditing site activities against this procedure as required by the PM.
Stakeholder and Community Engagement Manager	<ul style="list-style-type: none"> Manages key stakeholder relationships, including in relation to any air quality impacts throughout construction Provision of strategic advice to the leadership team Identify and mitigate reputational risks, including any relating to heritage impacts Accountable for crisis and incident communications
Senior Environmental Advisor	<ul style="list-style-type: none"> Complete inspections and monitoring, particularly of ‘Heritage No-go Zones’ and site clearing limits (refer to Section 8.3) Complete reporting (refer to Section 8.3) Prepare ECMs to outline the controls in this sub-plan relevant to each work activity Respond to environmental incidents and non-conformances Respond to inquiries raised by the ER or Sydney Metro representatives Attend inspections with the ER, Sydney Metro, or other stakeholders
Environmental Advisor	<ul style="list-style-type: none"> Delivery of toolbox / prestart presentation (or other specific training) to inform work crews of the controls documented in the ECMs Install and maintain environmental controls in accordance with ESCPs and ECMs, including clear delineation of site boundaries Attend inspections with the ER, Sydney Metro, or other stakeholders

Role	Responsibilities
	<ul style="list-style-type: none"> ● Implement corrective actions raised during environmental inspections in agreed timeframes ● Notify the Environmental Representative any observed impacts on heritage.
Construction Manager	<ul style="list-style-type: none"> ● Ensures compliance with this HMP, procedures and ECMs ● Work collaboratively with environment teams to ensure the mitigation and management measures in this HMP are integrated into construction works ● Ensure that heritage impacts are always considered in forward planning and scheduling
Site Supervisor	<ul style="list-style-type: none"> ● Install and maintain environmental controls in accordance with ECMs, including clear delineation of site boundaries ● Attend inspections with the Environmental Representative, Sydney Metro / ER, or other stakeholders ● Implement corrective actions raised during environmental inspections in agreed timeframes ● Notify the Environmental Representative of any observed impacts on Aboriginal or non-Aboriginal heritage.
Excavation Director	<ul style="list-style-type: none"> ● Oversee and advise on matters associated with non-Aboriginal archaeology for the approval of the Planning Secretary ● Consult with Heritage NSW regarding management measures for archaeology excavations ● Oversee excavation ● Advise on archaeological issues ● Advise on the duration and extent of oversight required during archaeological excavations.
Excavation Director (Aboriginal Heritage)	<ul style="list-style-type: none"> ● Oversee and advise on matters associated with Aboriginal archaeology for the approval of the Planning Secretary ● Oversee excavation ● Advise on archaeological issues ● Advise on the duration and extent of oversight required during archaeological excavations. ● Provide specialist heritage advice when previously unidentified Aboriginal objects are discovered
Heritage Specialist	<ul style="list-style-type: none"> ● Provide advice for undertaking heritage salvage ● Review the salvaged materials for reuse in future stages of SMW to ensure appropriate treatment and storage. This would be undertaken in consultation with Sydney Metro. ● Provide advice for protection measures, in consultation with project structural engineer, for sensitive heritage items ● Undertaken regular site inspections to confirm condition of heritage items within and in the vicinity of the project construction sites, to be done in conjunction with structural engineering assessments as required.

Role	Responsibilities
	<ul style="list-style-type: none"> Review any proposed scope or methodology changes which may impact on heritage items to ensure consistency with the heritage impacts outlined in Condition A1 of the project CoA.
All personnel	<ul style="list-style-type: none"> Notify Site Supervisor of any observed impacts on Aboriginal or non-Aboriginal heritage.

8.2 Training

The general project site induction will include a component on cultural heritage management to ensure that personnel understand the potential impacts from construction and the proposed mitigation measures. The preparation of the site induction material will include input from the RAPs where information relating to any Aboriginal cultural values is to be included.

The site induction training will address elements related to heritage management including:

- Existence and requirements of this HMP
- Clearing limits
- 'Heritage No-go Zones'
- Relevant legislation
- Roles and responsibilities for cultural heritage management.

Targeted training in the form of toolbox talks or tailored training sessions will also be provided to personnel with a key role in cultural heritage management. Specific training may include:

- Obligations and specific responsibilities under the Project CoA including construction management measures to minimise impacts on Aboriginal or non-Aboriginal heritage
- Responsibilities pertaining to the protection of Aboriginal and non-Aboriginal heritage under the *National Parks and Wildlife Act 1974*, the *Heritage Act 1977*, the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth), local environmental plans and other relevant legislation outlined in Section 2.1 of the HMP
- Identification and recognition of 'Heritage No-go Zones' and measures to avoid impact outside of authorised areas
- Recognition of heritage items likely to be affected by the construction works, such as:
 - Shops (and potential archaeological site) (Parramatta LEP Item No. I703)
 - Kia Ora (and potential archaeological site) (Parramatta LEP Item No. I716)
 - RTA Depot (Parramatta LEP Item No. I576)
- Response procedures in the event of an unexpected find

Specific training will be provided to personnel likely to work within or in proximity (<20 m) to cultural heritage items.

Specialised training will be provided to the GALC environmental management team (particularly Environmental Advisors) to ensure correct identification of heritage items and understanding of the management recommendations and conditions of approval.

Further details regarding inductions and training are outlined in Section 9 of the CEMP.

8.3 Monitoring, Inspections and Reporting

Monitoring, inspection, and reporting requirements are outlined in Table 18.

Additional requirements and responsibilities in relation to monitoring and inspections are documented in the CEMP.

Table 18 Inspection, monitoring and reporting requirements

Item	Frequency	Standards	Reporting	Responsibility
Inspection				
Construction site layout inspection	Periodic inspections during site set up of each phase of construction	Pre-construction site layout inspections for Aboriginal and non-Aboriginal heritage items within the construction site. Inspection includes location of vibration generating activities in proximity to heritage items, as well as location of acoustic sheds and construction site structures. Inspection will ensure heritage items are appropriately fenced off from construction site works. Inspection will ensure clear delineation of areas of archaeological potential which must receive archaeological clearance prior to the commencement of any ground disturbing works on site.	Pre-construction inspection memo to be provided by Heritage Specialist for input to Environmental Advisor's inspection report	Environmental Advisor and Heritage Specialist
Weekly inspections	Once a week during environmental inspections	Weekly inspections which, as part of the weekly environmental inspection further outlined in the CEMP, will include inspection of the environmental controls and mitigation measures outlined in Section 4 and Section 7.	Weekly environmental inspection	Environmental Advisor
Independent Site Inspections	As required	Inspections undertaken independently of GALC inspections which will include inspection of compliance with the MCoAs, REMMs and CEMF requirements, as well as the environmental controls and mitigation measures outlined in Section 4 and Section 7.	Weekly environmental compliance inspection	Environmental Representative Sydney Metro Representatives
Daily inspections	Once a day walk through the construction site	Daily walk through of the construction site to identify potential Aboriginal and non-Aboriginal heritage impacts, including: <ul style="list-style-type: none"> ● Vibration generating activities ● Protective fencing / barriers 	Daily environmental checklist	Site Supervisor

Item	Frequency	Standards	Reporting	Responsibility
		<ul style="list-style-type: none"> Location of construction sites, stockpiles, or acoustic sheds 		
Periodic Inspections	Monthly (TBC)	<p>Periodic inspections of heritage items in the construction site and its vicinity to monitor for any incidental impacts, including resulting from vibration or other non-direct impacts.</p> <p>The inspections should be undertaken by a structural engineer in consultation with the Heritage Specialist.</p> <p>The frequency of the inspections is to be determined following the completion of the noise and vibration assessments for each of the construction sites.</p>	Post-inspection report detailing findings	Structural Engineer and Heritage Specialist
Post-construction inspections	<p>Within three (3) months following completion of construction at and near:</p> <p>(i) the Roxy Theatre (SHR I00711);</p> <p>(ii) the former State Abattoirs (State Environmental Planning Policy (State Significant Precincts) 2005 Item 141); and</p> <p>(iv) the RTA Depot facade fronting Unwin Street (Parramatta Local</p>	<p>Walkthrough of construction sites to be undertaken by a suitable qualified and experienced heritage consultant and structural engineer within three months following construction near those heritage items.</p> <p>Walkthrough is to identify any impacts to those heritage items and undertake recording of the condition of those items following construction.</p>	Post-inspection report detailing findings	Structural Engineer and Heritage Specialist

Item	Frequency	Standards	Reporting	Responsibility
	Environmental Plan 2011 I576);			
Monitoring				
Vibration monitoring	When required (during vibration generating activities)	Periodic monitoring of vibration levels at heritage items within proximity to construction works to ensure it does not exceed the relevant criteria (as per NVMP and if a heritage building or structure is found to be structurally unsound (following inspection) a more conservative cosmetic damage criteria of 2.5 mm/s peak component particle velocity (from DIN 4150) would be considered). Frequency of monitoring to be determined by structural engineer following completion of noise and vibration assessments for all construction sites.	Vibration monitoring report	Site Supervisor/specialist consultant
Reporting				
Archaeological Clearance reporting	Upon completion of archaeological investigations	Written clearance confirmation (letter or memo format) must be provided by the Primary Excavation Director(s) to GALC once archaeological management has been completed. This must include whether any further management requirements for Aboriginal or non-Aboriginal archaeology (ie salvage excavation or monitoring) are required prior to the commencement of ground disturbing works.	Archaeological Clearance report (letter or memo)	Environment and Sustainability Director
Unexpected Finds	When required (if an unexpected find is uncovered)	For all unexpected heritage finds the project Environmental Manager shall notify the Sydney Metro Environmental Manager and Sydney Metro Heritage Program Manager in accordance with the Sydney Metro Unexpected Finds Procedure. The nominated Excavation Directors will also be notified.	Submission to Heritage Council of NSW (where relics are of State significance) Incident report to Heritage Specialist	Environment and Sustainability Director

Item	Frequency	Standards	Reporting	Responsibility
		<p>If relics of State significance are identified, the incident would be reported to Heritage Council of NSW (for non-Aboriginal heritage) prior to re-commencing construction works.</p> <p>RAPs will be notified in the event that an Aboriginal objects are identified.</p>	<p>and Excavation Director</p> <p>Update to consultation log should RAP notification occur</p>	
Inspection Records	Duration of the construction program	Records of all site inspections undertaken in relation to heritage management and condition compliance including inspections by Heritage Specialist, Structural engineer, Excavation Director/Archaeologist for unexpected heritage finds, Heritage NSW or others as identified during the project.	Maintain and manage records of all heritage-associated inspection	Environmental Manager
Consultation Log	When required following Aboriginal consultation	GALC is to keep and maintain a log of Aboriginal community consultation undertaken as part of the project.	Aboriginal Community Consultation Log	Environmental Advisor
Archival Recording	Pre-construction	Preparation of all required photographic archival recordings identified in section 7 of this document.	Photographic Archival Record Report	Heritage Specialist (where not prepared by Sydney Metro)

Specific reports prepared in response to heritage monitoring will capture detail including, but not limited, to:

- Within one working day of receiving a complaint, notify Sydney Metro
- Within 5 working days provide Sydney Metro with a final report regarding the complaint
- Detail of any corrective actions and confirmation of successful implementation
- Records of compliance with the MCoA, REMMs, CEMF requirements and management measures in this HMP
- Updated salvage registers
- Archival recordings undertaken of any heritage item
- Unexpected finds and stop work orders
- Records of any impacts avoided or minimised through design or construction methods
- Records of any management measures implemented
- Records of heritage inspections undertaken.

Specific reporting requirements are outlined in Table 19.

Table 19: Reporting Requirements in relation to Aboriginal and non-Aboriginal Heritage Management

Reporting Requirement	Responsibility
Pre-construction inspection memo to be provided by Heritage Specialist for input to Environmental Advisor's inspection report	Heritage Specialist and Environmental Advisor
Daily environmental checklist	Site Supervisor
Post-inspection report detailing findings	Environmental Manager Structural Engineer Heritage Specialist
Vibration monitoring report	Site Supervisor/specialist consultant
Archaeological Clearance report (letter or memo)	Excavation Director Environment and Sustainability Director
Submission to Heritage Council of NSW (where relics are of State significance)	Excavation Director to Sydney Metro for Submission
Unexpected Finds records	Excavation Director Heritage Specialist
Record of Archaeological Monitoring	Excavation Director
Incident report	Excavation Director /Heritage Specialist and Environmental Manager
Maintain and manage records of all heritage-associated inspection	Heritage Specialist and Environmental Manager
Aboriginal Community Consultation Log	Environmental Advisor
Photographic Archival Record Report	Heritage Specialist (where not prepared by Sydney Metro)
Additional Heritage Assessments (if required)	Heritage Specialist

8.4 Auditing

Audits (both internal and independent) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub-plan, MCoA and other relevant approvals, licenses, and guidelines. These audits will be undertaken at planned intervals to provide information on whether the Project:

- Is meeting its compliance obligations
- Conforms to this sub-plan
- Determines if this sub-plan is effectively implemented and maintained.

GALC will undertake an internal audit within the first three months from commencement of construction and then annually for the HMP.

The approach to internal and independent audits, including auditing schedule, is outlined further in Section 11.3 of the CEMP.

8.5 Environmental Incidents

Management of environmental incidents is detailed in Section 12.2 of the CEMP.

Examples of incidents as they relate to heritage may typically include:

- Damage to heritage buildings or structures
- Unapproved clearing of vegetation that contributes to the heritage significance of an item or results in impacts to Aboriginal objects
- Unexpected heritage finds.

8.6 Complaints Register

All complaints made by the community and stakeholders will be managed in accordance with the Sydney Metro's requirements, the Overarching Community Communication Strategy, including the Sydney Metro Construction Complaints Management System (CCMS) (2021), as well as relevant MCoAs (B1 – B6).

The CCMS will be implemented before the commencement of any construction works and maintained for the duration of construction. The CCMS will be available for a minimum for 12 months following completion of construction of Project.

The following information will be available to facilitate community enquiries and manage complaints before the commencement of work and for 12 months following the completion of construction:

- a) A 24- hour telephone number for the registration of complaints and enquiries about the Project
- b) A postal address to which written complaints and enquires may be sent
- c) An email address to which electronic complaints and enquiries may be transmitted
- d) A mediation system for complaints unable to be resolved.

This information will be accessible to all in the community regardless of age, ethnicity, disability or literacy level.

An electronic complaints register will be maintained on-site at all times. This register will record information on all complaints received about the Project during construction works and for a

minimum of 12 months following the completion of construction. This register will include the following information:

- a) Number of complaints received
- b) Date and time of the complaint
- c) Number of people in the household affected in relation to a complaint, if relevant
- d) Method by which the complaint was made
- e) Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect
- f) Issue of the complaint
- g) Means by which the complaint was addressed and whether resolution was reached, with or without mediation
- h) If no action was taken, the reason(s) why no action was taken.

Community members and stakeholders making a complaint will be advised of the following information before, or as soon as practicable after, providing personal information:

- a) the complaints register may be forwarded to government agencies, including the Department (Department of Planning Industry and Environment, 4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150), to allow them to undertake their regulatory duties
- b) by providing personal information, the complainant authorises GALC to provide that information to government agencies
- c) the supply of personal information by the complainant is voluntary
- d) the complainant has the right to contact government agencies to access personal information held about them and to correct or amend that information (Collection Statement).

The Collection Statement will be included on the GALC or Project website to make prospective complainants aware of their rights under the *Privacy and Personal Information Protection Act 1998*. For any complaints made in person, the complainant will be made aware of the Collection Statement.

In accordance with the overarching CCMS, GALC will submit the complaints register in the online Consultation Manager system. Sydney Metro will provide the Complaints Register to the Planning Secretary upon request, within the timeframe stated in the request.

9 REVIEW AND IMPROVEMENT

9.1 Continuous Improvement

The Project Management Team will review the status and adequacy of the EMS including this CEMP and Sub-plans. The objective of the review will be to ensure that it meets current Sydney Metro and GALC requirements as well as relevant environmental standards.

Continuous improvement of this HMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives, and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

In order to ensure continual improvement and prevent recurring issues, this sub-plan will be reviewed in response to:

- Corrective actions arising from non-conformance, incidents, or audits
- Opportunity for improvement in environmental management performance which may be identified by the project team, ER or Sydney Metro
- Changes to the Gamuda Australia EMS.

Review of this sub-plan will occur annually as a minimum, or as needed in consultation with Sydney Metro and the ER. A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure as outlined in the CEMP.

9.2 Document Updates

A review of this document should be undertaken at the following key stages:

- Clyde – the HMP should be reviewed following the completion of the Aboriginal test excavation report for the site. The HMP should be updated if the results of the test excavations identify additional management or mitigation measures.
- Parramatta Metro Station Site – the HMP should be reviewed at the completion of each stage of test excavation including Area 1a and 1b. The HMP should be updated if the results of the test excavation identify additional management or mitigation measures.
- The HMP should also be updated to include the revised non-Aboriginal and Aboriginal salvage excavation methodologies prepared based on the results of test excavations at Parramatta Metro Station site.
- The HMP should be reviewed, and updated where necessary, should any modifications to the instrument of approval be submitted to DPE. Updates should include but are not limited to any

additional impacts to heritage as well as management recommendations for proposed modifications

The processes described above in Section 9.1 may also result in the need to update or revise this sub-plan. This will occur annually as a minimum, or as needed, and may only be approved by the Environmental Manager, or delegate.

Where minor amendments are required to this HMP, the revised HMP will be issued to the ER for review and endorsement in accordance with MCoA A30(j).

9.3 Distribution

All GALC personnel and contractors will have access to this HMP via the project document control management system.

The approved HMP will be published on the GALC website within one week of being approved and be publicly available until the end of the Construction Period.

A copy of the HMP will be published and maintained on the Project website, in accordance with MCoA B11. The HMP will be published within one week of its approval or before the commencement of any work to which they relate or before their implementation, as the case may be.

The document is uncontrolled when printed.

ATTACHMENTS

Attachment 1 – Compliance Matrix

The MCoA, REMMs, CEMF requirements and EPL requirements that relate to this HMP are detailed in the following tables.

Drafting note - the table below will be updated to include the Conditions of Approval for the Modification 2 Report, when available.

MCoA

ID	Conditions of Approval	Document Reference
A2	Stage 1 of the CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 of this schedule unless otherwise specified in, or required under, this approval.	CEMP
A6	Where the conditions of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;	Attachment 6
	(b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them;	Attachment 6
	(c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that the party(s) has none or has failed to provide feedback after repeated requests;	Attachment 6
	(d) outline of the issues raised by the identified party(s) and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.	Attachment 6
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents	CEMP and this document

ID	Conditions of Approval	Document Reference												
	listed in Condition A1 of this schedule to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 of this schedule will be implemented and achieved during construction.													
C5	Of the CEMP Sub-plans required under Condition C1 of this schedule, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan . Details of issues raised by a government agency during consultation must be included in the relevant CEMP Sub-plan , including copies of all correspondence from those government agencies as required by Condition A6 of this schedule. Where a government agency (ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why:	Section 1.4 and Attachment 6 of this document												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #666; color: white;">Required CEMP Sub-plan</th> <th style="background-color: #666; color: white;">Relevant government agencies to be consulted for each CEMP Sub-plan</th> </tr> </thead> <tbody> <tr> <td>(a) Noise and vibration</td> <td>SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)</td> </tr> <tr> <td>(b) Flora and fauna</td> <td>DPIE EES, DPI Fisheries, SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)</td> </tr> <tr> <td>(c) Soil and water</td> <td>DPIE EES, Relevant Council(s), SOPA (in respect of Sydney Olympic Park) and Sydney Water (if Sydney Water's assets are affected)</td> </tr> <tr> <td>(d) Heritage (Non-Aboriginal and Aboriginal)</td> <td>Heritage NSW, SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)</td> </tr> <tr> <td>(e) Spoil</td> <td>Relevant Council(s) and SOPA (in respect of Sydney Olympic Park)</td> </tr> </tbody> </table>	Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan	(a) Noise and vibration	SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)	(b) Flora and fauna	DPIE EES, DPI Fisheries, SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)	(c) Soil and water	DPIE EES, Relevant Council(s), SOPA (in respect of Sydney Olympic Park) and Sydney Water (if Sydney Water's assets are affected)	(d) Heritage (Non-Aboriginal and Aboriginal)	Heritage NSW, SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)	(e) Spoil	Relevant Council(s) and SOPA (in respect of Sydney Olympic Park)	
Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan													
(a) Noise and vibration	SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)													
(b) Flora and fauna	DPIE EES, DPI Fisheries, SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)													
(c) Soil and water	DPIE EES, Relevant Council(s), SOPA (in respect of Sydney Olympic Park) and Sydney Water (if Sydney Water's assets are affected)													
(d) Heritage (Non-Aboriginal and Aboriginal)	Heritage NSW, SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)													
(e) Spoil	Relevant Council(s) and SOPA (in respect of Sydney Olympic Park)													
C6	The CEMP Sub-plans must state how:	Section 7.1												
	(a) the environmental performance outcomes identified in the documents listed in Condition A1 of this schedule will be achieved;	Section 7.2 Section 7.4 Section 7.5 Section 8.1 Section 8.3												
	(b) the mitigation measures identified in the documents listed in Condition A1 of this schedule will be implemented;	Attachment 1												

ID	Conditions of Approval	Document Reference
	(c) the relevant conditions of this approval will be complied with; and	Attachment 1
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Section 5, Section 7 and Section 8.1 of the CEMP
C7	With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP Sub-plans must be submitted to the Planning Secretary for approval.	Section 1.5
C9	Any of the CEMP Sub-plans to be approved by the Planning Secretary must be submitted to the Planning Secretary with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is phased no later than one (1) month before the commencement of that phase.	Section 1.5
C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans , as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER , must be implemented for the duration of construction. Where construction of Stage 1 of the CSSI is phased, construction of a phase must not commence until the CEMP and CEMP Sub-plans for that phase have been approved by the Planning Secretary or certified by the ER upon nomination by the Planning Secretary (whichever is applicable).	Section 1.5
C13	In addition to the relevant requirements of the CEMP , the Heritage CEMP Sub-plan must include, but not be limited to:	Section 1.6
	(a) be prepared in consultation with a suitably qualified and experienced heritage expert;	
	(b) identify exclusion zones, archival recording requirements, baseline and periodic monitoring protocols (including before and during construction);	CEMP Attachment 8 Section 7.6.1 Section 8.3
	(c) identify and assess the heritage significance of the ancillary structures proposed to be demolished or significantly impacted that are within the curtilage of White Bay Power Station and other items identified as retaining 'potential heritage significance' in the documents listed in Condition A1 of this schedule and which will be impacted by the CSSI;	Not applicable to WTP works

ID	Conditions of Approval	Document Reference
	<p>(d) in association with Condition D61 of this schedule, set out the final site inspections to be conducted within three (3) months of completion of construction for the following heritage sites unless otherwise agreed by the Planning Secretary:</p> <p>(i) the Roxy Theatre (SHR I00711);</p> <p>(ii) White Bay Power Station (SHR I01015); <i>(not applicable to WTP works)</i></p> <p>(iii) the former State Abattoirs (State Environmental Planning Policy (State Significant Precincts) 2005 Item 141); and</p> <p>(iv) the RTA Depot facade fronting Unwin Street (Parramatta Local Environmental Plan 2011 I576); and</p>	Section 8.3
	<p>(e) set out means of rectification of any damage by the CSSI to Heritage items (d)(i) to (d)(iv) above within six (6) months of the completion of construction at the construction site identified in the relevant Heritage CEMP Sub-plan. This rectification work must be in consultation with a suitably qualified and experienced heritage consultant to ensure the use of appropriate materials, appropriate conservation practices and in accordance with existing heritage management documents (for example, conservation management plans or strategies) to protect and conserve the heritage significance of the items.</p>	Section 7.6.8
	<p>The Heritage CEMP Sub-plan must include Aboriginal cultural heritage management and mitigation measures (that may include conservation, archaeological salvage excavation and community collection) based on the Aboriginal Cultural Heritage Excavation Report and continuing Aboriginal community consultation.</p>	Section 7.4 Section 7.5.2.8
Non-Aboriginal Heritage		
D13	<p>The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1 of this schedule. Unexpected heritage finds identified by Stage 1 of the CSSI must be managed in accordance with the Unexpected Finds Protocol outlined in Conditions D31 to D33 of this schedule. Consideration of avoidance and redesign to protect state significant unexpected finds must be addressed where this condition applies.</p>	Section 7.6.4 and Attachment 2
D14	<p>Before installing protective site boundary hoarding or equipment used for vibration and noise monitoring at any Heritage item identified in the documents listed in Condition A1 of this schedule, the advice of a suitably qualified and experienced built heritage expert must be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item. The installation must also consider and avoid impacts to potential historical archaeology and seek advice from the Excavation Director approved under Condition D27 below.</p>	Section 7.3.1 and NVMP

ID	Conditions of Approval	Document Reference
D15	Before commencement of any excavation at the Parramatta metro station construction site, a detailed investigation must be undertaken to precisely locate the Parramatta Convict Drain. All options available to retain the Parramatta Convict Drain in situ must be considered. If retention of any part of the Parramatta Convict Drain located in situ is not feasible, the Proponent must satisfactorily demonstrate to the Planning Secretary why its removal is appropriate. If it is not feasible to retain the Parramatta Convict Drain in situ, archival recording must be undertaken on the affected section of the item in accordance with Heritage Council of NSW guidelines.	Section 7.5.2.10
D16	During construction, the Proponent must implement protective measures to prevent adverse impacts on the heritage significance of the Victorian Regency terraced shops at 41-45 George Street, Parramatta and Kia Ora Georgian House at 64 Macquarie Street, Parramatta. Before installing such measures, the advice of a suitably qualified and experienced built heritage expert must be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item. Protection measures must also consider and avoid potential impacts to significant historical archaeology and seek the advice from the Excavation Director approved under Condition D27 below.	Section 7.6.8
D17	The Roxy Theatre, White Bay Power Station, the former State Abattoirs and the former RTA Depot facade fronting Unwin Street must not be destroyed, modified or otherwise adversely affected, except as identified in the documents listed in Condition A1 of this schedule.	Section 7.6.8
D18	Where Heritage items, or items assessed to be of local heritage significance in the documents listed in Condition A1 of this schedule, are proposed to be fully or partially destroyed, heritage salvage must occur in consultation with a suitably qualified heritage specialist. The Proponent must develop a salvaged materials and moveable heritage register. The register must identify significant items to be salvaged. Salvage must occur where significance is retained and / or the potential for re-use, reinstatement or re-sale has been identified. The salvage from any State-listed items must be undertaken in consultation with Heritage NSW	Section 7.6.2 Salvage of Significant Fabric
D18.1	The Proponent must investigate opportunities to relocate the Rosehill Railway Station Footbridge to an alternate location in the City of Parramatta LGA in consultation with City of Parramatta Council before the dismantled footbridge can be removed from the Clyde Stabling and Maintenance Facility Site. The Railway Footbridge Heritage Conservation Strategy 2016 (GAO Heritage Group, 2016) and any other relevant guideline or plan must be considered when assessing alternate locations. The Rosehill Railway Station Footbridge must be stored and protected on the Clyde Stabling and Maintenance Facility Site, and where a suitable location is found, must be reinstated no later than 12 months following the completion of construction, unless otherwise agreed with the Planning Secretary	Section 7.6.2.1

ID	Conditions of Approval	Document Reference
	If an alternate location cannot be agreed to between the Proponent and Relevant Council, evidence of consultation, including consideration of alternative sites, must be submitted to the Planning Secretary for information before the dismantled Rosehill Railway Station Footbridge is removed from the Clyde Stabling and Maintenance Facility Site.	
D18.2	Where an alternative location for the Rosehill Railway Station Footbridge is agreed to, a Heritage Asset Action Plan, including an updated statement of significance, in accordance with Statement of Best Practice for Heritage Asset Action Plans (Heritage Council of NSW 2021), must be prepared to reflect its new setting within 12 months of relocation and at no cost to council. The Proponent is responsible for protection of the Rosehill Railway Station Footbridge until ownership is transferred to Council. Note: This condition does not prevent the Proponent from providing funding or similar to Council for the preparation of the required documents and does not prevent Council from preparing them	Section 7.6.2.1
Aboriginal Heritage		
D19	All reasonable steps must be taken not to harm, modify or otherwise impact Aboriginal objects except as authorised by this approval.	Section 7.4.2
D20	The Registered Aboriginal Parties (RAPs) must be kept informed about Stage 1 of the CSSI. The RAPs must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of Stage 1 of the CSSI.	Section 7.3.2 and Section 7.4.1
D21	Aboriginal archaeological test excavation must be undertaken at those areas identified in Table 25 of the revised Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared by Artefact Heritage and dated November 2020.	Section 7.3.3 and Section 7.5
D22	An Aboriginal Archaeological Test Excavation Methodology(s) must be prepared and appropriately integrated with the revised Archaeological Research Design and Excavation Methodology . The Aboriginal Archaeological Salvage Excavation Methodology(s) must be prepared after analysis of the test excavation results.	Section 7.3.3 and Section 7.5
D23	At the completion of Aboriginal cultural heritage test and salvage excavations, an Aboriginal Cultural Heritage Excavation Report(s) , prepared by a suitably qualified expert, must be prepared in accordance with the <i>Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW</i> , OEH 2011 and the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> , DECCW 2010. The Aboriginal Cultural Heritage Excavation Report(s) must document the results of the archaeological test	Section 1.5 and Section 7.5.2.8 Note this will be Sydney Metro's responsibility), refer to Section 7.5.2.8

ID	Conditions of Approval	Document Reference
	excavations and any subsequent salvage excavations. The RAPs must be given a minimum of 28 days to consider the report and provide comments before the report is finalised. The final report must be provided to Heritage NSW within 24 months of the completion of the Aboriginal archaeological excavations (both test and salvage).	
D24	Where previously unidentified Aboriginal objects are discovered, all work must immediately stop in the vicinity of the affected area and a suitably qualified and experienced Aboriginal heritage expert must be contacted to provide specialist heritage advice before construction recommences. The measures to consider and manage this process must be specified in the Heritage CEMP Sub-plan required by Condition C5 of this schedule and, where relevant, include registration in the Aboriginal Heritage Information Management System (AHIMS).	Section 7.4 and Section 8.1
Excavation and Archaeology		
D25	<p>Before the commencement of any work at Parramatta and The Bays metro station construction sites, a revised Archaeological Research Design and Excavation Methodology(s) must be prepared in accordance with Heritage Council of NSW guidelines and with reference to the detailed design of Stage 1 construction of the CSSI to guide archaeological excavation. The revised Archaeological Research Design and Excavation Methodology(s) must be prepared by the Excavation Director (approved under Condition D27 below) and must include:</p> <ul style="list-style-type: none"> a) site specific research for the Parramatta and The Bays metro station construction sites which is conducted by a professional historian to clearly articulate the historical development of the allotments to assist with the reassessment of potential and significance; b) comparative analysis from archaeological investigations in Parramatta (including theses, publications and grey literature reports); c) preparation of research questions based on the additional site-specific research required by this condition, and relevant research agendas from previously excavated early historical occupation in Parramatta including recovered artefact assemblages; and d) a reconsideration of archaeological methods to manage the sites based on this additional assessment. <p>The revised Archaeological Research Design and Excavation Methodology(s) must apply to both Parramatta and The Bays metro station construction sites and be prepared in consultation with Heritage NSW and Place Management NSW (in respect of The Bays) and submitted to the Planning Secretary for approval.</p>	Attachment 7 Section 1.5 and Section 7.5.2 for Parramatta Station (The Bays Metro Station is excluded from the scope of this document)

ID	Conditions of Approval	Document Reference
	<p>The revised Archaeological Research Design and Excavation Methodology(s) must be implemented throughout the archaeological excavation programs.</p> <p><i>Note: Nothing in these conditions prevents the Archaeological Research Design and Excavation Methodology to be separate procedures.</i></p>	
D26	<p>The revised Archaeological Research Design and Excavation Methodology(s) must include provision for early physical investigation of areas of impact identified as likely to contain State significant archaeology or subterranean Heritage items in the research design to inform excavation in these areas. This must include the Parramatta and The Bays metro station sites, including Parramatta Convict Drain, Parramatta Sand Body, White Bay Power Station (inlet) Canal and Beattie Street Stormwater Channel.</p>	<p>Section 7.5.2 for Parramatta Station (White Bay Power Station, and The Bays Metro Station are excluded from the scope of this document)</p>
D27	<p>Before commencement of archaeological excavation, the Proponent must nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's <i>Criteria for Assessment of Excavation Director</i> (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary, in consultation with Heritage NSW. The Excavation Director must be present to oversee excavation, advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the approved Archaeological Research Design and Excavation Methodology(s) required under Condition D25 of this schedule. Aboriginal archaeological excavations must be conducted by a suitably qualified person in accordance with the requirements of the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> (DECCW 2010). More than one Excavation Director may be engaged for Stage 1 of the CSSI to exercise the functions required under the conditions of this approval.</p>	<p>Section 7.5.2.1 and Section 8.1</p>
D28	<p>Following completion of archaeological excavation programs, a Final Excavation Report and an Aboriginal Cultural Heritage Excavation Report must be prepared that includes further detailed and site-specific historical research undertaken to enhance the final reporting, and results of archaeological excavations. The report must include details of any significant artefacts recovered (salvaged), where they are located and details of their ongoing conservation. The Final Excavation Report must document significant results and artefacts</p>	<p>Section 7.5.2.8</p>

ID	Conditions of Approval	Document Reference
	which may be re-used in future stages of the CSSI. The Final Excavation Report must be prepared in accordance with guidelines and standards required by Heritage Council of NSW.	
D29	The Final Excavation Report and Aboriginal Cultural Heritage Excavation Report must be submitted to the Planning Secretary, Heritage NSW and the Relevant Council for information no later than 24 months after the completion of the archaeological excavation.	Section 1.5 and Section 7.5.2.8
D30	In the event the CSSI salvages state significant historical archaeology associated with early convict occupation at the Parramatta metro station construction site for which retention and future conservation is not possible: a) the key findings of the archaeological investigations must be documented which explain their significance within the context of Parramatta and NSW no later than two (2) years after the completion of the archaeological excavations; and	Section 7.5.2.9
	b) provide for the curation, display and public access of artefacts, site records and final reports.	Section 7.5.2.9
	<i>Note: In reference to (b) above, this may involve partnerships with museums, local heritage centres and/or universities.</i>	
Unexpected Finds		
D31	An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (heritage items and values) in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW.	Attachment 2 and Attachment 5
D32	The Unexpected Heritage Finds and Human Remains Procedure must be prepared by a suitably qualified and experienced heritage specialist in consultation with the Heritage Council of NSW (with respect to non-Aboriginal cultural heritage) and in relation to Aboriginal cultural heritage, in accordance with the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> (DECCW 2010) and submitted to the Planning Secretary for information no later than one (1) month before the commencement of construction.	Section 1.5, Section 8.1 Sydney Metro Unexpected Finds Protocol is also included in Attachment 2
D33	The Unexpected Heritage Finds and Human Remains Procedure , as submitted to the Planning Secretary, must be implemented for the duration of construction.	Attachment 2
	<i>Note: Human remains that are found unexpectedly during the carrying out of work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately. Management of human remains in NSW is subject to</i>	

ID	Conditions of Approval	Document Reference
<i>requirements set out in the Public Health Act 2010 (NSW) and Public Health Regulation 2012 (NSW). Nothing in these conditions prevents separate procedures for the Unexpected Heritage Finds and Human Remains Procedure.</i>		
D46	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.	7.6.3 and NVMP
D47	The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring at Heritage items.	Section 7.3.1
D48	Before conducting at-property treatment at any Heritage item identified in the documents listed in Condition A1 of this schedule, the advice of a suitably qualified and experienced built heritage expert must be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item.	Section 7.3.1, Section 8.1 and 8.2
D49	If a Heritage item is found to be structurally unsound (following inspection) a more conservative cosmetic damage criterion of 2.5 mm/s peak component particle velocity (from DIN 4150) must be applied.	Section 7.6.2 and NVMP

REMMs

ID	Revised Environmental Mitigation Measure	Document Reference
Noise and Vibration		
NV16	Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure. For heritage items, the more detailed assessment would specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.	Section 7.6.2 and NVMP
NV17	Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and attended vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure. For heritage items, the more detailed assessment would specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.	Section 7.6.2 and NVMP

ID	Revised Environmental Mitigation Measure	Document Reference
Non-Aboriginal Heritage		
NAH1	<p>Archival recording and reporting of the following heritage items would be carried out in accordance with the NSW Heritage Office’s How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006):</p> <ul style="list-style-type: none"> ● Shops (and potential archaeological site) (Parramatta LEP Item No. I703) ● Kia Ora (and potential archaeological site) (Parramatta LEP Item No. I716) ● RTA Depot (Parramatta LEP Item No. I576) ● State Abattoirs (SEPP Listing No. A) ● White Bay Power Station (SHR Listing No. 01015) (<i>Outside scope of WTP</i>) ● Rosehill Railway Station Footbridge (SHI no. 4801762) ● Rosehill Railway Station (unlisted potential heritage item) 	Section 7.6.1 (White Bay Power Station is excluded from the scope of this document)
NAH2	A method for the demolition of existing buildings and/or structures at specified construction sites would be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items.	Section 7.6.5
NAH5	Where heritage items, including significant archaeology are impacted by Stage 1 works, consideration would be given to their inclusion in the Heritage Interpretation Plan for future stages.	Section 7.6.10
NAH6	<p>The archaeological research design would be implemented.</p> <p>Significant archaeological findings would be considered for inclusion in heritage interpretation (as per NAH5) for the project and be developed in consultation with the relevant local council.</p>	Section 7.5.2.2
NAH7	An Archaeological Excavation Report would be prepared by the Excavation Director and be provided to the Heritage NSW within two years of the completion of archaeological excavations specified in the archaeological research design(s).	Section 7.5.2.8
NAH8	<p>In the event that State significant archaeology associated with early convict occupation is located at Parramatta metro station:</p> <ul style="list-style-type: none"> ● In-situ conservation would be considered. If in-situ conservation is not feasible and reasonable, a strategy to mitigate impacts would be prepared in consultation with the NSW Heritage Council (or delegate) 	Section 7.6.4 and Section 7.5.2.9

ID	Revised Environmental Mitigation Measure	Document Reference
	<ul style="list-style-type: none"> An Archaeological Method Statement would be prepared in consultation with the NSW Heritage Council (or delegate) for management of the archaeological remains, whether for conservation or archaeological investigation and recording An accessible publication would be prepared within two years of archaeological excavations to document the archaeological investigations Sydney Metro would provide for the meaningful curation, display and public access of any artefacts collected. This may involve partnerships with museums, local heritage centres and/or universities. 	
NAH10	<p>An assessment of significance would be prepared in consultation with the relevant local council for the following potential unlisted heritage items:</p> <ul style="list-style-type: none"> 220 Church Street, Parramatta 48 Macquarie Street, Parramatta Pine Inn at 19 Parramatta Road, Concord 338-340 Parramatta Road, Burwood Former warehouse shed, Glebe Island. <p>If the assessment of significance confirms these items have local heritage value, an archival recording would be undertaken.</p>	Previously Undertaken by Sydney Metro
NAH11	<p>Prior to commencement of demolition of heritage elements at Rosehill Railway Station and Rosehill Railway Footbridge, significant heritage fabric would be identified for salvage and reuse opportunities for salvaged fabric considered.</p>	Section 7.6.2
Aboriginal Heritage		
AH1	<p>Aboriginal stakeholder consultation would be carried out in accordance with the Heritage NSW, NSW Department of Planning and Environment's <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010</i> (DECCW, 2010).</p>	Section 7.4.1
AH2	<p>Archaeological test excavation (and salvage when required) would be carried out where intact natural profiles with the potential to contain significant archaeological deposits are encountered at the specified construction sites and the Parramatta power supply route. Excavations would be conducted in accordance with the methodology outlined in the Aboriginal cultural heritage assessment report.</p>	Section 7.5.1

ID	Revised Environmental Mitigation Measure	Document Reference
AH3	If Aboriginal archaeological remains are recovered during Stage 1, results would be incorporated into Aboriginal heritage interpretation for the Concept in consultation with registered Aboriginal parties.	Section 7.5.2.2
AH4	In the event that a potential burial site or potential human skeletal material is exposed during construction, the <i>Sydney Metro Exhumation Management Plan</i> would be implemented.	Section 7.6.4.1

CEMF Requirements

Clause	Requirement	Document Reference
3.4 d. iii	For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent reference where each requirement is addressed	Attachment 1
3.4 d. iv	For each plan under the CEMP, set objectives and targets and identify measurable key performance indicators relevant to these	Section 3
9.1a	The following heritage management objectives will apply to construction:	Section 3
	i. Consider heritage values in any architectural design, education or physical interpretation	
	ii. Minimise impacts on items or places of heritage value	Section 3
	iii. Avoid accidental impacts on heritage items	Section 3
	iv. Maximise worker's awareness of Aboriginal and Non-Aboriginal heritage	Section 3
9.2 a i	Principal Contractors will develop and implement a Heritage Management Plan which will include as a minimum: Evidence of and processes for consultation with Registered Aboriginal Parties and the NSW Heritage Council	This Construction Heritage Management Plan
9.2 a ii	Identification of all heritage buildings and structures, to guide the assessment, retention, protection, conservation, salvage and reuse of heritage elements throughout the work	Section 5.1.1, 5.2.1, 5.3.1 and 5.4.1
9.2 a iii	Identification of initiatives that will be implemented to enhance heritage values and minimise heritage impacts, including procedures and processes that will be used to implement and document heritage management initiatives	Section 3, Section 7
9.2 a iv	The Heritage Management Plan must be prepared in accordance with the relevant conditions of the Planning Approval and the Construction Environmental Management Framework, and set out how the Contractor will evidence the achievement of these requirements	Attachment 1 and Section 8.3

Clause	Requirement	Document Reference
9.2 a v	The responsibilities of key project personnel with respect to the implementation of the plan	Section 8.1
9.2 a vi	Both the methodology and critical stages within the Contractor's Activities for the identification, assessment, retention, protection, conservation, interpretation, salvage and reuse of heritage elements	Section 7
9.2 a vii	Procedures for interpretation of heritage items uncovered through salvage or excavation during detailed design	Section 1.1 and Section 8.3
9.2 a viii	Procedures for the investigation of archaeological relics, objects and/or sites (where relevant), prior to works commencing that would affect them	Section 7.5
9.2 a ix	Details for the short and / or long-term management of objects, archaeological artefacts and / or movable heritage	Section 1.1
9.2 a x	Archaeological management plans for both Aboriginal and non-Aboriginal archaeology	Section 1.1
9.2 a xi	Details of management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity)	Section 1.1
9.2 a xii	Procedures for unexpected heritage finds, including procedures for dealing with human remains consistent with the Sydney Metro procedures	Section 1.1
9.2 a xiii	Heritage monitoring requirements	Section 8.3
9.2 a xiv	Compliance record generation and management	Section 8.3
9.2b	The Contractor's regular inspections will include checking of heritage mitigation measures	Section 8.3
9.2c	Compliance records will be retained by the Contractor. These will include:	Section 8.3
	i. Inspections undertaken in relation to heritage management measures	
	ii. Updated salvage registers	Section 8.3
	iii. Archival recordings undertaken of any heritage item	Section 8.3
	iv. Unexpected finds and stop work orders	Section 8.3
	v. Records of any impacts avoided or minimised through design or construction methods	Section 8.3

Attachment 2 – Unexpected Finds Procedure



Sydney Metro Unexpected Heritage Finds Procedure

[SM-18-00105232]

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Author/Document owner
System Owner:	IMS element owner (generally a member of the Executive)
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1. Purpose

This procedure is applicable to the Sydney Metro program of works including major projects delivered under Critical State Significant Infrastructure Planning Approvals (CSSI), early CSSI minor and enabling works and works that are subject to the NSW Heritage Act (1977) including s57/139 and s60/140 exemptions and permit approvals.

This procedure has been prepared for Sydney Metro programs to provide a method for managing unexpected heritage items (both Aboriginal and non-Aboriginal) that are discovered during preconstruction (pre-Construction Heritage Manage Plan approval), construction phases (post Construction Heritage Manage Plan approval) and for works subject to the NSW Heritage Act (1977).

An ‘unexpected heritage find’ can be defined as any unanticipated archaeological discovery, that has not been previously assessed or is not covered by an existing approval under the Heritage Act 1977 (Heritage Act) or National Parks and Wildlife Act 1974 (NPW Act).

In NSW, there are strict laws to protect and manage heritage objects and relics. As a result, appropriate heritage management measures need to be implemented to minimise impacts on heritage values; ensure compliance with relevant heritage notification and other obligations; and to minimise the risk of penalties to individuals, Sydney Metro and its contractors. This procedure includes Sydney Metro’s heritage notification obligations under the Heritage Act, NPW Act and the Coroner’s Act 2009 and the requirements of the conditions of approval (CoA) issued by NSW Department of Planning and Environment.

Note that a Contractor must not amend the Sydney Metro Unexpected Finds Procedure without the prior approval of Sydney Metro.

It should be noted that this procedure must be read in conjunction with the relevant CSSI conditionals of approval (if applicable), the contract documents and other plans including the Sydney Metro Exhumation Management Plan and procedures developed by the contractor during the delivery of the Sydney Metro works.

1.1. Legislation that does not apply

The following authorisations are not required for Sydney Metro approved Critical State Significant Infrastructure (and accordingly the provisions of any Act that prohibits an activity without such an authority do not apply):

- Division 8 of Part 6 of the Heritage Act 1977 does not apply to prevent or interfere with the carrying out of approved State significant infrastructure.
- An approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977,
- An Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974,

This document provides relevant background information in Section 4, followed by the technical procedure in Sections 6 and 7. Associated guidance referred to in the procedure can be found in Appendices 1-6.

2. Scope

Despite earlier investigation, unexpected heritage items may still be discovered during works on a Sydney Metro site. When this happens, this procedure must be followed. This procedure provides direction on when to stop work, where to seek technical advice and how to notify the regulator, if required.

This procedure **applies to**:

- the discovery of any unexpected heritage item, relic or object, where the find is not anticipated in an approved Archaeological Assessment Design Report (AARD) or Archaeological Method Statements (AMS) that are prepared as part of the planning approval for that project.

This procedure must be followed by all Sydney Metro staff, contractors, subcontractors or any person undertaking works for Sydney Metro. It includes references to some of the relevant legislative and regulatory requirements, but is not intended to replace them.

This procedure **does not apply** to:

- The discovery and disturbance of heritage items as a result of investigations being undertaken in accordance with the Office of Environment and Heritage’s (OEH) *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW 2010*¹; an Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act; or a permit approval issued under the Heritage Act.
- the discovery and disturbance of heritage items as a result of construction related activities, where the disturbance is permissible in accordance with an AHIP; or an approval issued under the Heritage Act or CSSI /CSSD planning approval;

3. Definitions

All terminology in this procedure is taken to mean the generally accepted or dictionary definition with the exception of the following terms which have a specifically defined meaning:

	Definitions
AHIP	Aboriginal Heritage Impact Permit
Aboriginal object	An Aboriginal object is any deposit, object or material evidence (not being a handcraft made for sale) relating to the Aboriginal habitation of the area, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains. An Aboriginal object may include a shell midden, stone tools, bones, rock art, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps.
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CSSD	Critical State Significant Development
CSSI	Critical State Significant Infrastructure
EP&A Act	NSW Environmental Planning and Assessment Act 1979
Excavation	A person that complies with the Heritage Council of NSW’s Criteria for Assessment of

¹ An act carried out in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* as published by the Department in the Gazette on 24 September 2010 is excluded from the definition of **harm** an object or place in section 5 (1) of the NPW Act.

Director	Excavation Directors (July 2011) to oversee and advise on matters associated with historic archaeology. Note this applies to a specific project/program and requires consultation and/or approval by OEH.
Heritage Act	NSW <i>Heritage Act 1977</i>
NPW Act	NSW <i>National Parks and Wildlife Act 1974</i>
OEH	Office of Environment and Heritage
SM	Sydney Metro
Relic (non-Aboriginal heritage)	<p>A relic means any deposit, artefact, object or material evidence that:</p> <ul style="list-style-type: none"> a) relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and b) is of State or local significance. <p>A relic may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse.</p>
TfNSW	Transport for New South Wales
Work (non-Aboriginal heritage)	Archaeological features such as historic utilities or buried infrastructure that provide evidence of prior occupations such as former rail or tram tracks, timber sleepers, kerbing, historic road pavement, fences, culverts, historic pavement, buried retaining walls, cisterns, conduits, sheds or building foundations, but are also subject to assessment by the Excavation Director to determine its classification

4. Types of unexpected heritage items and corresponding statutory protections

The roles of project, field and environmental personnel (including construction contractors) are critical to the early identification and protection of unexpected heritage items.

Appendix 1 illustrates the wide range of heritage discoveries found on Sydney Metro projects and provides a useful photographic guide. Subsequent to confirmation of a heritage discovery it must then be identified and assessed by Excavation Director. An ‘unexpected heritage item’ means any unanticipated discovery of an actual or potential heritage item, for which Sydney Metro does not have approval to disturb² and/or have an existing management process in place.

These discoveries are categorised as either:

- (a) Aboriginal objects
- (b) Historic (non-Aboriginal) heritage items
- (c) Human skeletal remains.

The relevant legislation that applies to each of these categories is described below and is also addressed in the Sydney Metro Exhumation Management Plan).

4.1. Aboriginal objects

The NPW Act protects Aboriginal objects which are defined as:

² Disturbance is considered to be any physical interference with the item that results in it being destroyed, defaced, damaged, harmed, impacted or altered in any way (this includes archaeological investigation activities).

“any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains”³.

Examples of Aboriginal objects include stone tool artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

IMPORTANT!

All Aboriginal objects, regardless of significance, are protected under law.

If any impact is expected to an Aboriginal object, an AHIP is usually required from OEH. Also, when a person becomes aware of an Aboriginal object they must notify the Director-General of OEH about its location⁴. Assistance on how to do this is provided in Section 7 (Step 5).

4.2. Historic heritage items

Historic (non-Aboriginal) heritage items may include:

- Archaeological ‘relics’
- Other historic items (i.e. works, structures, buildings or movable objects).

4.2.1. Archaeological relics

The Heritage Act protects *relics* which are defined as:

“any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance”⁵.

Relics are archaeological items of local or state significance which may relate to past domestic, industrial or agricultural activities in NSW, and can include bottles, remnants of clothing, pottery, building materials and general refuse.

IMPORTANT!

All relics are subject to statutory controls and protections.

If a relic is likely to be disturbed, a heritage approval is usually required from the NSW Heritage Council⁶. Also, when a person discovers a relic they must notify the NSW Heritage Council of its location⁷.

4.2.2. Other historic items

Some historic heritage items are not considered to be ‘relics’, but are instead referred to as works, buildings, structures or movable objects. Examples of these items that may be encountered include culverts, historic pavements, retaining walls, tramlines, rail tracks, timber sleepers, cisterns, fences, sheds, buildings and conduits. Although an approval under the Heritage Act may not be required to disturb these items, their discovery must be managed in accordance with this procedure.

³ Section 5(1) NPW Act.

⁴ This is required under section 89(A) of the NPW Act and applies to all Sydney Metro projects.

⁵ Section 4(1) Heritage Act.

⁷ This is required under section 146 of the Heritage Act and applies to all Sydney Metro projects.

As a general rule, an archaeological relic requires discovery or examination through the act of excavation. For an unexpected find an archaeological excavation permit under section 140 of the Heritage Act may be required to do this. In contrast, ‘other historic items’ either exist above the ground surface (e.g. a shed), or they are designed to operate and exist beneath the ground surface (e.g. a culvert).

4.3. Human skeletal remains

Also refer to Sydney Metro Exhumation Management Plan for a more detailed explanation of the approval processes.

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on ancestry of the individual (Aboriginal or non-Aboriginal) and burial context (archaeological or non-archaeological). Remains are considered to be archaeological when the time elapsed since death is suspected of being 100 years or more. Depending on ancestry and context, different legislation applies.

As a simple example, a pre-European settlement archaeological Aboriginal burial would be protected under the NPW Act, while a historic (non-Aboriginal) archaeological burial within a cemetery would be protected under the Heritage Act. For a non-Aboriginal archaeological burial, the relevant heritage approval and notification requirement described in Section 3.1 would apply. In addition to the NPW Act, finding Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under section 20(1) of the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth).

IMPORTANT!

All human skeletal remains are subject to statutory controls and protections.

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently.

However, where it is suspected that less than 100 years has elapsed since death, the human skeletal remains come under the jurisdiction of the State Coroner and the Coroners Act 2009 (NSW). Such a case would be considered a ‘reportable death’ and under legal notification obligations set out in section 35(2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old⁸ regardless of ancestry (i.e. both Aboriginal and non-Aboriginal remains). Public health controls may also apply.

Guidance on what to do when suspected human remains are found is provided in Appendix 5.

5. Legislative Requirements

Table 1 identifies some of the relevant legislation/regulations for the protection of heritage and the management of unexpected heritage finds in NSW. It should be noted that significant

⁸ Under section 19 of the *Coroners Act 2009*, the coroner has no jurisdiction to conduct an inquest into reportable death unless it appears to the coroner that (or that there is reasonable cause to suspect that) the death or suspected death occurred within the last 100 years.

penalties exist for breaches of the listed legislation as a result of actions that relate to unauthorised impacts on heritage items. Further, it is noted that heritage that has been assessed and is being managed in accordance with relevant statutory approvals(s) is exempt from these offences.

To avoid breaches of legislation, it is important that Sydney Metro and its contractors are aware of their statutory obligations under relevant legislation and that appropriate control measures are in place to ensure that unexpected heritage items are appropriately managed during construction. Contractors/Alliances will need to ensure that they undertake their own due diligence to identify any other legislative requirements that may apply for a given project.

Table 1 Legislation and guidelines for management of unexpected heritage finds

Relevant Requirement	Objectives and offences
Environmental Planning and Assessment Act 1979 (EP&A Act)	Section 115ZB Giving of approval by Minister to carry out a project.
Environmental Planning and Assessment Act 1979 (EP&A Act)	Requires heritage to be considered within the environmental impact assessment of projects. This guideline is based on the premise that an appropriate level of Aboriginal and non-Aboriginal cultural heritage assessment and investigations and mitigation have already been undertaken under the relevant legislation, including the EP&A Act, during the assessment and determination process. It also assumes that appropriate mitigation measures have been included in the conditions of any approval.
Heritage Act 1977 (Heritage Act)	The Heritage Act provides for the care, protection and management of heritage items in NSW. Under section 139, it is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by the Heritage Division of the OEH. Under the Act, a relic is defined as: <i>‘any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.’</i> A person must notify the Heritage Division of OEH, if a person is aware or believes that they have discovered or located a relic (section 146). Penalties for offences under the Heritage Act can include six months imprisonment and/or a fine of up to \$1.1million.

Relevant Requirement	Objectives and offences
<p>National Parks and Wildlife Act 1974 (NPW Act)</p>	<p>The NPW Act provides the basis for the care, protection and management of Aboriginal objects and places in NSW.</p> <p>An Aboriginal object is defined as: <i>‘any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains’.</i></p> <p>An ‘Aboriginal place’ is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture. An Aboriginal place does not have to contain physical evidence of occupation (such as Aboriginal objects).</p> <p>Under section 87 of the Act, it is an offence to harm or desecrate an Aboriginal object or place. There are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an AHIP and the permit’s conditions were not contravened. Defences and exemptions to the offence of harming an Aboriginal object or Aboriginal place are provided in section 87, 87A and 87B of the Act.</p> <p>A person must notify OEH if a person is aware of the location of an Aboriginal object.</p> <p>Penalties for some of the offences can include two years imprisonment and/or up to \$550,000 (for individuals), and a maximum penalty of \$1.1 million (for corporations).</p>

6. Unexpected heritage finds protocol

6.1. What is an unexpected heritage find?

An ‘unexpected heritage find’ can be defined as any unanticipated archaeological discovery that has not been identified during a previous assessment or is not covered by an existing permit under the Heritage Act. The find may have potential cultural heritage value, which may require some type of statutory cultural heritage permit or notification if any interference of the heritage item is proposed or anticipated.

The range of potential archaeological discoveries can include but are not limited to:

- remains of rail infrastructure including buildings, footings, stations, signal boxes, rail lines, bridges and culverts
- remains of other infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, conduits, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls
- artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes
- Archaeological human skeletal remains.

6.2. Managing unexpected heritage finds

In the event that an unexpected heritage find (the find) is encountered on a Sydney Metro site, the flowchart in Figure 1 must be followed. There are eight steps in the procedure. These steps are summarised in Figure 1 and explained in detail in Table 2.

Figure 1 Overview of steps to be undertaken on the discovery of an unexpected heritage item

IMPORTANT!

Sydney Metro may have approval to impact on certain heritage items during construction. If you think that you may have discovered a heritage item and you are unsure whether an approval is in place or not, **STOP** works and follow this procedure.

Table 2 Specific tasks to be implemented following the discovery of an unexpected heritage item

Step	Task	Responsibility	Guidance and tools
1	Stop work, protect item and inform the Excavation Director		
1.1	Stop all work in the immediate area of the item and notify the Project Manager	Contractor/ Supervisor	Appendix 1 (Identifying Unexpected Heritage items)
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. No work is to be undertaken within this zone until further investigations are completed and, if required, appropriate approvals are obtained. Inform all site personnel about the no-go zone.	Project Manager/ Contractor/ Supervisor	
1.3	Inspect, document and photograph the item.	Archaeologist and or Excavation Director	Appendix 2 (Unexpected Heritage Item Recording Form) Appendix 3 (Photographing Unexpected Heritage items)
1.4	Is the item likely to be bone? If yes , follow the steps in Appendix 4 – 'Uncovering bones'. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site. Also refer to the Sydney Metro Exhumation Management Plan If no , proceed to next step.	Excavation Director	Appendix 4 (Uncovering Bones)

Step	Task	Responsibility	Guidance and tools
1.5	Inform the Excavation Director of the item and provide as much information as possible, including photos and completed form (Appendix 2). Where the project has a Sydney Metro Environmental Manager, the Environmental Manager should be involved in the tasks/process.	Contractors Project Manager	
1.6	Can the works avoid further disturbance to the item? Project Manager to confirm with Sydney Metros Environment Manager. Complete the remaining tasks in Step 1.	Contractors Project Manager	
1.7	Excavation Director and Sydney Metro Environmental Manager to advise the Project Manager whether Sydney Metro has approval to impact on the 'item'. Does Sydney Metro have an approval or permit to impact on the item? If yes , work may recommence in accordance with that approval or permit. There is no further requirement to follow this procedure. If no , continue to next step.	Contractors Project Manager	
1.8	Has the 'find' been damaged or harmed? If yes , record the incident in the Incident Management System Implement any additional reporting requirements related to the planning approval and CEMP, where relevant.	Contractors Project Manager, Excavation Director	
2	Contact and engage an archaeologist and/or an Aboriginal heritage consultant		
2.1	If an archaeologist and/or Aboriginal heritage consultant has been previously appointed for the project, contact them to discuss the location and extent of the item and arrange a site inspection, if required. The project CEMP may contain contact details of the archaeologist/Aboriginal heritage consultant. Where there is no project archaeologist engaged for the works engage a suitably qualified consultant to assess the find: if the find is a non-Aboriginal deposit, engage a suitably qualified and experienced archaeological consultant if the find is likely to be an Aboriginal object, engage an Aboriginal heritage consultant to assess the find.	Contractors Project Manager, Excavation Director	
2.2	If requested, provide photographs of the item taken during Step 1.3 to the archaeologist or Aboriginal heritage consultant.	Contractors Project Manager, Excavation Director	Appendix 3 (Photographing Unexpected Heritage items)

Step	Task	Responsibility	Guidance and tools
3	Preliminary assessment and recording of the find		
3.1	In a minority of cases, the archaeologist/Aboriginal heritage consultant may determine from the photographs that no site inspection is required because no heritage constraint exists for the project (e.g. the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'). Any such advice should be provided in writing (e.g. via email or letter with the consultant's name and company details clearly identifiable) to the Sydney Metro Project Manager.	Archaeologist/ Aboriginal heritage consultant/ Excavation Director	Proceed to Step 8
3.2	Arrange site access for the archaeologist/Aboriginal heritage consultant to inspect the item as soon as practicable. In the majority of cases a site inspection is required to conduct a preliminary assessment.	Contractors Project Manager, Excavation Director	
3.3	Subject to the archaeologist/Aboriginal heritage consultant's assessment, work may recommence at a set distance from the item. This is to protect any other archaeological material that may exist in the vicinity, which may have not yet been uncovered. Existing protective fencing established in Step 1.2 may need to be adjusted to reflect the extent of the newly assessed protective area. No works are to take place within this area once established.	Archaeologist/ Aboriginal heritage consultant Contractors Project Manager, Excavation Director	
3.4	The archaeologist/Aboriginal heritage consultant may provide advice after the site inspection and preliminary assessment that no heritage constraint exists for the project (e.g. the item is not a 'relic' or a 'heritage item' or an 'aboriginal item'. Any such advice should be provided in writing (e.g. via email or letter with the consultant's name and company details clearly identifiable) to the Metro Project Manager. Note that : a relic is evidence of past human activity which has local or State heritage significance. It may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse an Aboriginal object may include a shell midden, stone tools, bones, rock art or a scarred tree a "work", building or standing structure may include tram or train tracks, kerbing, historic road pavement, fences, sheds or building foundations.	Archaeologist/ Aboriginal heritage consultant/ Contractors Project Manager, Excavation Director	Proceed to Step 8 Refer to Appendix 1 (Identifying heritage items)

Step	Task	Responsibility	Guidance and tools
3.5	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). The archaeologist/Aboriginal heritage consultant can provide contacts for such specialist consultants.	Excavation Director Archaeologist	
3.6	Where the item has been identified as a 'relic' or 'heritage item' or an 'Aboriginal object' the archaeologist should formally record the item.	Archaeologist/ Aboriginal heritage consultant	
3.7	OEH (Heritage Division for non-Aboriginal relics and Planning and Aboriginal Heritage Section for Aboriginal objects) can be notified informally by telephone at this stage by the Sydney Metro Environmental Manager Any verbal conversations with regulators must be noted on the project file for future reference.	Contractors Project Manager, Excavation Director	
4	Section 4 not used		
5	Notify the regulator, if required.		
5.1	Based on the findings of the archaeological or heritage management plan and corresponding legislative requirements, is the find required to be notified to OEH and the Secretary? If no , proceed directly to Step 6 If yes , proceed to next step.	Sydney Metro Environmental Manager Excavation Director	
5.2	If notification is required, complete the template notification letter, including the archaeological/heritage management plan and other relevant supporting information and forward to the Sydney Metro Principal Manager Sustainability Environment and Planning (Program) for signature.	Sydney Metro Environmental Manager Excavation Director	Appendix 6 (Template Notification Letter)
5.3	Forward the signed notification letter to OEH and the Secretary. Informal notification (via a phone call or email) to OEH prior to sending the letter is appropriate. The archaeological or heritage management plan and the completed site recording form (Appendix 2) must be submitted with the notification letter (for both Aboriginal objects and non-Aboriginal relics). For Part 5.1 projects, the Department of Planning and Environment must also be notified.		

Step	Task	Responsibility	Guidance and tools
5.4	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form is to be kept on file and a copy sent to the Sydney Metro Project Manager.	Contractors Project Manager, Excavation Director	
6	Implement archaeological or heritage management plan		
6.1	Modify the archaeological or heritage management plan to take into account any additional advice resulting from notification and discussions with OEH.	Contractors Project Manager, Excavation Director	
6.2	Implement the archaeological or heritage management plan. Where impact is expected, this may include a formal assessment of significance and heritage impact assessment, preparation of excavation or recording methodologies, consultation with Registered Aboriginal Parties, obtaining heritage approvals etc., if required.	Contractors Project Manager, Excavation Director	
6.3	Where heritage approval is required contact the Sydney Metro Environment Manager for further advice and support material. Please note there are time constraints associated with heritage approval preparation and processing.	Contractors Project Manager, Excavation Director	
6.4	Assess whether heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning and Environment.	, Excavation Director/Sydney Metro Environmental Manager	
6.5	Where statutory approvals (or project approval modification) are required, impact upon relics and/or Aboriginal objects must not occur until heritage approvals are issued by the appropriate regulator.	Contractors Project Manager, Excavation Director	
6.6	Where statutory approval is not required but where recording is recommended by the archaeologist/Aboriginal heritage consultant, sufficient time must be allowed for this to occur.	Contractors Project Manager, Excavation Director	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material removed from site, where required. Interested third parties (e.g. museums, local Aboriginal land councils, or local councils) should be consulted on this issue. Contact the archaeologist or Aboriginal heritage consultant for advice on this matter, if required.	Contractors Project Manager, Excavation Director	
7	Section 7 Not Used		

Step	Task	Responsibility	Guidance and tools
8	Resume work		
8.1	Seek written clearance to resume project work from the project Excavation Director/Archaeologist/Aboriginal heritage consultant. Clearance would only be given once all archaeological excavation and/or heritage recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with the all relevant project/heritage approvals/determinations.	Contractors Project Manager, Excavation Director	
8.2	If required, ensure archaeological excavation/heritage reporting and other heritage approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.	Contractors Project Manager, Excavation Director	
8.3	Deleted		
8.4	If additional unexpected items are discovered this procedure must begin again from Step 1.	All	

7. Responsibilities

Table 3 Roles and Responsibilities

Role	Responsibility or role under this guideline
Contractor / Supervisor	Stop work immediately when an unexpected heritage find is encountered. Cordon off area until Environmental Manager /Excavation Director advises that work can recommence.
Contractor or Environment Manager	Manage the process of identifying, protecting and mitigating impacts on the 'find'. Liaise with Sydney Metro Project Manager and Environment Manager and assist the archaeologist/Aboriginal heritage consultant with mitigation and regulatory requirements. Complete Incident Report and review CEMP for any changes required. Propose amendments to the CEMP if any changes are required.
Contractor's or Project Heritage Advisor or Consultant	Provide expert advice to the Sydney Metro Environment Manager on 'find' identification, significance, mitigation, legislative procedures and regulatory requirements.
Environmental Representative	Independent environmental advisor engaged by Sydney Metro Ensures compliance with relevant approvals (new and existing).
Heritage Division of OEH	Regulate the care, protection and management of relics (non-Aboriginal heritage). Delegated authority for Heritage Council Issue excavation permits.

Role	Responsibility or role under this guideline
Registered Aboriginal Parties (RAPs)	Aboriginal people who have registered with Sydney Metro to be consulted about a proposed project or activity in accordance with the OEH <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010</i> .
Sydney Metro Environment Manager	Notify the Sydney Metro Principal Manager, Environmental Management of 'find' and manage Incident Reporting once completed by Environmental Manager.
Contractors Project Manager	Ensures all aspects of this procedure are implemented. Advise Contractor / Supervisor to recommence work if all applicable requirements have been satisfied and the Excavation Director /Project Archaeologist has approved recommend of work.

8. Seeking Advice

Advice on this procedure should be sought from the Sydney Metro Environment a Manager in the first instance. Contractors and alliance partners should ensure their own project environment managers are aware of and understand this procedure. Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from a suitably qualified and experienced archaeologist/Aboriginal heritage consultant.

9. Related documents and references

- Environmental Incident Classification and Reporting – 9TP-PR-105
- Guide to Environmental Control Map – 3TP-SD-015
- NSW Heritage Office (1998), *Skeletal remains: guidelines for the management of human skeletal remains*.
- Roads and Maritime Services (2015), *Standard Management Procedure Unexpected Heritage Items*.
- Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal remains*.
- Sydney Metro Exhumation Management Plan

10. List of appendices

The following appendices are included to support this procedure:

- Appendix 1: Examples of finds encountered during construction works
- Appendix 2: Unexpected Heritage Item Recording Form
- Appendix 3: Photographing Unexpected Heritage Items
- Appendix 4: Uncovering Bones
- Appendix 5: Archaeological Advice Checklist
- Appendix 6: Template Notification Letter

11. Document history

Version	Date of approval	Notes
1.1		Incorporates ER comments 21/06/17
1.2		Amends p13 step 8 reference to s146 added
1.3		Incorporates Planning Mods 1-4 including amended CoA E20
1.4		Incorporates ER comments 21/03/18
2.0		Removes SSI 15-7400 COA reference

Appendix 1: Examples of finds encountered during construction works



Photo 1 - Aboriginal artefacts found at the Wickham Transport Interchange, 2015



Photo 2 – Aboriginal artefacts (shell material) found at the Wickham Transport Interchange, 2015



Photo 3 1840s seawall and 1880s retaining wall uncovered at Balmain East, 2016



Photo 4 Sandstone pavers uncovered at Balmain East, 2016



Photo 5 - Platform structure at Hamilton Railway Station classified as a 'work' by the project archaeologist - Wickham Transport Interchange project, 2015

Photo 6 - Platform structure at Hamilton Railway Station classified as a 'work' by the project archaeologist - Wickham Transport Interchange project, 2015



Photo 7 - Sandstone flagging and cesspit - Wynyard Walk project, 2014



Photo 8 - Chinese Ming Dynasty pottery and English porcelain/pottery dating back to early 19th century - Wynyard Walk project, 2014



Photo 9 - Pottery made by convict potter Thomas Ball during the early settlement - Wynyard Walk project, 2014

The following images, obtained from the Roads and Maritime Services' *Standard Management Procedure for Unexpected Heritage items 2015*, can be used to assist in the preliminary identification of potential unexpected items during construction and maintenance works.



Photo 10 - Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); Linear archaeological feature with post holes (Hume Highway Duplication), Animal bones (Hume Highway Bypass at Woomargama); Cut wooden stake; Glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area) (RMS, 2015).

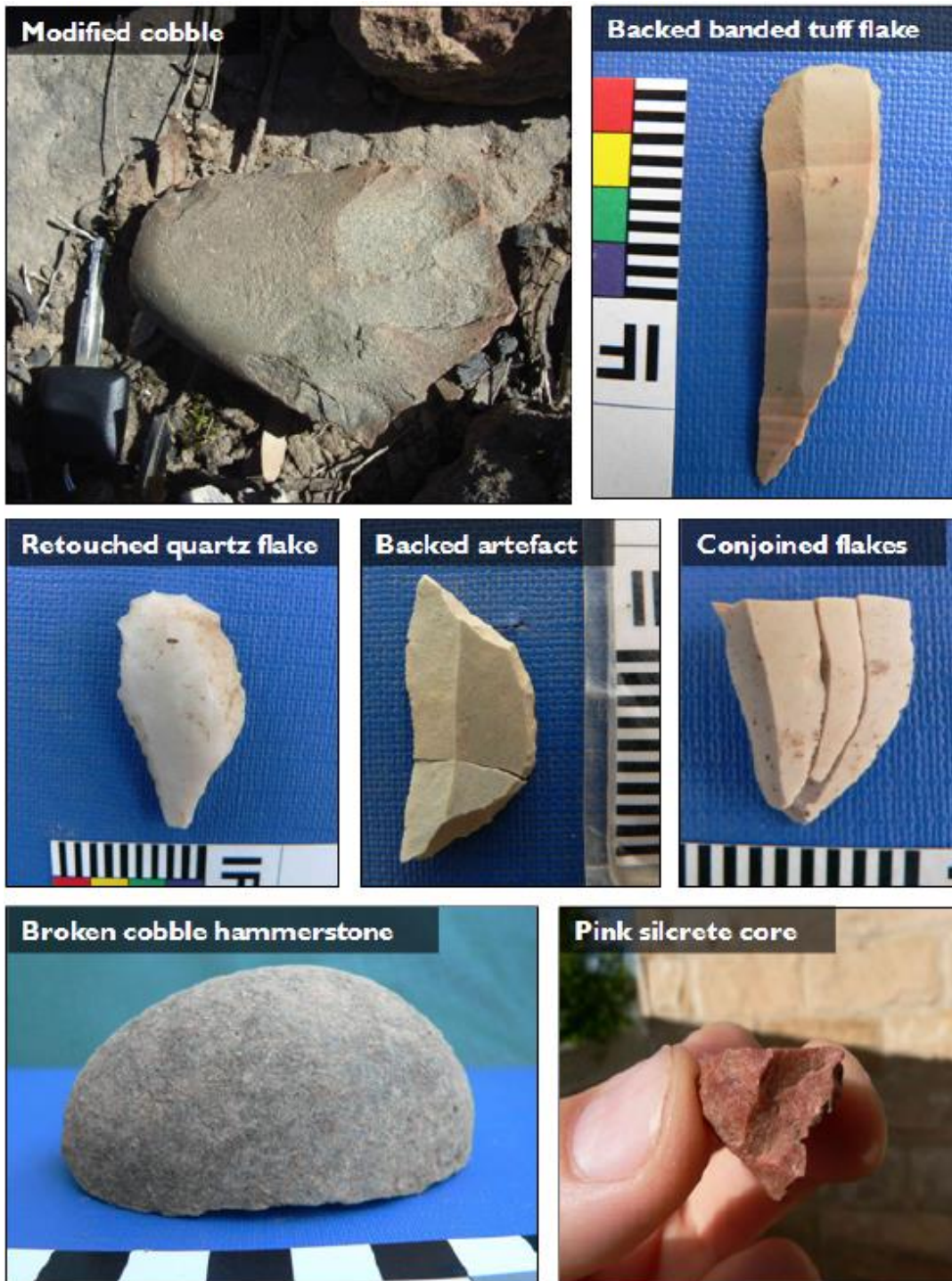


Photo 11 - Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); Linear archaeological feature with post holes (Hume Highway Duplication), Animal bones (Hume Highway Bypass at Woomargama); Cut wooden stake; Glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area) (RMS, 2015).

Appendix 2 - Unexpected heritage item recording form

Example of unexpected heritage item recording form:

This form is to be completed Excavation Director on the discovery of an archaeological heritage item during construction or maintenance works			
Date:		Recorded by:	
		(include name and position)	
Project name:			
Description of works being undertaken:			
Description of exact location of item			
Description of item found <i>(What type of item is it likely to be? Tick the relevant boxes).</i>			
A. A relic	<input type="checkbox"/>	A 'relic' is evidence of a past human activity relating to the settlement of NSW with local or state heritage significance. A relic might include bottle, utensils, plates, cups, household items, tools, implements, and similar items	
B. A 'work', building or structure'	<input type="checkbox"/>	A 'work' can generally be defined as a form infrastructure such as track or rail tracks, timber sleepers, a culvert, road base, a bridge pier, kerbing, and similar items	
C. An Aboriginal object	<input type="checkbox"/>	An 'Aboriginal object' may include stone tools, stone flakes, shell middens, rock art, scarred trees and human bones	
D. Bone	<input type="checkbox"/>	Bones can either be human or animal remains. Remember that you must contact the local police immediately by telephone if you are certain that the bone(s) are human remains.	
E. Other	<input type="checkbox"/>		
Provide a short description of the item <i>(E.g. metal rail tracks running parallel to the rail corridor. Good condition. Tracks set in concrete, approximately 10 cm below the current ground surface).</i>			

(Uncontrolled when printed)

<p>Sketch <i>(Provide a sketch of the item's general location in relation to other road features so its approximate location can be mapped without having to re-excavate it. In addition, please include details of the location and direction of any photographs of the item taken)</i></p>			
<p>Action taken (Tick either A or B)</p>			
<p>A. Unexpected item would not be further impacts on by the works</p>	<input type="checkbox"/>	<p>Describe how works would avoid impact on the item. (E.g. the rail tracks would be left in situ and recovered with paving).</p>	
<p>B. Unexpected item would be further impacted by the works</p>	<input type="checkbox"/>	<p>Describe how works would impact on the item. (E.g. milling is required to be continued to a depth of 200 mm depth to ensure the pavement requirements are met. Rail tracks would need to be removed.)</p>	
<p>Excavation Director</p>		<p>Signature</p>	
		<p>Signature</p>	

Important

It is a statutory offence to disturb Aboriginal objects and historic relics (including human remains) without an approval. All works affecting objects and relics must cease until an approval is sought.

Approvals may also be required to impact on certain works.

Appendix 3 - Photographing unexpected heritage items

Photographs of unexpected items in their current context (*in situ*) may assist archaeologists/Aboriginal heritage consultants to better identify the heritage values of the item. Emailing good quality photographs to specialists can allow for better quality and faster heritage advice. The key elements that must be captured in photographs of the item include its position, the item itself and any distinguishing features. All photographs must have a scale (ruler, scale bar, mobile phone, coin etc.) and a note describing the direction of the photograph.

Context and detailed photographs

It is important to take a general photograph (Figure 1) to convey the location and setting of the item. This will add value to the subsequent detailed photographs also required (Figure 2).

Removal of the item from its context (e.g. excavating from the ground) for photographic purposes is not permitted.

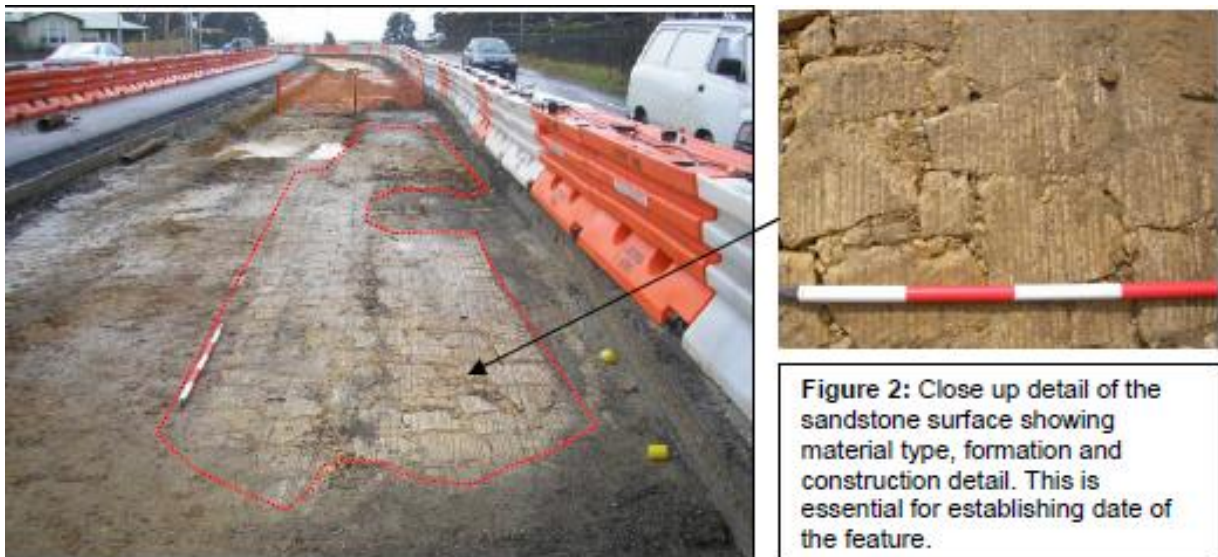


Figure 1: Telford road uncovered on the Great Western Highway (Leura) in 2008 (RMS, 2015).

Photographing distinguishing features

Where unexpected items have a distinguishing feature, close up detailed photographs must be taken of these features, where practicable. In the case of a building or bridge, this may include diagnostic details architectural or technical features. See Figures 3 and 4 for examples.



Figure 3: Ceramic bottle artefact with stamp.



Figure 4: Detail of the stamp allows 'Tooth & Co Limited' to be made out. This is helpful to a specialist in gauging the artefact's origin, manufacturing date and likely significance.

Photographing bones

The majority of bones found on site will those of be recently deceased animal bones often requiring no further assessment (unless they are in archaeological context). However, if bones are human, the police must be contacted immediately (see Appendix 6 for detailed guidance). Taking quality photographs of the bones can often resolve this issue quickly. The project archaeologist can confirm if bones are human or non-human if provided with appropriate photographs.

Ensure that photographs of bones are not concealed by foliage (Figure 5) as this makes it difficult to identify. Minor hand removal of foliage can be undertaken as long as disturbance of the bone does not occur. Excavation of the ground to remove bone(s) should not occur, nor should they be pulled out of the ground if partially exposed.

Where sediment (adhering to a bone found on the ground surface) conceals portions of a bone (Figure 6) ensure the photograph is taken of the bone (if any) that is not concealed by sediment.



Figure 5: Bone concealed by foliage.



Figure 6: Bone covered in sediment

Ensure that all close up photographs include the whole bone and then specific details of the bone (especially the ends of long bones, the *epiphysis*, which is critical for species identification). Figures 7 and 8 are examples of good photographs of bones that can easily

be identified from the photograph alone. They show sufficient detail of the complete bone and the epiphysis.



Figure 7: Photograph showing complete bone.



Figure 8: Close up of a long bone's epiphysis.

Appendix 4 - Uncovering bones

This appendix provides advice regarding:

- what to do on first discovering bones
- the range of human skeletal notification pathways
- additional considerations and requirements when managing the discovery of human remains.

1. First uncovering bones

Refer to the Sydney Metro Exhumation Management Plan

Stop all work in the vicinity of the find. All bones uncovered during project works should be **treated with care and urgency** as they have the potential to be human remains. The bones must be identified as either human or non-human as soon as possible by a qualified forensic or physical anthropologist.

On the very rare occasion where it is immediately obvious from the remains that they are human, the Project Manager (or a delegate) should **inform the police by telephone** prior to seeking specialist advice. It will be obvious that it is human skeletal remains where there is no doubt, as demonstrated by the example in Figure 1⁹. Often skeletal elements in isolation (such as a skull) can also clearly be identified as human. Note it may also be obvious that human remains have been uncovered when soft tissue and/or clothing are present.

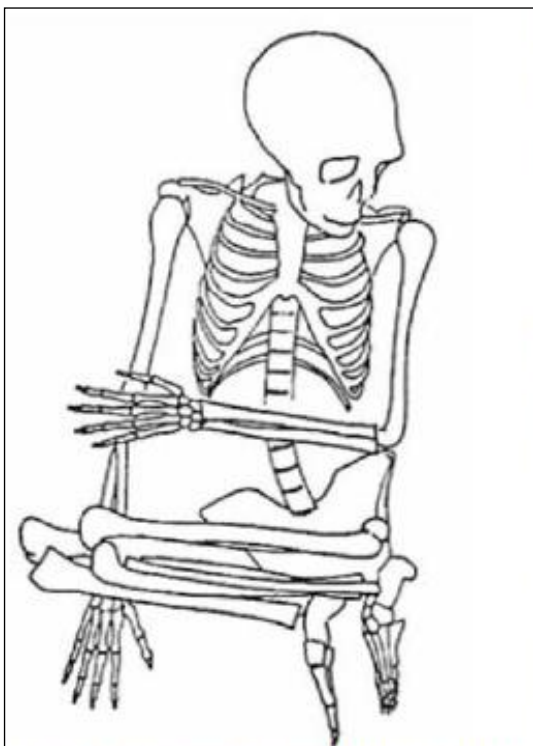


Figure 1: Schematic of a complete skeleton that is 'obviously' human¹².



Figure 2: Disarticulated bones that require assessment to determine species.

⁹ After Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal Remains*: 17

This preliminary phone call is to let the police know that a specialist skeletal assessment to determine the approximate date of death which will inform legal jurisdiction. The police may wish to take control of the site at this stage. If not, a forensic or physical anthropologist must be requested to make an on-site assessment of the skeletal remains.

Where it is not immediately obvious that the bones are human (in the majority of cases, illustrated by Figure 2), specialist assessment is required to establish the species of the bones. Photographs of the bones can assist this assessment if they are clear and taken in accordance with guidance provided in Appendix 3. Good photographs often result in the bones being identified by a specialist without requiring a site visit; noting they are nearly always non-human. In these cases, non-human skeletal remains must be treated like any other unexpected archaeological find.

If the bones are identified as human (either by photographs or an on-site inspection) a technical specialist must determine the likely ancestry (Aboriginal or non-Aboriginal) and burial context (archaeological or forensic). This assessment is required to identify the legal regulator of the human remains so **urgent notification** (as below) can occur.

Preliminary telephone or verbal notification by the archaeologist to the Sydney Metro Principal Manager Sustainability Environment and Planning (Program) is appropriate. This must be followed up later by a formal letter notification to the relevant regulator when a management plan has been developed and agreed to by the relevant parties.

2. Range of human skeletal notification pathways

The following is a summary of the different notification pathways required for human skeletal remains depending on the preliminary skeletal assessment of ancestry and burial context.

A. Human bones are from a recently deceased person (less than 100 years old).

Action

A police officer must be notified immediately as per the obligations to report a death or suspected death under s35 of the *Coroners Act 2009* (NSW). It should be assumed the police will then take command of the site until otherwise directed.

B. Human bones are archaeological in nature (more than 100 years old) and are likely to be **Aboriginal** remains.

Action

The OEH (Planning and Aboriginal Heritage Section) must be notified immediately. The Aboriginal Cultural Heritage Advisor must contact and inform the relevant Aboriginal community stakeholders who may request to be present on site.

C. Human bones are archaeological in nature (more than 100 years old) and likely to be non-Aboriginal remains.

Action

The OEH (Heritage Division) must be notified immediately

Figure 3 summarises the notification pathways on finding bones.

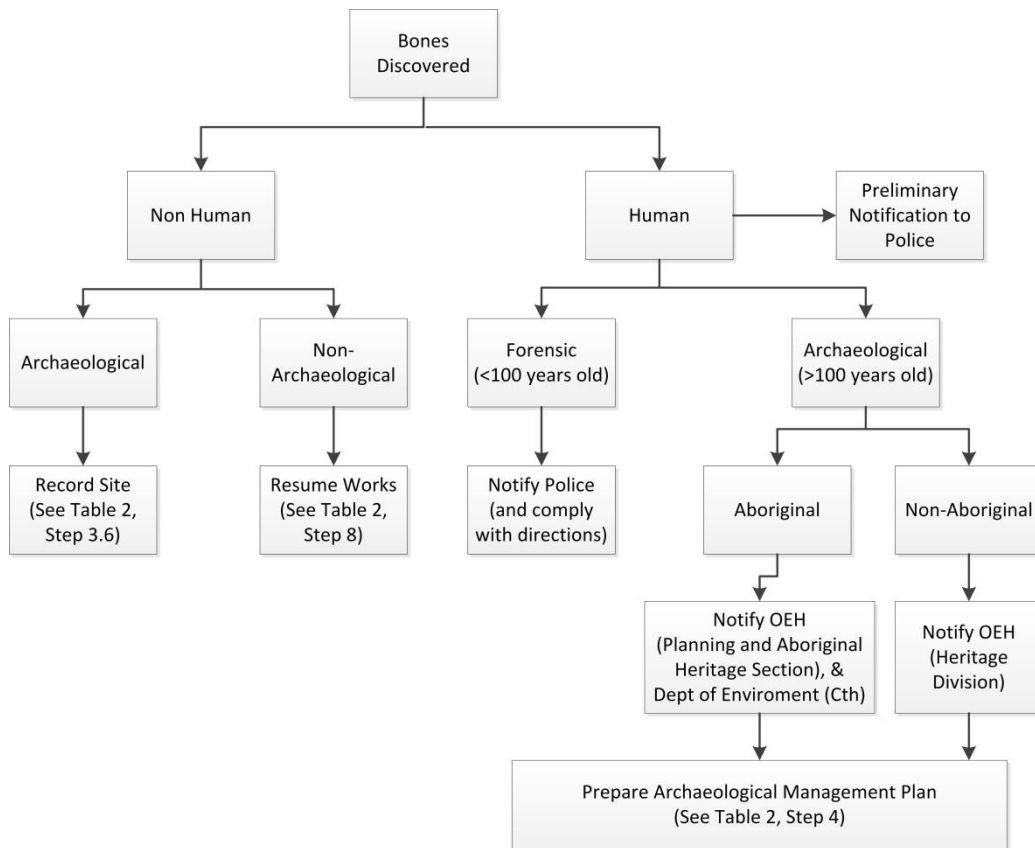


Figure 3 Overview of steps to be undertaken on the discovery of bones

After the appropriate verbal notifications (as described in 2B and 2C above), the Project Manager must proceed through the *Unexpected Heritage Items Exhumation Management Plan* (Step 4). It is noted that no *Exhumation Management Plan* is required for forensic cases (2A), as all future management is a police matter. Non-human skeletal remains must be treated like any other unexpected archaeological find and so must proceed to record the find as per Step 3.6.

3. Additional considerations and requirements

Uncovering archaeological human remains must be managed intensively and needs to consider a number of additional specific issues. These issues might include facilitating culturally appropriate processes when dealing with Aboriginal remains (such as repatriation and cultural ceremonies). Project Managers may need to consider overnight site security of any exposed remains and may need to manage the onsite attendance of a number of different external stakeholders during assessment and/or investigation of remains.

Project Managers may also be advised to liaise with local church/religious groups and the media to manage community issues arising from the find. Additional investigations may be required to identify living descendants, particularly if the remains are to be removed and relocated.

If exhumation of the remains (from a formal burial or a vault) is required, Project Managers should also be aware of additional approval requirements under the *Public Health Act 1991* (NSW). Specifically, Sydney Metro may be required to apply to the Director General of NSW

Department of Health for approval to exhume human remains as per Clause 26 of the *Public Health (Disposal of Bodies) Regulation 2002 (NSW)*¹⁰.

Further, the exhumation of such remains needs to consider health risks such as infectious disease control, exhumation procedures and reburial approval and registration. Further guidance on this matter can be found at the NSW Department of Health website.

In addition, due to the potential significant statutory and common law controls and prohibitions associated with interfering with a public cemetery, project teams are advised, when works uncover human remains adjacent to cemeteries, to confirm the cemetery's exact boundaries.

¹⁰ This requirement is in addition to heritage approvals under the *Heritage Act 1977*.

Appendix 5 - Archaeological/heritage advice checklist

The archaeologist/Aboriginal heritage consultant must advise the Sydney Metro Principal Manager Sustainability Environment and Planning (Program) of an appropriate archaeological or heritage management plan as soon as possible after an inspection of the site has been completed (see Step 4). An archaeological or heritage management plan can include a range of activities and processes, which differ depending on the find and its significance.

In discussions with the archaeologist/Aboriginal heritage consultant the following checklist can be used as a prompt to ensure all relevant heritage issues are considered when developing this plan. This will allow the project team to receive clear and full advice to move forward quickly. Archaeological and/or heritage advice on how to proceed can be received in a letter or email outlining all relevant archaeological and/or heritage issues.

	Required	Outcome/notes
Assessment and investigation		
• Assessment of significance	Yes/No	
• Assessment of heritage impact	Yes/No	
• Archaeological excavation	Yes/No	
• Archival photographic recording	Yes/No	
Heritage approvals and notifications		
• AHIP, section 140, section 139 exceptions etc.	Yes/No	
• Regulator relics/objects notification	Yes/No	
• Notification to Sydney Trains for s170 heritage conservation register	Yes/No	
• Compliance with CEMP or other project heritage approvals	Yes/No	
Stakeholder consultation		
• Aboriginal stakeholder consultation	Yes/No	
Artefact/heritage item management		
• Retention or conservation strategy (e.g. items may be subject to long conservation and interpretation)	Yes/No	
• Disposal strategy	Yes/No	
• Short term and permanent storage locations (interested third parties should be consulted on this issue).	Yes/No	
• Control Agreement for Aboriginal objects	Yes/No	

Appendix 6 - Template notification letter

Insert on TfNSW letterhead
Select and type date]
[Select and type reference number]

XXX

Manager, Conservation
Heritage Division, Office of Environment and Heritage
Locked Bag 5020
Parramatta NSW 2124

[Select and type salutation and name],

Re: Unexpected heritage item discovered during Sydney Metro activities.

I write to inform you of an unexpected [select: relic, heritage item or Aboriginal object] found during Sydney Infrastructure and Services construction works at [insert location] on [insert date] in accordance with the notification requirement under select: section 146 of the *Heritage Act 1977* (NSW). [Where the regulator has been informally notified at an earlier date by telephone, this should be referred to here].

NB: On finding Aboriginal human skeletal remains this letter must also be sent to the Commonwealth Minister for the Environment in accordance with notification requirements under section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth).

[Provide a brief overview of the project background and project area. Provide a summary of the description and location of the item, including a map and image where possible. Also include how the project was assessed under the *Environmental Planning and Assessment Act 1979* (NSW) (e.g. Part 5). Also include any project approval number, if available].

Sydney Metro [or contractor] has sought professional archaeological advice regarding the item. A preliminary assessment indicates [provide a summary description and likely significance of the item]. Please find additional information on the site recording form attached.

Based on the preliminary findings, Sydney Metro [or contractor] is proposing [provide a summary of the proposed archaeological/heritage approach (e.g. develop archaeological research design (where relevant), seek heritage approvals, undertake archaeological investigation or conservation/interpretation strategy). Also include preliminary justification of such heritage impact with regard to project design constraints and delivery program].

The proposed approach will be further developed in consultation with a nominated Office of Environment and Heritage staff member.

Should you have any feedback on the proposed approach, or if you require any further information, please do not hesitate to contact [Environment and Planning Project Manager] on (02) XXXX XXXX.

Yours sincerely

[Sender name]

Sydney Metro Principal Manager Sustainability Environment and Planning (Program) [Attach the archaeological/heritage management plan and site recording form]

Attachment 3 – Assessment of Significance for Identified Potential Heritage Items

Appendix 02 – Significance Assessment of Potential Heritage Items

In accordance with Condition C13(c) of the CoA, any potential heritage items to be impacted by the works are required to be assessed against the NSW Heritage Council's heritage criteria to determine their potential heritage significance. Technical Paper 3 – Non-aboriginal heritage contained within the EIS for the SMW project identified two potential heritage items within the Parramatta Metro Station construction site. Additionally, the Statement of Heritage Impacts prepared for Modification 2 – Clyde Stabling and Maintenance Facility (CSMF) (currently awaiting determination), identified one potential heritage item within the proposed modified construction site for CSMF construction site.

The following tables provide the significance assessments prepared for the three identified potential heritage items. This has been taken from the following reports:

- Artefact Heritage, Sydney Metro West Modification: Clyde Stabling and Maintenance Facility Technical Paper: Non-Aboriginal Heritage. Report prepared for Sydney Metro Authority November 2021
- Artefact Heritage, Sydney Metro West Technical Paper 3: Non-Aboriginal Heritage. Report prepared for Sydney Metro Authority, April 2020.

Clyde Stabling and Maintenance Facility Construction Site

Rosehill Railway Station

Rosehill Railway corridor is a disused trainline, with the tracks already removed as part of the Parramatta Light Rail works. The corridor includes two items of built heritage – Rosehill Railway Station and Rosehill Railway Station Footbridge.

Rosehill Railway Station is comprised of two platforms. The eastern platform was constructed in 1888 and is part of the original structures at the station. Measuring at approximately 300m, the platform is unusually long, and can accommodate 16-car trains. The eastern platform is the first platform to be constructed from concrete. It is backfilled with earth, and was originally finished with cinder, which was later resurfaced with a brick coping and concrete finish. The platform has been raised over the years since the mid-nineteenth century, with an additional four brick courses above the original concrete structure and early brick coping. The platform retains evidence of the original ramps and docks which allowed for end-loading of carriage or wagons on the platform. The platform has been partially demolished as a result of the Parramatta Light Rail works.

The western platform constructed c1959 is constructed in a steel truss structure with a reinforced concrete slab. The platform retains its integrity and is in good condition. The original station buildings and shelters on the platforms have been demolished. Contemporary corrugated metal shelters and timber furniture are located on both platforms.

Both platforms are connected by the Rosehill Railway Station Footbridge which was constructed in 1929 to connect the parking area to the west and Rosehill Gardens Racecourse to the east across the railway tracks. The footbridge is a steel riveted through Warren truss design on steel trestles and channel iron stair stringers. The footbridge is in good condition and retains a high level of integrity, having had only

minor modifications including the installation of a protective guard screen (c1999) to stop pedestrians climbing and jumping or falling from the trust system, and a new deck installed c1996.

Rosehill Railway Station Assessment of Significance	
Criterion	Assessment
Criterion (a)	<p>Rosehill Railway Station is historically associated with the development of the T6 Carlingford Railway line, as originally constructed by John Bennett (Clyde to Camellia) and Simpson (Camellia to Carlingford). Rosehill Railway Station is also historically significant as the train station developed to service Rosehill Gardens Racecourse, which John Bennett constructed in 1885. Rosehill Railway Station was also located at the intersection of the Carlingford Railway line and the Sandown Railway line which serviced the industrial area which developed from the subdivision of the Macarthur's Elizabeth Farm estate.</p> <p>Rosehill Railway Station meets the threshold for listing at the Local level</p>
Criterion (b)	<p>Rosehill Railway Station is associated with John Bennett, who was a well known son of a free-settler and built theatres on the goldfields in Victoria and NSW before moving to Sydney. He made his fortune through the theatre, especially through the importation of overseas actors and singer to Australia. In 1882, Bennett constructed the first part of the Carlingford Railway Line, known then as the Clyde line, servicing Clyde to Subiaco (now Camellia). In 1883 Bennett purchased land from the Elizabeth Farm subdivision and constructed the Rosehill Gardens Racecourse and recreational grounds. In 1885, Bennett constructed the Rosehill Railway Station to augment the existing Clyde line, and provide a direct service for visitors and patrons to his racing club.</p> <p>Rosehill Railway Station meets the threshold for listing at the Local level.</p>
Criterion (c)	<p>The eastern platform at the Rosehill Railway Station is significant as it represents the first major use of concrete for railway construction in NSW, and is the first platform to be constructed of concrete. The platform is also significant for its unusual length, which at 1000ft (approximately 300m) can accommodate 16-car trains.</p> <p>Rosehill Railway Station meets the threshold for listing at the Local level.</p>
Criterion (d)	<p>Rosehill Railway Station is significant for its association with the Australian and American Armed Forces and Medical Corp who used the Station in World War Two to transport the injured on Ambulance trains, and offload them onto Ambulance vehicles which were parked on the eastern platform to drive patients to Concorde Rehabilitation Hospital.</p> <p>The Station is also significant for its association with patrons of Rosehill Gardens Racecourse, as the primary public transport route and transit stop to access the racecourse on race days, with special trains parking alongside the eastern platform.</p> <p>Rosehill Railway Station meets the threshold for listing at the Local level.</p>
Criterion (e)	<p>Rosehill Railway Station is significant for its association with the Australian and American Armed Forces and Medical Corp who used the Station in World War Two to transport the injured on Ambulance trains, and offload them onto Ambulance vehicles which were parked on the eastern platform to drive patients to Concorde Rehabilitation Hospital.</p> <p>The Station is also significant for its association with patrons of Rosehill Gardens Racecourse, as the primary public transport route and transit stop to access the</p>

	<p>racecourse on race days, with special trains parking alongside the eastern platform.</p> <p>Rosehill Railway Station meets the threshold for listing at the Local level.</p>
Criterion (f)	<p>Rosehill Railway Station does not provide substantial evidence or possess uncommon, rare or endangered aspects of NSW's cultural or natural history.</p> <p>Rosehill Railway Station does not meet the threshold for the criteria for listing at either the State or Local level.</p>
Criterion (g)	<p>The eastern platform at Rosehill Railway Station is a good representative example of railway platforms and infrastructure which were constructed from concrete in the late 19th Century in NSW.</p> <p>Rosehill Railway Station meets the threshold for listing at the Local level</p>
Statement of Significance	<p>Rosehill Railway Station is an item of high heritage significance. The Station is historically significant for its association with John Bennett, the owner and developer of the Rosehill Gardens Racecourse, as well as the developer of the Clyde line, one of the two private lines which formed the Carlingford Railway Line. The Station is also significant for its role and use during World War Two where it was used as a transit transfer between Ambulance Trains and Ambulance vehicles, for the transportation of injured servicemen and women of the Australian and American armed forces.</p> <p>The eastern platform at Rosehill Railway Station is aesthetically and technically significant as the first major use of concrete for railway construction in NSW.</p>

Parramatta Metro Station Construction Site

200 George Street Parramatta

The building located at 220 Church Street within the Parramatta metro station construction site is a late 19th century commercial building, constructed circa 1880s. The two-storey building is designed in the Victorian Italianate style of rendered brick construction with rendered mouldings and decorative features, and is associated with the adjoining heritage listed commercial building 'Horse Parapet Façade and Potential Archaeological Site'. The current use of the building is commercial.

220 George Street Parramatta Assessment of Significance	
Criterion	Assessment
Criterion (a)	<p>The building at 220 Church Street Parramatta, as a Victorian Italianate style commercial building, is demonstrative of the consolidation of commercial and development activities in Parramatta during the time of its construction during the late 19th century, circa 1880s. The building is associated with and adjoins a group of local heritage listed commercial buildings on the corner of Church Street and Macquarie Street. This heritage item, known as 'Horse Parapet Façade and Potential Archaeological Site', is a landmark feature in the surrounding civic and commercial streetscape and is listed for its historical significance. The reason for the building at 220 Church Street being excluded from the LEP curtilage of the 'Horse Parapet Façade and Potential Archaeological Site' heritage item, to which it is historically related, is not known.</p> <p>The item has potential to meet the local significance threshold under this criterion.</p>
Criterion (b)	<p>The building at 220 Church Street does not appear to have any direct connections with prominent members of the local community or any ongoing historic</p>

	<p>associations with local commercial companies or activities. The building at 220 Church Street is associated historically and aesthetically with the adjoining 'Horse Parapet Façade and Potential Archaeological Site'.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
Criterion (c)	<p>The building at 220 Church Street is designed as a Victorian Italianate style building, and exhibits features that are typical of its type. The building retains its rendered brick façade with decorative mouldings and features, including decorative stringline, bracket decorations below window sills, Victorian mould arches above windows with decorative stops. While relatively intact, the ground floor of the building has been altered. The interior of the building was not accessed. The building is visually connected with the adjoining 'Horse Parapet Façade and Potential Archaeological Site', which is listed for its aesthetic significance. The building at 220 Church Street, along with the adjoining 'Horse Parapet Façade and Potential Archaeological Site' heritage item, provides a contribution to the historic streetscape quality of the surrounding area. The reason for the building at 220 Church Street being excluded from the LEP curtilage of the 'Horse Parapet Façade and Potential Archaeological Site' heritage item, to which it is aesthetically related, is not known.</p> <p>The item has potential to meet the local significance threshold under this criterion.</p>
Criterion (d)	<p>Whilst the building at 220 Church Street has some associations with the commercial development of Parramatta during the late 19th century, it does not appear to retain any substantial social significance.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
Criterion (e)	<p>Although the building at 220 Church Street possibly has some research potential to reveal information about former occupants and users of the site, it is unlikely this would provide insight that is not already available in historical records and documentation of the area.</p> <p>The item does not meet the local significance threshold under this criterion</p>
Criterion (f)	<p>There are numerous historic commercial buildings in the nearby streetscape around the building at 220 Church Street. These locally listed buildings are intact and fine examples of their type, and provide a strong contribution to the surrounding area. There are several Victorian and Victorian Italianate style shops along Church Street, which are heritage listed and are considered finer examples of their type. This includes the adjoining 'Horse Parapet Façade and Potential Archaeological Site' heritage item. As such, the building at 220 Church Street it is not considered to be rare at a local level.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
Criterion (g)	<p>The building at 220 Church Street is considered a representative example of its type. The Victorian Italianate style shop building features rendered brickwork with decorative mouldings and elements. These decorate features and opulent style are typical of the Victorian era buildings that were constructed in the area at the time, which demonstrate the commercial role of Parramatta during the 19th century.</p> <p>The item has potential to meet the local significance threshold under this criterion.</p>
Statement of Significance	<p>The building at 220 Church Street is a Victorian Italianate style shop building that is demonstrative of the commercial role of Parramatta during the 19th century. Constructed of rendered brick with decorative mouldings and features, the two storey building visually and stylistically relates to the adjoining locally listed 'Horse</p>

	Parapet Façade and Potential Archaeological Site' heritage item. Along with this heritage item, the building at 220 Church Street contributes to the character of the surrounding historic civic and commercial streetscape of the area. There are numerous heritage listed Victorian Italianate style shops in the vicinity along Church Street that are finer examples of this type. The building does not appear to retain any associations with the community or historic companies or activities. The building at 220 Church Street could reach the threshold of local heritage significance.
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48 Macquarie Street, Parramatta

The building at 48 Macquarie Street is within the Parramatta metro station construction site. The building is a mid 20th century Inter-War Moderne style commercial building. The three-storey building is situated on a corner block bound by Macquarie Street and United Lane, and is of painted brick construction with a curved façade. The current use of the building is commercial.

48 Macquaried Street Parramatta Assessment of Significance	
Criterion	Assessment
Criterion (a)	The building at 48 Macquarie Street Parramatta, as a Moderne style commercial building, is demonstrative of the continued growth of commercial development in Parramatta during the time of its construction during the mid 20th century. The building does not appear to retain any connections with companies or uses that would substantiate this historical association. The item does not meet the local significance threshold under this criterion.
Criterion (b)	The building at 48 Macquarie Street does not appear to have any direct connections with prominent members of the local community or any ongoing historic associations with local commercial companies or activities The item does not meet the local significance threshold under this criterion
Criterion (c)	The building at 48 Macquarie Street is designed as a Moderne style building, and exhibits features that are typical of its type. Inspired by the German Bauhaus movement, Moderne style buildings generally represent functional and clinical architecture. The building at 48 Macquarie Street retains its cream painted brick façade with an emphasised curving form, long horizontal lines and steel framed curved windows. While relatively intact, the ground floor of the building has been altered. The interior of the building was not accessed. The curved corner building on the intersection of Macquarie Street and United Lane provides a distinctive contribution and counterpoint to the historic streetscape quality of the surrounding area. An interior inspection of the building would be required to confirm its intactness and integrity, in order to confirm the building has a local level of aesthetic significance. The item potentially meets the local significance threshold under this criterion.
Criterion (d)	Whilst the building at 48 Macquarie Street has some associations with the commercial development of Parramatta during the mid 20th century, it does not appear to retain any substantial social significance. The item does not meet the local significance threshold under this criterion.
Criterion (e)	Although the building at 48 Macquarie Street possibly has some research potential to reveal information about former occupants and users of the site, it is unlikely

	<p>this would provide insight that is not already available in historical records and documentation of the area.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
Criterion (f)	<p>While there are numerous Art Deco style buildings in the vicinity of the building at 48 Macquarie Street, no other examples of the Moderne style (a late branch of the Art Deco style) were identified in the nearby streetscape. This increases the rarity of the building at 48 Macquarie Street within the historic building stock of Parramatta, although an interior inspection of the building would be required to confirm the degree of intactness and integrity of the building.</p> <p>The item potentially meets the local significance threshold under this criterion.</p>
Criterion (g)	<p>The building at 48 Macquarie Street is considered a representative example of its type. The commercial building features a distinctive curved corner façade with curved steel frame windows, long horizontal lines and a cream coloured brick façade. These design features are typical of the Moderne era buildings that were constructed at the time, which demonstrate the architectural development of Sydney in connection with evolving international architectural theory and design.</p> <p>The item potentially meets the local significance threshold under this criterion.</p>
Statement of Significance	<p>The building at 48 Macquarie Street is a Moderne style corner building that is demonstrative of the commercial role of Parramatta during the 20th century and evolving architectural theory and design in Sydney. Constructed of cream painted brick with curved and long horizontal features, the two storey building provides a distinctive contribution and counterpoint to the surrounding historic streetscape setting. While there are several nearby Art Deco style buildings along Church Street to the north, there are no Moderne style (a late branch of the Art Deco style) buildings in the vicinity. An inspection of the building would be required to confirm the aesthetic and degree of intactness and integrity. The building at 48 Macquarie Street has potential to meet the threshold of local heritage significance.</p>

Attachment 4 – Aboriginal Consultation Log

Consultation with the Aboriginal community was undertaken during the preparation of the EIS and associated Technical Studies, as well as with the preparation of the AHR 2021. This consultation was undertaken in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010*. The following table provides a log of the consultation with the Registered Aboriginal Parties undertaken during that period.

RAP Group	Contact Person
A1 Indigenous Services	Carolyn Hickey
Aboriginal Archaeological Services	Andrew Williams
Badu	Karia-Lea Bond
Biamanga	Janaya Smith
Bidiwal	Maria Stewart
Bilinga	Simalene Carriage
Boonunga	Paul Caple
Bullawaya	Fay Campbell
Bulling Gang	Whane Carberry
Butucarbin	Lowanna Gibson
Cullendulla	Corey Smith
Curwur Murre	Donald Parsona
Darug Aboriginal Landcare Inc	Des Dyer
Darug Custodian Aboriginal Corporation	Justine Coplin
Deerubbin Local Aboriginal Land Council	Steve Randall
Dharug	Wally Caines
Didge Ngunawal Clan	Paul Boyd and Lilly Carrol
Djanaba Gaxabara	Ben Walker
Djiringanj	John Walker
Elouera	James Sutton
Eora	Kahu Brennan
Gadigal Information Services Aboriginal Corporation	Lily Miles
Gadung	Kathy Burns
Gangangarra	Kim Carriage
Golangaya	Adreian Connelly
Goobah	Basil Smith
Gulla Gunar	Clayton Moore
Gunyyu	Mundarra Drew
Kamilaroi Yankuntatjara Working Group	Phil Khan
Merrigarn	Shawn Carroll

Minamunnung	Aaron Broad
Munyunga	Jason Bell
Muragadi	Anthony Johnson
Murra Bidgee Mullangari	Ryan Johnson
Murramarang	Roxanne Smith
Murrin	Tarlarra Te Kowhai
Murrumbul	Shane Saunders
Ngario	David Pittman
Ngunawal	Edward Stewart
Nundagurri	Thomas Tighe
Tharawal	John Stewart
Thauaria	Shane Davis
Thoorga Nura	Jon Carriage
Tocomwall	Danny Franks
University of Technology Sydney – Indigenous Health	Danielle Montgomery
Walbunja	Hika Te Kowhei
Walbunja Elders	Dean Scott
Walgalu	Ronald Stewart
Widescope Indigenous Group	Steve Hickey
Wimbalaya Nura	Ekarla Campbell
Wingikara	Izahya Clay
Wirambie	Vivian Carriage
Woronora Plateau Elders Council	Kayla Williamson
Yaxa Burra	Kevin Stewart-Campbell
Yerramurra	Nathan Walker-DAvis
Yulay Cultural Services	Arika Jalomaki
	Dallas Dodd
	Melita Link

Attachment 5 – Sydney Metro Exhumation Management Plan



Integrated
Management
System

Exhumation Management Plan

SM ES-PW-315/1.0

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Heritage Manager
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Status:	Final issued for Implementation
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1. Introduction

Sydney Metro have developed this Exhumation Management Plan (ExMP) to provide Sydney Metro and their contractors with guidance on managing the discovery of human skeletal remains during the course of the Sydney Metro program of works.

Sydney Metro is Australia's biggest public transport project. From the northwest, metro rail is being extended under Sydney Harbour, through new underground city stations and beyond to the south west. In 2024, Sydney will have 31 metro railway stations and a 66km standalone metro railway system, revolutionising the way Australia's biggest city travels (refer to Figure 1).

The purpose of this ExMP is to address relevant planning conditions of approval where required, by providing a clear and concise process to follow in the event of the discovery of potential human remains during project works.

The policy document may be used for the Sydney Metro program, although there is a focus on human remains at Central Station (associated with the former Devonshire Street cemetery). Potential for human remains had been identified in the Archaeological Assessment and Research Design (AARD) for Sydney Metro – City & Southwest Chatswood to Sydenham (Artefact Heritage, 2016) and subsequently presence of human remains has been confirmed during archaeological investigation for the Central Station Main Works (CSMW).

This ExMP will be reviewed prior to its implementation on any future Sydney Metro project that has potential to impact on a known cemetery or burial ground. A review may require amendment the ExMP to tailor additional controls or management procedures that are specific to the impacted cemetery or burial ground. In addition, the requirements of the relevant Planning Approval, including consultation on any amendment, will be assessed during the review of this ExMP prior to its implementation.

2. Methodology

This ExMP satisfies the relevant planning requirements, by outlining the procedure for the discovery and management of human remains within the Sydney Metro program. The ExMP addresses the following:

- Discussion of relevant legislation and guidelines, (e.g. Coroners Act 2009, Heritage Act 1977, Guidelines for the Management of Human Skeletal Remains and the Public Health Regulations 2012).
- Archaeological methodology for excavation of remains including processes for appropriately handling remains in accordance with the relevant guidelines.
- Preparation of a flow chart process to be used by contractors to respond to the discovery of suspected human remains.
- Post-exhumation management primarily around relocation, processing and long-term arrangements.
- Process for nomination of a physical anthropologist and temporary storage location.
- Process for additional analysis including DNA testing, isotope analysis and environmental sampling, and discussion on requirements for public involvement.



Figure 1: 2019 Sydney Metro Program Project overview and station locations

2.1. Overview of legislative requirements for dealing with human remains

The following section provides an overview of the various legislation that would apply to the discovery, management and relocation of human remains. A discovery of suspected human remains may be subject to different Acts and requirements, thereby triggering different notification pathways based on the specific circumstances involved.

For all areas other than Central Station within the CSMW boundary, the first step will always be to notify the NSW Police. Confirmation of the age (antiquity) and nature of the skeletal remains as well as the reasons for the disturbance will dictate which Act and provisions will be applicable. Note that provisions for Central Station would not require Police notification as it is confirmed by the Coroner that the remains are associated with the Devonshire Street Cemetery and would follow the requirements in Section 4, Central Station.

Although approval under the Heritage Act 1977 and the National Parks and Wildlife Act 1974, is not required for a Critical State Significant Infrastructure (CSSI) project, notification to the Heritage Council under s146 of the Heritage Act, and notification of an Aboriginal object under the National Parks and Wildlife Act is still required for discovery of archaeological human remains.

The provisions of the Coroners Act 2009 and Public Health Regulation 2012 apply under a CSSI approval. Compliance with this legislation would be fulfilled through adhering to the processes outlined in this plan, noting the special considerations for the CSMW site.

2.2. Discovery of human remains and forensic cases: Coroners Act 2009 (NSW)

For a discovery of suspected human remains less than 100 years old, the remains would come under the jurisdiction of the State Coroner and the Coroners Act 2009 (NSW). Such a case would be considered a 'reportable death' and, under legal notification obligations set out in s35 (2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old, regardless of ancestry (i.e. both Aboriginal and non-Aboriginal remains).

35 Obligation to report death or suspected death

(1) This section applies to any person who has reasonable grounds to believe that a death or suspected death of another person:

(a) is a reportable death or occurred in circumstances that would be examinable under Division 2 of Part 3.2, and

(b) has not been reported in accordance with subsection (2).

(2) A person to whom this section applies must report the death or suspected death concerned to a police officer, a coroner or an assistant coroner as soon as possible after becoming aware of the grounds referred to in subsection (1).

Maximum penalty (subsection (2)): 10 penalty units.

(3) A police officer to whom a death or suspected death is reported under this section is required to report the death or suspected death to a coroner or assistant coroner as soon as possible after the report is made.

(4) An assistant coroner to whom a death or suspected death is reported under this section is required to report the death or suspected death to a coroner as soon as possible after the report is made.

(5) A coroner to whom a death or suspected death is reported under this section is required to inform the State Coroner of the report as soon as practicable after the report is made.

2.3. Historical human remains: Heritage Act 1977 and Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977

The Heritage Act 1977 and Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977¹ apply to historic burials in New South Wales. It should be noted that the Guidelines are outdated in terms of the current statutory framework.

The definition of an archaeological 'relic' under the Heritage Act changed in 2009. A relic is no longer defined as an object of at least 50 years of age, but is now defined as an archaeological deposit or artefact that has heritage significance at a local or State level. New guidelines, Assessing Significance for Historical Archaeological Sites and 'Relics', have been endorsed by the Heritage Council and should be used to assess the level of heritage or archaeological significance of the remains. With reference to burial grounds, objects such as headstones, grave enclosures and grave goods, as well as buried human remains, may be a 'relic'.

¹ NSW Heritage Office, 1998.

If the project is approved as CSSI, an application to the NSW Heritage Council for an excavation permit (either Section 140 or Section 60) is not required. Notification to the NSW Heritage Council (or delegate) is required under the CSSI approval if unexpected relics of State significance or human remains are located.

2.4. Aboriginal human remains: National Parks and Wildlife Act 1974

The National Parks and Wildlife Act, administered by the NSW Office of Environment and Heritage (OEH), provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Aboriginal occupation of NSW) under Section 90 of the Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84.

Discovery of Aboriginal burials and/or human remains would be addressed in the projects Aboriginal Cultural Heritage Assessment Report (ACHAR). ACHARs would be prepared in accordance with the OEH 'Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation'², the OEH 'Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW'³, the OEH 'Aboriginal cultural heritage consultation requirements for proponents 2010'⁴, the OEH 'Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales'⁵.

If suspected human skeletal remains are uncovered at any time during the archaeological management program, the process outlined in this ExMP and detailed in the flow chart is to be followed. Management of the remains would be guided by consultation with the nominated Registered Aboriginal Parties (RAPs) for the project, in adherence to the ACHAR.

2.5. Exhumation of human remains: Public Health Regulation 2012 (NSW) and the NSW Health Policy Statement – Exhumation of human remains (2013)

Public Health Regulation 2012 and the NSW Health Policy Statement – Exhumation of human remains of the Public Health Regulation 2012 provides specific regulation for the exhumation of bodies in NSW.

Under Clause 70, an application for approval to exhume the remains of a dead person may be made to the Director-General via an approved form to the Director of the local Public Health Unit that acts on behalf of the Director-General of NSW Health. Exhumation is not to take place unless an authorised officer or a NSW Health member of staff is present at the exhumation (the grave may be excavated to the lid of the coffin but nothing must be disturbed until the arrival of the authorised officer) (Clause 72). An authorised officer must be present at the exhumation to ensure the correct interment is opened and that all of the remains are exhumed, and to enforce the protection of public health should this be necessary.

Sydney Metro would be required to apply to the Secretary of Health for approval to exhume human remains as per Clause 26 of the Regulations.

² NSW Department of Environment and Conservation, 2005.

³ OEH 2011.

⁴ Department of Environment, Climate Change and Water 2010.

⁵ OEH 2010.

Note that special consideration has been made for works at Central Station within the CSMW boundary that impact the former Devonshire Street Cemetery (Section 4).

2.6. NSW Ministry of Health Policy Statement – Exhumation of human remains (2013)

The NSW Ministry of Health Policy Statement on the exhumation of human remains provides the policy to be observed by Public Health Units located in Local Health Districts on receipt of an application to seek permission for approval of the exhumation of human remains under the Public Health Regulation 2012. Public Health Units (PHUs) of Local Health Districts (LHDs) in NSW facilitate the approval for an exhumation.

Under Clause 69 a person must not exhume a body unless the exhumation of the remains has been approved by the Director-General. An application for permission to exhume the remains of a deceased person is to be made to the Public Health Unit on the approved form which is contained at the [NSW Health website](#).

The required form is appended to this ExMP for ease of reference.

Note that the title of Director General of Health was replaced with the Secretary of Health when the Public Health Act and Public Health Regulation were amended. However, the Policy Directive PD2013-046 has not been amended to reflect this change.

2.7. Work Health and Safety Act 2011

The Work Health and Safety Act 2011 provisions apply to protect personnel involved in the exhumation procedure by creating and maintaining safe and healthy work practices and are enforced by WorkCover NSW. Graves, crypts and vaults could be considered to be confined spaces in some circumstances under health and safety legislation. More information on safe work practices is available at or by contacting SafeWork NSW via their website or directly.

Health and safety aspects of working with human remains should be considered. Generally, working with archaeological human skeletal remains requires no extra precautions to be taken beyond normal health and safety regulations. Once any necessary site health and safety precautions have been taken, the exhumation of human remains can proceed.

3. Procedure for the discovery, management and relocation of human remains

This procedure provides project managers, principal contractors and the project archaeologist/Excavation Director with advice on the steps to follow upon uncovering suspected human remains. Information on the potential for burials and human remains would be included in the general project induction for all personnel. The induction would include the procedure to manage these finds as set out in this ExMP.

3.1. Initial discovery of bones: What do we do?

To avoid doubt, all suspected bone items must be treated as potential human skeletal remains, and work around them must stop while they are protected and investigated as a matter of urgency.

1. Stop Work and preliminary notification

Upon the discovery of bone (suspected human remains), all work in the area of the find must stop and the remains must be confirmed as being human or not.

The Project Archaeologist/Excavation Director must be notified

Preliminary notification must be made to the NSW Police in compliance with Section 35 of the Coroners Act 2009 (also refer to special conditions for Central Station noted in section 4).

What?	When bones are uncovered at a site, all work in the area the find must stop immediately and the site must be secured.
Who?	The discoverer will immediately notify machinery operators so that no further disturbance of the remains will occur, as well as notify the foreman/site supervisor, principal contractor, project archaeologist/Excavation Director and Sydney Metro Environmental Manager). Preliminary notification to the NSW Police will be undertaken by the Sydney Metro Environmental Manager. Notification should provide verbal description of the remains and inform the police that consultation with technical specialists is being undertaken to confirm that the remains are human, as well as the burial context (archaeological or less than 100 years old, refer Step 2).
How?	Inform all site personnel of restricted access to the area of the discovery until further notice. Area must be fenced off (flagging or temporary exclusion fencing).
Actions	Notify site supervisor, principal contractor, project archaeologist / Excavation Director and Sydney Metro Environmental Manger of the find and protect the suspected remains until an initial assessment can be undertaken by a technical specialist. Preliminary notification to NSW Police.

2. Confirm human provenance

Skeletal remains could either be articulated and in a recognisable form of burial such as a coffin or common burial position of the body (e.g. supine, prone or flexed) or they could be disarticulated or fragmented remains. Within the boundaries of a known historic burial ground, there is a high probability of the remains being human. In a suspected forensic case (less than 100 years old), the remains may have clothing and/or human tissue. Disarticulated or fragmented bones are often uncovered and these may require specialist assessment to determine legal jurisdiction.

If suspected human remains are identified during the course of project works, preliminary notification must be made to the NSW Police in compliance with Section 35 of the Coroners Act 1999 (refer Step 1) (also refer to special conditions for Central Station noted in section 4, Central Station). NSW Police would be contacted immediately upon receipt of confirmation of human provenance (also refer to special conditions for Central Station noted in section 4).

What?	Confirmation that the remains are human, their burial context - whether they are forensic (less than 100 years) or archaeological (older than 100 years) and suspected ancestry (Aboriginal or non-Aboriginal).
Who?	Excavation Director and or Forensic or physical anthropologist, or archaeologist with specialist skills such as an osteoarchaeologist.
How?	Consultation could be undertaken as either an on-site inspection or via good quality photos sent to the nominated technical specialist of 1) the remains; and 2) the site general site location of the discovery.
Actions	Contact nominated technical specialists to confirm that the remains are: a) human, b) burial context (archaeological or forensic), and c) suspected ancestry (Aboriginal or non-Aboriginal). For the duration of the Sydney Metro project, the nominated technical specialists are: <ul style="list-style-type: none"> • Forensic Anthropologist – TBC by contractor for project area.

	<ul style="list-style-type: none"> Nominated Excavation Director – TBC by contractor for project area. <p>The archaeologist may be able to identify the nature of remains without input from the Forensic Anthropologist. The Forensic Anthropologist should be contacted as required.</p>
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3. Notification based on jurisdiction (forensic or archaeological)

Once confirmation is received from the technical specialist that the remains are of human origin, there are three possible statutory pathways to follow based on the assessment:

- **Forensic case (remains are less than 100 years old):** If it is determined by specialist assessment (Step 2) that the remains are forensic, the remains come under the jurisdiction of the State Coroner and the Coroners Act 2009. The NSW Police would likely secure the site and will advise on the procedure to be followed.
- **Archaeological – non-Aboriginal human remains (more than 100 years old).** Actions: Notification to OEH Heritage Division. Follow the Archaeology Exhumation Methodology as set out in Step 4.
- **Archaeological – suspected Aboriginal human remains (more than 100 years old).** The RAPs must be present where it is reasonably suspected that Aboriginal burials or human remains have been encountered. Recording of Aboriginal ancestral remains must be undertaken by, or be conducted under the direct supervision of a specialist. Actions: Notify RAPs and follow ACHAR Notification to OEH. Follow the Archaeology Exhumation Methodology as set out in Step 4.

4. Archaeological Exhumation Methodology

The following section provides the archaeological methodology for exhumation and the appropriate handling of human remains.

Securing the Site: The strategy for the excavation and removal of human remains must be sensitive to public opinion and ethical issues and exhumation activities should not be visible to the general public. The site may need to be screened off from public areas, not only with hoarding but also in some cases with a roof to screen the site off from overlooking buildings. At all times, human remains should be treated with respect and dignity. The perimeter of the excavation site should be demarcated by plastic tape or flagging, with only technical staff allowed within this area for the duration of exhumation activities.

The site should be protected from the elements including flooding, contamination with dust or debris, and other disturbance. These measures would be formulated by the Excavation Director in consultation with the contractor and Sydney Metro where required and may differ from site to site.

Excavation Director: Archaeological investigations are to be managed by a suitably qualified Excavation Director with experience in the historical archaeology of Sydney and management of human remains. For sites with potential for locally significant remains, the Excavation Director should meet the NSW Heritage Council criteria for locally significant archaeological sites. For sites with potential for State significant archaeology the Excavation Director should meet the NSW Heritage Council criteria for State significant archaeological sites.

Excavation and Recording: Exhumation and recording is to be undertaken in accordance with best practice forensic and Heritage Council guidelines. Prior to

removal, the remains should be fully recorded in situ to understand their surrounding archaeological context. This will include recording any disturbances to the burial, identification of bones present. In some cases, the deposit of bones may be a mixture of articulated and disarticulated remains. Care should be taken to distinguish articulated remains and to assess if they represent commingled individuals or disturbed remains belonging to one individual, and to record them accordingly.

Recording:

- A standard context recording system will be employed.
- Detailed survey and/or measured drawings would be prepared and include location of remains within the overall site (position of the body, the direction of the burial, noting any stratigraphic relationships with other archaeological features).
- Any associated artefacts (potential grave goods, burial furniture) would be recorded and collected by context for later analysis.
- Digital photography, in RAW format, using photographic scales and photo boards where appropriate. A photographic record of all phases of the work on site would be undertaken.
- Registers of contexts, photos, samples and drawings would be kept.

Excavation:

- Detection of the extent of the grave/remains (if disarticulated).
- Surface soils removed in excavation units of 100mm (site dependent) using small tools.
- Expose remains with soft paint brushes and pedestal the remains.
- Record position and depth of remains.
- Soil removed would be sieved through 3mm mesh to examine for teeth and bone fragments.
- Soil samples may be taken from the abdominal and/or chest areas of the body (articulated remains) to retrieve evidence of gallstones or worm infestations.
- Exhumation must be under the control of the Excavation Director, with the assistance of a Forensic Anthropologist if required. Exhumation permit/s, provided by NSW Ministry of Health may also require the presence of an authorised officer or a member of staff of the Ministry of Health.
- Further excavation of the bottom of the pit (grave) following removal to confirm the absence of further remains.

Relocation of bones:

- Removal and collection of skeletal remains to follow standard forensic practice of labelling.
- Remove remains from the ground systematically and place in plastic bags according to anatomical areas of the body.
- Bags should not be air-tight and should have ventilation holes to prevent deterioration of fragile skeletal material. Each bag should contain labels and

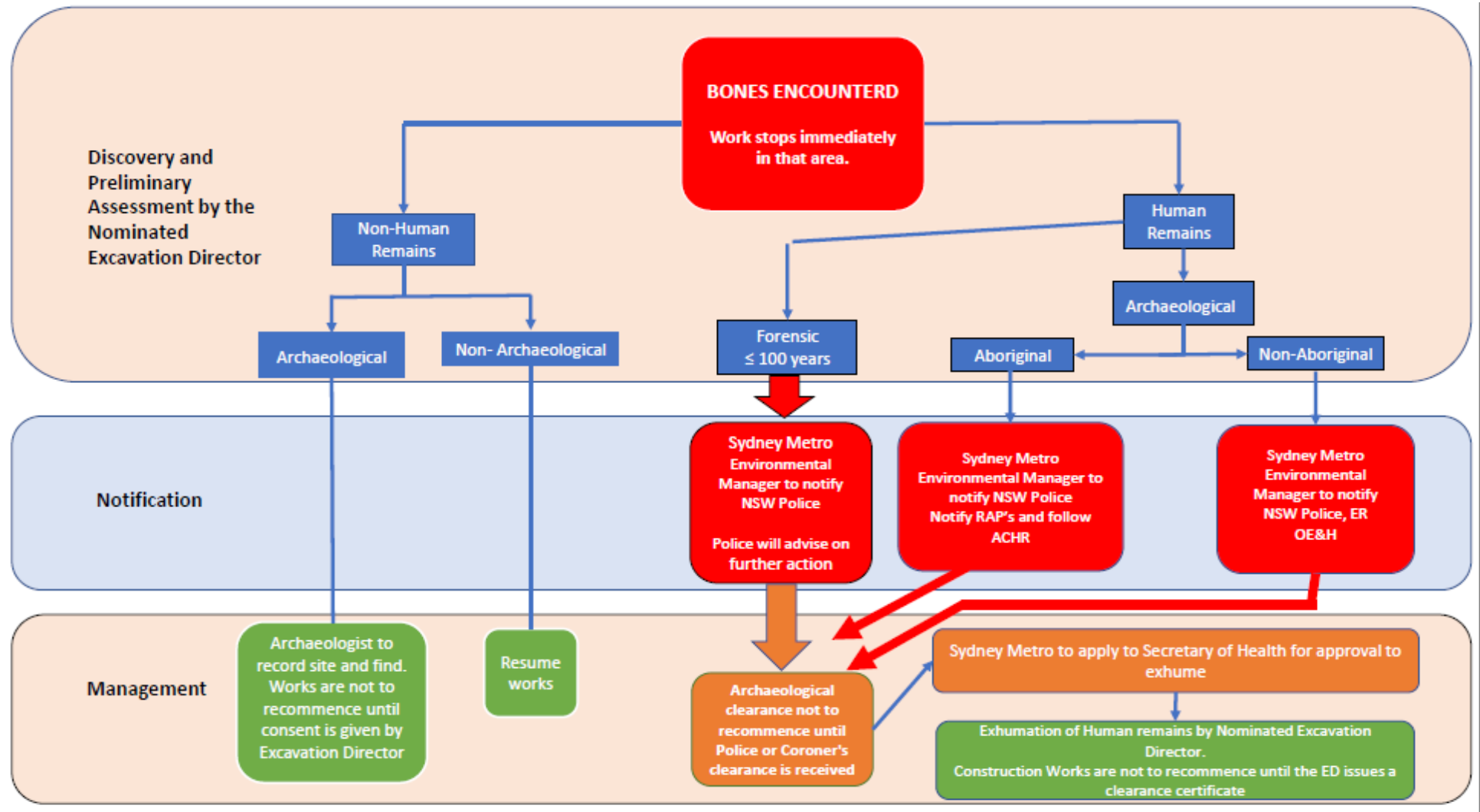
the separate bags should then be placed in a large plastic bag, crate or box, labelled with the context information.

- The remains should be placed in a sturdy, large cardboard box (approximately 600 x 300 x 200 mm) for relocation to off-site processing location.

Resume work: Construction work may only recommence upon receipt of clearance certificate from the Excavation Director and may require additional NSW Ministry of Health approval. If a forensic case, written authorisation from the NSW Police is required.

Reporting: A report would be prepared following the completion of the program of exhumation works, separate to the archaeological excavation report for the project. This report would include skeletal analysis catalogue, comprehensively describe the process of exhumation, detail the recording of the remains and synthesise the results of any further laboratory testing. An assessment of significance for the remains would be provided and interpreted within the context of the archaeological research design (response to research questions.)

Figure 2: Exhumation Policy flow chart



4. Central Station

4.1. Brief historical overview: Devonshire Street cemetery (Central Station)

The northern part of the Central Station site was formerly occupied by the nineteenth century Devonshire Street cemetery; specifically the Church of England, Presbyterian, Wesleyan and Roman Catholic burial areas. The burial grounds, called the Sandhills Cemetery or the Devonshire Street Cemetery, was consecrated in 1820⁶. The site was chosen due to the remote location of the cemetery compared to the growing town of Sydney. The cemetery was eventually declared at capacity, and took no more burials from 1865 onwards. Images from the 1890s, shortly before the cemetery was resumed for the expansion of the station, show that the original brick walls for the burial ground were still intact⁷.

Proposals raised in the 1880s and 1890s for the construction of a larger station facility at Central Station were adopted, and the clearing of the Devonshire Street cemetery commenced in 1901. On 17 January 1901, the government issued a notice declaring that representatives of any deceased in the cemetery must remove their relatives within two months⁸. By 1902 clearing had been completed.



Figure 3: Plan of proposed Central railway station with Devonshire Street cemetery marked in red and the current station footprint indicated by the blue line⁹

⁶ *The Sydney Gazette and New South Wales Advertiser*, 5 February 1820.

⁷ Artefact Heritage, 2016. *Sydney Metro City & Southwest Chatswood to Sydenham Historical Archaeological Assessment & Research Design*. Report to Jacobs/Arcadis/RPS, pp.227-228.

⁸ *The Sydney Morning Herald*, 25 January 1901.

⁹ Source: State Records NSW, SR Map 6408 with overlay by Artefact Heritage 2016.

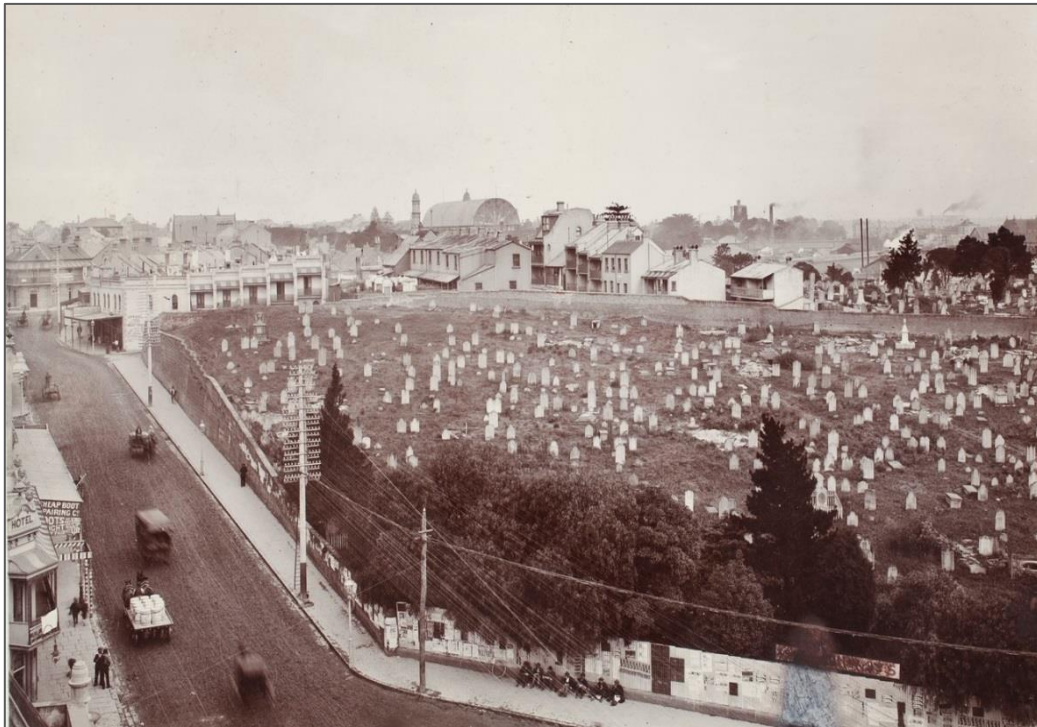


Figure 4: 1890s photo of the Church of England area of the Devonshire Street cemetery, facing south from north-eastern corner¹⁰

4.2. Archaeological potential of former Devonshire Street cemetery, Central Station

Artefact Heritage have prepared an historical AARD for the City & Southwest Chatswood to Sydenham project to assess archaeological potential and recommend appropriate management and mitigation measures. Central Station was assessed as having low potential for State significant archaeological remains associated with Devonshire Street cemetery as follows:

The Devonshire Street cemetery was located in the northern half of the Central Station site. Remaining material from the cemetery could include structural remains such as former footings for the deconstructed burial ground walls, residual brick and stone tombs, and tombstones. Coffins, coffin furniture and human skeletal remains and associated artefacts may also be preserved. Evidence of grave excavation in the form of cut soils and potential clay and sand backfill would be located from the base of the grave shaft to the top of the former ground level.¹¹

During works at the CSMW site, human remains were located in definable burials (including vaults) and scattered in redeposited fill. This ExMP applies to human skeletal remains or burial-related archaeological material.¹²

¹⁰ Source: State Library of New South Wales

¹¹ Artefact Heritage 2016: 238.

¹² Ibid, pp.255-257

4.3. Special consideration for approvals at the CSMW site

4.3.1. Discovery of human remains and forensic cases: Coroners Act 2009 (NSW)

Consultation with the Coroner has confirmed that fragmented human remains discovered at the CSMW site do not require notification to the NSW Police, as the Coroners Act would not apply, if they meet **all** of the following criteria:

- They are disarticulated bone pieces or fragments, either within an identified burial site such as a grave cut or vault, or dissociated from their original context. For example disarticulated bones, bone fragments or teeth including those found in situ, in redeposited fill or when sieving deposits.
- Are not associated, in a definable burial site, with elements that could identify the interred such as a name plate, certain types of coffin goods such as personal effects, and or a headstone;
- They are more than 100 years old;
- They meet the requirements for exhumation under the Permit issued by SLHDPHU dated 21 January 2019; and
- They have been confirmed to meet the above criteria by a forensic or physical anthropologist, or archaeologist with specialist skills such as an osteoarchaeologist.

Exhumation of human remains: Public Health Regulation 2012 (NSW) and the **h**.

4.3.2. NSW Ministry of Health Policy Statement – Exhumation of human remains (2013)

Sydney Local Health District Public Health Unit has issued a permit, dated 21 January 2019, approving site wide (CSMW) exhumation of fragmented skeletal remains under certain conditions as outlined in the permit. This provides for the management of fragmented remains without the need to seek separate permits for scattered remains that are often only identified during the sieving process, or are not associated with definable burial sites (for example within redeposited fill).

Note that additional health permits may be required if substantial remains such as full or partial articulated skeletal remains, or other elements such as grave goods or coffin nameplates, are found on site.

5. Excavation and post-excavation tasks

The following tasks relate to responses to the identification of human remains on site. All management should be in accordance with the AARD and relevant Archaeological Method Statement (AMS), and be overseen by the Excavation Director. The Excavation Director would nominate a Forensic Anthropologist where required.

5.1. Research Questions

The following research questions should be used guide exhumations, should intact burials, disarticulated remain, burial cuttings or associated material culture be uncovered during works. These research questions are based on research undertaken for the Sydney Metro City & Southwest Chatswood to Sydenham AARD, and review of previous archaeological

excavations that involved recording and removal of human remains. Additional research questions may be provided in project specific AMS documents. Note that some of the questions particularly relate to the former Devonshire Street Century at Central Station.

The research questions are a guide only, and could be added to or amended by the Excavation Director, depending on the nature of the find.

Social History and Burial Practices

- Does the location of the burial/burial cutting correspond with historic plans/descriptions of the Devonshire Street Cemetery? Are these sources reliable?
- Is there evidence of exhumation?
- Do graves cut into older ones? What can this tell us about nineteenth century burial practices in Sydney, and how does this compare to other excavated cemetery sites in the region?
- What is the distance between burials (if multiple burials uncovered)? Does this conform to known nineteenth century burial practices?
- What type of fill was used within grave cuttings? What can this tell us about the surrounding environment and burial practices at the time?
- What materials/tree species were used to produce coffins? Can coffin manufacturing techniques or fastening methods (use of mortar, screws, nails, tacks) be identified? Does this match known burial practices of the time? If alternative methods are identified, what can this tell us about the manufacturer or economic/social landscape?
- Evidence of brick vaults were found during excavations at the Old Sydney Burial Ground in 1991 and 2003,¹³ is there evidence of similar practices at the Devonshire Street Cemetery?
- Can the class or rank of the individual be identified via coffin materials, grave goods or clothing/shrouds?
- Which direction is the burial orientated? How does this correspond with the known/hypothesised location of denomination areas?
- Previous excavations of historic cemeteries have noted the use of quicklime in burials,¹⁴ is there evidence for similar practices at the Devonshire Street Cemetery?
- If the burial is associated with additional individuals, can a familial relationship be assessed through DNA or other genetic markers identifiable within the skeletal remains (e.g. impacted third molar)?
- Can an exchange between burial practices in Britain and colonial Sydney be identified through the burial remains? Is there evidence for alternative burial practices associated with additional cultures?

¹³ Godden Mackay, 1991. Old Sydney Burial Ground, Sydney Town Hall: Archaeological monitoring excavation. Prepared for the Council of the City of Sydney and the Heritage Council of NSW and Casey & Lowe, 2006. Recording of Graves, Old Sydney Burial Ground, Sydney Town Hall, 2003-2005, for Otto Cserhalmi i + Partners, on behalf of the City of Sydney.

¹⁴ Hewitt, G. & Wright, R., 2004. Identification and Historical Truth: The Russell Street Police Garage Burials. Australasian Historical Archaeology, Vol. 22.

Environmental Factors and Scientific Analysis

- What is the condition of the bones? How does their condition compare to known or nearby burials of the same age? What environmental or man-made factors may have influenced the decomposition process?
- Can the health, nutrition, sex, race, stature or age be identified through the skeletal remains? Is there evidence of trauma on the bones? Is there evidence of pathology on the bones (e.g. syphilis, tuberculosis, tumours)?
- If archaeobotanical analysis is carried out, what can it tell us about the surrounding environment and nearby plant species? Can pre/post-European landscapes be determined within the archaeobotanical record?
- Can stable isotope analysis address any questions regarding diet, country of origin and nutrition?
- Can DNA testing address any questions not answerable by the skeletal remains themselves, such as sex, familial relationships (if buried with another individual/s) or race?
- Is there potential for DNA to be tested against any individuals who may come forward as a descendant of the deceased?

5.2. Process for DNA Testing, Isotope Analysis and Environmental Sampling

5.2.1. Pre-Excavation

The Excavation Director, in consultation with the Forensic Anthropologist, will nominate a suitable laboratory prior to works commencing. Approval for the analysis of skeletal remains, soil samples and material samples from the laboratory would also be sought prior to works commencing.

5.2.2. Excavation

In order to prevent cross-contamination, the following sample collection and excavation process should be followed:

- The location, quantity and material (bone, teeth, hair, soil, wood) of samples will be determined by the Excavation Director or Forensic Anthropologist prior to its collection;
- Samples would be stored in a safe, secure and climate controlled location while excavations are in progress. This would be chosen by the Excavation Director or Forensic Anthropologist on site;
- Each collected sample would be given a unique catalogue number and a sample register would be recorded throughout the excavation;
- “Clean Excavation’ procedures would be followed during the excavation of burials and during the sample collection process.¹⁵ This would include:

¹⁵ Guidelines for ‘clean excavation’ are based on procedures outlined in: Yang, D. Y. & Watt, K. 2005. Contamination controls when preparing archaeological remains for ancient DNA analysis. *Journal of Archaeological Science*, vol. 32, pp. 331–336 and Society for Historical Archaeology, 2015-2017. *Research and Analysis of Artefacts*. Accessed online at: <https://sha.org/conservation-facts/faq/analysis/#C> on 25/5/2017.

- Latex gloves would be worn by individuals excavating and/or handling bone or soil samples. Gloves would be changed for each bone and/or individual to prevent cross-contamination;
- Excavation tools/brushes would be cleaned prior to and after the collection of each sample to prevent cross-contamination;
- In some cases, a face mask would be worn when samples for DNA analysis are being collected;
- Bone samples for DNA testing would be collected with surrounding in situ soil and should not be cleaned prior to bagging;
- It may be necessary for individuals involved in sample collection to submit DNA for comparison in the event of cross-contamination; and
- All bags containing samples for analysis would be bagged and labelled appropriately to prevent cross contamination and ensure they are handled and stored correctly.

5.2.3. Post-Excavation

Upon the completion of excavations, samples will be transported to nominated laboratories for analysis. A record of their location will be taken.

5.3. Reporting

The results of the investigation of human remains and the exhumation will be included in the archaeological reporting for the project in accordance with the project AARD.

Once finalised, all archaeological excavation and data analysis reports will be submitted to:

- The relevant local Council and Library;
- The Heritage Office Library;
- The State Library of NSW; and
- Made available online for public access and educational purposes.

Further, if significant remains are identified during excavations, the results and findings would be published in academic journals and conference papers where feasible.

5.4. Public Involvement

Archaeological excavations associated with the Devonshire Street Cemetery have uncovered remains directly associated with early settlement and burial practices in colonial Sydney. Such remains are likely to generate public interest. Therefore, public engagement and education would be incorporated into the Central Station project and other Metro projects, if relevant and feasible.

Public involvement may include:

- Media releases;
- Public Open Days;
- Preparation of brochures detailing the archaeological excavations;
- Interpretive signage and online blog posts or site diaries while excavations are taking place; and

- The preparation of a Heritage Interpretation Plan designed to provide interpretation of the site within the new development upon the completion of works.

Due to sensitive nature of human skeletal remains, these recommendations would be adapted and modified as appropriate under the direction of Sydney Metro and the Excavation Director.

Such recommendations would also be considered and require approval from relevant Stakeholder Groups such as known or potential descendants of the deceased, the NSW Heritage Division/Heritage Council, local Council and the Royal Australian Historical Society.

5.5. Temporary Storage and Permanent Repository or Resting Place for Remains

5.5.1. Temporary Storage

Upon the completion of archaeological excavations, skeletal remains should be boxed separately and temporarily stored within a safe, secure and temperature controlled environment to allow for further analysis of the remains. This location would be chosen by the Excavation Director and the Forensic Anthropologist and comply with NSW legislative requirements. Permanent Repository or Resting Place for Remains.

A permanent repository or resting place for remains is dependent on the nature and volume of skeletal remains. As this cannot be determined prior to excavations taking place, the following recommendations should act as guidelines only. Final arrangements would be dictated by Sydney Metro the Excavation Director, Forensic Anthropologist, identified descendants of the deceased and/or Stakeholder Groups upon the completion of excavations and subsequent analysis.

Recommendations for permanent repositories or resting places for remains include:

- Reinterment and Commemoration at:
 - Rookwood Cemetery (where many exhumed burials from the Devonshire Street Cemetery were historically re-buried);
 - An appropriate and respectful location within the former permitters of the Devonshire Street Cemetery; and
 - A cemetery chosen by descendants of the deceased (if identified and confirmed by DNA testing).

6. Accountabilities

The Sydney Metro Executive Director, Safety, Sustainability & Environment is accountable for this Plan including authorising the document, monitoring its effectiveness and performing a formal document review.

Direct Reports to the Program Director are accountable for ensuring the requirements of this Plan are implemented within their area of responsibility.

Direct Reports to the Program Director who are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this Plan.

7. Definitions

All terminology in this Plan is taken to mean the generally accepted or dictionary definition. Other terms and jargon specific to this Plan are defined within [SM QM-FT-435 Integrated Management System \(IMS\) Glossary](#).

8. Related Documents and References

Related Documents and References

- n/a

9. Superseded Documents

Superseded Documents

Exhumation Management Plan Version 2.2

10. Document History

Version	Date of approval	Notes
1.1	May 2017	New IMS document.
2.0	July 2017	Incorporates Stage 2 (Section 3)
2.1	February 2019	Extended for Metro Program wide application, includes changes specific Central Station management, incorporates comments received from the State Coroner's Office, NSW Police, NSW Health, Sydney Metro Environmental, Environmental Representatives engaged on the Central site and the Office of Environment and Heritage.
2.2	February 2019	Incorporates comments received from Artefact Heritage and Denise Donlan issued to Health and OEH HD for consultation
3.0	May 2019	Incorporates Health, Coroner and OEH comments

11. Schedule of Acronyms

Acronym	Meaning
AARD	Archaeological Assessment and Research Design
ACHAR	Aboriginal Cultural Heritage Assessment Report
AMS	Archaeological Method Statement
CSMW	Central Station Main Works
CSSI	Critical State Significant Infrastructure
ER	Environmental Representative (Independent)
ExMP	Exhumation Management Plan (this plan)
OEH	Office of Environment and Heritage
PHU	Public Health Unit
RAPs	Registered Aboriginal Parties
SLHDPHU	Sydney Local Health District Public Health Unit
SMEM	Sydney Metro Environmental Manager

Attachment 6 – Stakeholder Consultation

Engagement Log

Stakeholder	Date of Engagement/ Attempted Engagement
Heritage NSW	<ul style="list-style-type: none"> • Sydney Metro sent Heritage NSW an invitation to review and comment on the HMP on 20/04/2022, which included a cover letter and the HMP as a PDF document • Heritage NSW provided comments on 04/05/2022
SOPA	<ul style="list-style-type: none"> • Sydney Metro sent SOPA an invitation to review and comment on the HMP on 21/04/2022, which included a cover letter and the HMP as a PDF document • SOPA provided comments on 16/05/2022
City of Parramatta Council	<ul style="list-style-type: none"> • Sydney Metro sent City of Parramatta Council an invitation to review and comment on the HMP on 21/04/2022, which included a cover letter and the HMP as a PDF document • City of Parramatta Council did not provide any comments
Cumberland City Council	<ul style="list-style-type: none"> • Sydney Metro sent Cumberland City Council an invitation to review and comment on the HMP on 21/04/2022, which included a cover letter and the HMP as a PDF document • Cumberland City Council provided comments on 05/05/2022

Comments Register

Stakeholder	Comment Raised	GALC Response	Where Addressed
Heritage NSW (general)	Since 1 April 2022, Heritage NSW is part of the NSW Department of Planning and Environment (DPE). References to <i>“Heritage NSW, Department of Premier and Cabinet”</i> , <i>“Office of Environment and Heritage”</i> and <i>“Heritage Division of OEH”</i> should be	Amended throughout this HMP, with the exception of where referenced as the author of a guideline or regulatory document. Attachment 2 (Unexpected Finds Procedure) and Attachment 5 (Sydney Metro Exhumation Management	This HMP

Stakeholder	Comment Raised	GALC Response	Where Addressed
	objective to manage identified Aboriginal cultural values prior to the completion of primary site investigations.	Further testing and archaeological investigations will be conducted by GALC in accordance with its works program, the Aboriginal Archaeological Report and the findings from the Enabling Works Package in consultation with the Registered Aboriginal Parties.	
	The supplied HMP outlines a range of strategies to minimise harm to Aboriginal cultural heritage values, including mitigation by way of test excavation (if subsurface potential is identified) and further archaeological excavation (if significant cultural deposits with research potential are identified through testing).	Noted	N/A
	Specifically, Appendix 8 of the HMP provides a detailed assessment (GML October 2021) of the Aboriginal archaeological potential of the Parramatta Metro Station construction site area, outlining a comprehensive testing and salvage methodology for archaeological investigations required to occur prior to the construction phase of the project.	Noted	N/A
	It is less clear how the Clyde Stabling and Maintenance Facility Construction Site area, is intended to be and/or is being archaeologically investigated as indicated in the HMP (2022:16) given that there is limited information regarding the proposed/implemented methodologies,	Sydney Metro has advised that test excavation was conducted by Sydney Metro at the Clyde Stabling Yards and completed on 6 May 2022. The test excavations did not result in a requirement for archaeological salvage or any other further archaeological investigations. A report on this work is pending.	Section 9.2

Stakeholder	Comment Raised	GALC Response	Where Addressed
	omitted from documentation supplied to Heritage NSW.		
	Heritage NSW notes that an HMP is a management tool, which outlines management strategies for identified Aboriginal cultural heritage values within the project area. As such, it should not include procedures for primary site investigation and assessment, such as the test excavation that is proposed in the HMP. The objective of a test excavation methodology is to inform the management of the site during construction therefore, any testing should be undertaken as part of the primary site investigations, and the results should be used to inform the development of appropriate management strategies within the HMP. Test excavation is not an appropriate mitigation strategy for inclusion within the HMP.	Test excavation as required under the instrument of approval of the project and therefore included in the management measures of the HMP to inform the preparation of the salvage methodology. Furthermore it has been previously approved within the Early Works HMP for the project and should therefore be consistent with current management measures. However understanding that the results of test excavations will inform management of the site, clearer requirements for updating the HMP based in the results of the testing has been included in Section 9.2.	Section 9.2
	In the absence of any test excavation results or clearly articulated supplementary analysis such as that prepared by GML (October 2021), for the Parramatta Metro Station, it is unclear whether the mitigation measures that are subsequently proposed in the HMP are appropriate. The archaeological excavation procedure for the Clyde stabling and maintenance facility Construction Site area is not adequately described or quantified, and without some understanding as to the nature	Clarity provided on how the investigations at Clyde will be undertaken by Metro outside of the scope of this HMP and prior to the commencement of any works by GALC. Provision for review of this HMP once investigations are completed has been included in Section 9.2. Sydney Metro has advised that test excavations at the Clyde stabling and maintenance facility have now been concluded and there are not anticipated to be further sub surface deposits.	Section 9.2

Stakeholder	Comment Raised	GALC Response	Where Addressed
	and extent of potential sub-surface deposits, it is difficult to determine whether this proposed management strategy is appropriate.	<p>There will be staged archaeological testing at Parramatta in accordance with the work program. Test excavation is currently occurring at Parramatta in accordance with the Heritage Management Sub Plan for the Enabling Works at Parramatta, Clyde and Westmead.</p> <p>Further testing and archaeological investigations will be conducted by GALC in accordance with its works program, the Aboriginal Archaeological Report and the findings from the Enabling Works Package in consultation with the Registered Aboriginal Parties.</p>	
	It is recommended that any procedures for primary site investigation (ie test excavation) should be removed from the HMP (these procedures should be implemented as part of the initial assessments prior to the preparation of the HMP. The HMP should then be updated following the completion of any necessary test excavation in accordance with MCoA D21, to ensure all management strategies are appropriate to the significance of the identified Aboriginal heritage values in accordance with Section 2.7 of the Guide to Investigating, Assessing and Reporting on Aboriginal cultural heritage in NSW.	The HMP has been updated to highlight where test excavation has now been completed and noted where the completion of test excavations will relate to this and future revisions of the HMP. Within section 7.5, reference to test excavation needing to be done has remained as some further test excavation within Parramatta falls within this scope and therefore, if removed, there would be no governance document that covers test excavation.	7.5
Heritage NSW (Non-Aboriginal Cultural Heritage)	<p>Unexpected finds procedure and dichotomy of terms 'work' vs 'relic':</p> <ul style="list-style-type: none"> ○ Throughout Attachment 2 entitled '<i>Unexpected Finds Procedure</i>,' a clear 	Sydney Metro has advised that Attachment 2 (Unexpected Finds Procedure) was previously prepared in consultation	N/A

Stakeholder	Comment Raised	GALC Response	Where Addressed
	<p>terminological distinction is made between the term ‘work,’ being described as ‘culverts, historic pavements, retaining walls, tramlines, rail tracks, turn tables, timber sleepers, cisterns, fences, sheds, buildings and conduits’ (s. 2.2.2) or ‘a form of infrastructure such as track or rail tracks, timber sleepers, a culvert, road base, a bridge pier, kerbing, and similar items’ (Appendix 2, Recording Form) and the term ‘relic,’ being described as ‘a bottle, utensils, plates, cups, household items, tools, implements, and similar items’ (eg Appendix 2, Recording Form).</p> <ul style="list-style-type: none"> ○ It is noted that the two terms are utilised to define distinct and strictly separate typological categories of potential archaeological finds comprising structures and features labelled as ‘works’ on the one hand and small finds labelled as ‘relics’ on the other. In the case of an unexpected finds procedure, this could be misleading. It could be interpreted that unexpected finds from the category of ‘works’ are less likely to be protected under the <i>Heritage Act 1977</i> and therefore represent a less sensitive category of unexpected archaeological finds. Therefore, the strict separation of ‘works’ and ‘relics’ in an unexpected finds procedure, as supported via explicit examples, while not unreasonable, leaves potential for 	<p>with Heritage NSW. Both the Unexpected Heritage Finds Procedure and the Exhumation Management Procedure, were accepted by Department of Planning and Environment on 15/06/2021</p> <p>https://majorprojects.planningportal.nsw.gov.au/prweb/PRR estService/mp/01/getContent?AttachRef=SSI-10038-PA-6%2120210615T034256.819%20GMT).</p>	

Stakeholder	Comment Raised	GALC Response	Where Addressed
	<p>interpretation on behalf of a contractor and self-assessment of historical archaeological finds as not 'relics' and therefore not protected/reportable.</p> <ul style="list-style-type: none"> ○ It is noted that Section 2.2.1 of Attachment 2 correctly refers to the legal definition of the term 'relic' under Section 4(1) of the <i>Heritage Act 1977</i> as: 'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.' Therefore, it must also be noted that similarly to the above, being material evidence and subject to their (local, State or none) significance for demonstrating the past, items such as the ones referred to above strictly as 'relics' (glass bottles, utensils, plates, cups, etc.) have the potential not to be assessed as - and therefore not to represent - relics under the relics provision of the <i>Heritage Act 1977</i>. ○ The above also applies to Section 2.3 of Attachment 2, which discusses non-Aboriginal human skeletal remains older than 100 years automatically as relics. While unexpected finds of non-Aboriginal human skeletal remains have very high potential to represent relics and must be reported under s146 of the <i>Heritage Act 1977</i>, they can be 		

Stakeholder	Comment Raised	GALC Response	Where Addressed
	<p>defined as relics only subject to significance assessment of the remains themselves and/or the archaeological context of their discovery, and their historical and social implications against the relevant criteria.</p> <ul style="list-style-type: none"> It is noted that the unexpected finds procedure makes it clear that it would be in the expertise of the nominated Excavation Director/historical archaeologist to determine whether a given historical archaeological find represents a relic under the <i>Heritage Act 1977</i>, however due to the issues as stated above and with the purpose of eliminating any potential confusion, it is recommended that an update of the relevant terminology throughout the document be considered. 		
	<p>Overall, the HMP as submitted, including the unexpected finds procedure, is sufficiently detailed to address the management of non-Aboriginal cultural heritage and historical archaeology for the Western Tunnelling Package of Sydney Metro West.</p>	Noted.	N/A
Cumberland City Council	<p>The Holroyd LEP 2013 has been superseded by the Cumberland LEP 2021. The CLEP 2021 reference ID for the Westmead Public School is I295.</p>	<p>The heritage listings identified in the vicinity of Westmead Metro Station have been updated in line with the Cumberland Local Environment Plan 2021.</p>	Section 5.1.1.1

Stakeholder	Comment Raised	GALC Response	Where Addressed
	All the heritage-list reference ID numbers on this map appear to be drawn from the Holroyd LEP 2013 and are thus out of date. They should be corrected according to CLEP 2021.	The heritage listed items included in Figure 2 have been updated in line with the Cumberland Local Environment Plan 2021.	Figure 2
	This might just be an issue relating to the order of the layers in your mapping software (rather than incorrect data/drawing of polygons), but this heritage conservation area (Toohey's Palm Estate Group Conservation Area - CLEP 2021 ref. C5) actually also covers the six heritage listed properties identified going east along Moree Avenue.	This comment was made on an outdated version of the HMP (Rev B). The curtilage for the Toohey's Palm Estate Group Conservation Area has since been revised.	Figure 2
	The Holroyd LEP 2013 has been superseded by the Cumberland LEP 2021. The CLEP 2021 reference ID for the Westmead Public School is I295.	The heritage listing identified as being potentially impacted by Westmead Metro Station construction works has been updated in line with the Cumberland Local Environment Plan 2021.	Section 6.2
SOPA	It needs to be clarified whether or not parts of the Abattoir Precinct will be destroyed. The document indicates that they will be. SOPA have asked on clarification on this previously. According to the document, significant parts of the gardens around the buildings, including mature trees and the palm grove will be	The Project scope of works for SOP is minimal and only includes TBM retrieval works. Site clearance, and impacts to heritage items, including trees and vegetation will not occur as part of the WTP scope of works. The impacts identified in the EIS for the Sydney Metro West - Stage 1 project are associated with the Central Tunnelling Package scope of works. Section 6.2 has been revised to provide clarity regarding impacts to the State Abattoirs as a result of the Project.	Section 6.2

Stakeholder	Comment Raised	GALC Response	Where Addressed
	destroyed. This will impact the appearance of the precinct significantly.		
	Mitigation proposals are robust and include archival recording of elements to be destroyed, building conditions survey, periodic building monitoring, vibration monitoring, and involvement of a heritage specialist.	Noted.	N/A
	The document does not specify how SOPA (i.e. the owner of the impacted precinct) will be involved and informed. For example, the archival recording is to be provided to other agencies but not to SOPA.	Section 7.6.9 has been updated to include requirement for consultation with asset owner in relation to addition heritage impacts, if identified during the course of the Project. Any further consultation requirements are part of the broader Project consultation requirements and not within the scope of this HMP.	Section 7.6.9
	Recommendation - The document be amended to address how owners of impacted heritage items will be involved and informed about heritage matters related to its assets throughout the project, including meetings and inspections with the heritage specialist and provision of reports and documents.	As above.	Section 7.6.9
	Recommendation - SOPA is involved in any discussions and decisions regarding salvage of elements to be destroyed or removed, and rectifications designs.	As above.	Section 7.6.9

Stakeholder	Comment Raised	GALC Response	Where Addressed
	Recommendation - S7.5.1 – SOPA is added to the list of agencies to receive archival recordings made of the Abattoir precinct.	The State Abattoirs was included in error as an item to be archivally recorded. The WTP scope of works does not impact on any heritage items and therefore does not trigger the requirement for an archival recording to be undertaken.	
	Recommendation - S7.5.4, s7.5.5 – SOPA is provided with copies of building condition surveys and periodic monitoring reports regarding the abattoir precinct.	Section 7.6.5 and Section 7.6.6 has been revised to include distributing copies of building condition surveys and monitoring reports to SOPA.	Section 7.6.5 and Section 7.6.6

Meeting Minutes

Document Transmittal

Transmittal No:	SMWSTWTP-GLO-TX-000090
Contract No:	WTP - 00013/13065 - Western Tunnelling Works Design and Construction Deed
Sub Contract:	WTP
Date:	14 April 2022, 07:58 AM

Issued	Name
By	Liem Ngo (Gamuda Laing O'Rourke Consortium)

Issued	Name
To	Andrew Hendy (Sydney Metro) ; Alicia Hatton (Sydney Metro) ; Kate Brooks (Sydney Metro)
Cc	Hayley Young (Gamuda Laing O'Rourke Consortium) ; Steph Mfsud (Gamuda Laing O'Rourke Consortium) ; Andy Thompson (Gamuda Laing O'Rourke Consortium) ; Huw Griffiths (Gamuda Laing O'Rourke Consortium) ; Tom Olorenshaw (Gamuda Laing O'Rourke Consortium)

Reason for Issue	Issued for Information
Subject	Cumberland Council Meeting Minutes - 7 April 2022

Dear all

Please find attached for your information, minutes for the meeting with Cumberland City Council on 7 April 2022.

Regards

Liem Ngo

Stakeholder and Community Engagement Manager
 Sydney Metro West – Western Tunnelling Package
 Gamuda Australia Laing O'Rourke Consortium

[Click here to download all Transmittal files.](#)

Item	Document No	Title	Rev	Sts	Type	Design Lots	Alt Doc No
1	SMWSTWTP-GLO-WMD-CY-MIN-000001	Meeting Minutes - Cumberland City Council - 7 April 2022 - Project introduction and environmental management plans	A.01	S2	MIN		

MEETING MINUTES

Meeting details

Meeting title	Briefing for Cumberland City Council - Sydney Metro West Western Tunnelling Package Project and Environmental Management Plan consultation introduction	
Date Time	7 April 2022, 15:30-16:15	
Location	MS Teams (online)	
Attendees	Gamuda Australia Laing O'Rourke (GLC):	Simon Hussey, Andy Thompson, Hayley Young, Huw Griffiths, Tom Olorenshaw, Liem Ngo, Stephanie Mifsud
	Sydney Metro (SM)	Andrew Hendy, Kate Brooks, Nikita Cullum
	Cumberland City Council (CCC)	Daniel Cavallo, Shona Porter, Daniel Anderson

Item Information

1 Introductions and welcome

Introductions of meeting participants were conducted

2 Western Tunnelling Package & CEMP Consultation

2.1 **Andy Thompson delivered a presentation to provide an overview of the Sydney Metro West Western Tunnelling Package (WTP) including:**

- Introduction about Gamuda Australia and Laing O'Rourke
- Introducing the project team and key providers
- A construction overview, including project staging

2.2 **Tom Olorenshaw provided an overview of key construction, which will include:**

- HV trenching to bring in power supply for plant equipment will commence mid-2022 and will last 3-5 months
- Local area works to facilitate deliveries. Changes to kerbs, traffic lights and installation of pedestrian fencing to improve road safety are currently still in design. CCC will be consulted on proposed designs.
- Excavation works will start in 2023 and continue into 2024. This includes for the excavation of the station box, stub tunnels and cross over cavern. An acoustic shed will be built to mitigate noise from excavation.
- Tunnel Boring Machine (TBM) removal will from Westmead site will take approximately 6-8 weeks.

Andy Thompson noted that Sydney Metro by changing the TBM launch site from Westmead to Rosehill, has substantially reduced the impact on Westmead due to the tunnel segments no longer needing to be delivered regularly to the Westmead site.

2.3 **Liem Ngo provided an overview of potential stakeholder impacts, mitigation and engagement**

2.4 **Stephanie Mifsud presented the WTP Project's environmental approvals framework, including:**

- The environmental approvals process, including the Construction Environmental Management Plans.
- WTP Environmental Management plans framework and their interconnectedness with a range of WTP



Item	Information
	<p>procedures and strategies</p> <ul style="list-style-type: none">• CEMP relationship with the WTP project's environmental management systems• Inviting feedback on the various tranches of the CEMP, with the first tranches to submitted shortly to SOPA and other key stakeholders for consultation, with a 4-week consultation process proposed, involving:• Step 1. 2-weeks for written feedback, Step 2 - in week 3, a comment review workshop for subject matter experts to address CCC feedback, Step 3 - in week 4, CEMPS to be amended to address comments discussed in the workshop

3	Questions and Answers (CCC questions, GLC or SM answers)
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Q. What is the depth of the tunnels?

A. Station box is between 30 and 37m from surface, stub tunnels are 25 metres from surface and the crown of the cross cavern tunnel is 15m from the surface.

Q. Does tunnel depth limit basement depth for future developments?

A. (GLC) Potentially. There will be restrictions on depth from operating rail lines which may impact future developments.

Action: GLC, via Sydney Metro/TfNSW will provide CCC with depth restrictions for future development.

Q. With respect to the environmental management plans, is GLC seeking technical advice or fact-checking?

A. Both. If the Council has feedback on technical issues GLC welcomes those issues being raised at this early stage so it can be discussed. GLC suggests that any feedback clearly identify the particular sections of a plan and clearly states the outcome CCC wants.

Action: Sydney Metro, when sending plans to CCC for review and feedback should address to Daniel Cavallo and copied to his EA, Sarah Hussein, to coordinate input from CCC.

	Meeting finish
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4	Next meeting
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Date: Consultation workshop date to be determined

Time: TBD

Location: TBD



West

Document Transmittal

Transmittal No:	SMWSTWTP-GLO-TX-000072
Contract No:	WTP - Western Tunnelling Package
Sub Contract:	WTP
Date:	07 April 2022, 09:47 AM

Issued	Name
By	Liem Ngo (Gamuda Laing O'Rourke JV)

Issued	Name
To	Alicia Hatton (Sydney Metro) ; Andrew Hendy (Sydney Metro) ; Nick Nathans (Sydney Metro) ; Kate Brooks (Sydney Metro)
Cc	Hayley Young (Gamuda Laing O'Rourke JV) ; Steph Mfsud (Gamuda Laing O'Rourke JV)

Reason for Issue	Issued for Information
Subject	SOPA Project & CEMP briefing - Meeting Minutes - 1 April 2022

Dear all

Please find attached for your information, meeting minutes for the 1 April 2022 meeting with SOPA.

Regards
Liem Ngo

[Click here to download all Transmittal files.](#)

Item	Document No	Title	Rev	Sts	Type	Design Lots	Alt Doc No
1	SMWSTWTP-GLO-QLP-SK-MN-000001	SOPA Project & CEMP briefing - Meeting Minutes - 1 April 2022	-01	S2	MIN		

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Attachment(s):

MEETING MINUTES

Meeting details							
Meeting title	Briefing for SOPA - Sydney Metro West Western Tunnelling Package Project and Environmental Management Plan consultation introduction						
Date Time	1 April 2022						
Location	MS Teams (online)						
Attendees	<table border="0"> <tr> <td>Gamuda Australia Laing O'Rourke (GLC):</td> <td>Simon Hussey, Andy Thompson, Hayley Young, Huw Griffiths, Liem Ngo, Stephanie Mifsud</td> </tr> <tr> <td>Sydney Metro (SM)</td> <td>Nick Nathan (Facilitator/Chair), Andrew Hendy, Alicia Hatton, Sarah Lepre, Nikkita Cullum, Ian Subramanian</td> </tr> <tr> <td>Sydney Olympic Park Authority (SOPA)</td> <td>Sally Hamilton, John Ferguson, Vivienne Albin, Julie Currey</td> </tr> </table>	Gamuda Australia Laing O'Rourke (GLC):	Simon Hussey, Andy Thompson, Hayley Young, Huw Griffiths, Liem Ngo, Stephanie Mifsud	Sydney Metro (SM)	Nick Nathan (Facilitator/Chair), Andrew Hendy, Alicia Hatton, Sarah Lepre, Nikkita Cullum, Ian Subramanian	Sydney Olympic Park Authority (SOPA)	Sally Hamilton, John Ferguson, Vivienne Albin, Julie Currey
Gamuda Australia Laing O'Rourke (GLC):	Simon Hussey, Andy Thompson, Hayley Young, Huw Griffiths, Liem Ngo, Stephanie Mifsud						
Sydney Metro (SM)	Nick Nathan (Facilitator/Chair), Andrew Hendy, Alicia Hatton, Sarah Lepre, Nikkita Cullum, Ian Subramanian						
Sydney Olympic Park Authority (SOPA)	Sally Hamilton, John Ferguson, Vivienne Albin, Julie Currey						

Item	Information
1	Introductions and welcome

Introductions of meeting participants were conducted

Nick Nathan (SM) provided an overview of the Sydney Metro West Project, including the three tunnelling packages and of the Stage 3 EIS currently open for public consultation.

Alicia Hutton (SM) introduced the GLC team, including Andy Thompson (GLC) to provide details about the Western Tunnelling Package (WTP)

2	Western Tunnelling Package & CEMP Consultation
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2.1 Andy Thompson delivered a presentation to provide an overview of the Sydney Metro West Western Tunnelling Package (WTP) including:

- Introduction about Gamuda Australia and Laing O'Rourke
- Introducing the project team and key providers
- A construction overview, including project staging
- Explanation of the combined Sydney Metro West construction site, including the WTP and the Central Tunnelling Package (CTP) sections
- The stages for the TBM retrieval and nozzle construction, site demobilisation and handover to CTP contractor

2.2 Liem Ngo provided an overview of potential stakeholder impacts, mitigation and engagement

2.3 Stephanie Mifsud presented the WTP Project's environmental approvals framework, including:

- The environmental approvals process, including the Construction Environmental Management Plans.
- WTP Environmental Management plans framework and their interconnectedness with a range of WTP procedures and strategies
- CEMP relationship with the WTP project's environmental management systems
- Inviting feedback on the various tranches of the CEMP, with the first tranches to submitted shortly to



Item	Information
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SOPA and other key stakeholders for consultation, with a 4-week consultation process proposed, involving:

- Step 1. 2-weeks for written feedback, Step 2 - in week 3, a comment review workshop for subject matter experts to address SOPA feedback, Step 3 - in week 4, CEMPS to be amended to address comments discussed in the workshop

3	Questions and Answers (SOPA questions, GLC or SM answers)
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Q. Will the WTP project tunnel under Haslams Creek?

A. Yes

Q. Is a site auditor involved and will a meeting be setup with SOPA?

A. (GLC) Yes, Kylie Lloyd has been appointed the WTP site auditor and a meeting can be set up. It was noted that CTP will have a separate site auditor.

Action: GLC to set up meeting between the site auditor and SOPA.

Q. Will the issues raised by SOPA during the CEMP consultation be addressed and closed out?

A. (GLC) Yes. The workshop is designed to have the subject matter experts present to address SOPA's feedback and ensure any necessary changes to the CEMPs to reflect the discussions.

Q. When will more detailed stakeholder engagement occur?

A. (GLC) Since GLC is not planning to take possession of the site until December 2023 or early 2024. More detailed stakeholder engagement is likely to commence in first half of 2023. Although it was noted that both parties welcome dialogue on any issues that may emerge in the meantime.

Q. How will the CEMPs be transmitted for consultation

A. (GLC) GLC will submit to Andrew Hendy at Sydney Metro who will then distribute to respective stakeholder and interface managers to send to SOPA and other key stakeholders for consultation.

Q. Is there an unexpected finds protocol?

A. (GLC) Yes, there is.

Q. Can the feedback given to CTP be shared with the WTP team?

A. (SM) Feedback from consultation on CTP plans should be included within the respective plans which are now publicly available. Andrew Hendy will provide links to the GLC Environment and Planning team.

Q. How with Sydney Metro coordinate WTP and CTP activities?

A. (SM) Nick Nathan will coordinate CTP and WTP teams for SOP interface, via joint SOPA meetings or meet separately with each contract teams, as required.

	Meeting finish
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10	Next meeting
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Date: Consultation workshop date to be determined (late April/early May)

Time: TBD

Location: TBD

Meeting Summary**Total Number of Participants**

20

Meeting Title

SMW Introduction and CEMP Sub-Plans Briefing

Meeting Start Time

3/24/2022, 3:59:12 PM

Meeting End Time

3/24/2022, 4:46:41 PM

Meeting Id

18d00fea-6311-4935-8a5d-d89b04fb3722

Full Name	Join Time	Leave Time	Duration
Tania Page	3/24/2022, 3:59:12 PM	3/24/2022, 4:46:41 PM	47m 29s
Andy Thompson (GAB)	3/24/2022, 3:59:20 PM	3/24/2022, 4:46:37 PM	47m 17s
Sarah Lepre	3/24/2022, 3:59:51 PM	3/24/2022, 4:46:35 PM	46m 44s
Andrea Giusa	3/24/2022, 3:59:55 PM	3/24/2022, 4:46:41 PM	46m 45s
Ngo, Liem	3/24/2022, 4:00:04 PM	3/24/2022, 4:46:37 PM	46m 33s
Steph Mifsud (GAB)	3/24/2022, 4:00:09 PM	3/24/2022, 4:46:37 PM	46m 28s
Griffiths, Huw	3/24/2022, 4:00:25 PM	3/24/2022, 4:46:38 PM	46m 13s
Andrew Hendy	3/24/2022, 4:00:26 PM	3/24/2022, 4:46:38 PM	46m 11s
Bishwanand Mishra	3/24/2022, 4:00:30 PM	3/24/2022, 4:46:36 PM	46m 6s
Nikkita Cullum	3/24/2022, 4:00:32 PM	3/24/2022, 4:46:36 PM	46m 4s
Jim Tsom	3/24/2022, 4:00:34 PM	3/24/2022, 4:46:39 PM	46m 4s
Hayley Young (GAB)	3/24/2022, 4:01:17 PM	3/24/2022, 4:46:36 PM	45m 19s
Pino Todarello	3/24/2022, 4:01:22 PM	3/24/2022, 4:46:35 PM	45m 12s
Phillip Kelly	3/24/2022, 4:01:35 PM	3/24/2022, 4:46:36 PM	45m
Ian Subramaniam	3/24/2022, 4:01:35 PM	3/24/2022, 4:46:35 PM	45m
Simon Hussey (GAB)	3/24/2022, 4:01:55 PM	3/24/2022, 4:46:36 PM	44m 41s
Adrian Mihaila	3/24/2022, 4:03:52 PM	3/24/2022, 4:46:36 PM	42m 44s
Stuart Pike	3/24/2022, 4:04:52 PM	3/24/2022, 4:46:36 PM	41m 43s
Matthew Marrinan	3/24/2022, 4:05:05 PM	3/24/2022, 4:46:36 PM	41m 30s
Sasi Kumar	3/24/2022, 4:06:28 PM	3/24/2022, 4:46:36 PM	40m 8s

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Role

SM, Snr Project Manager Interfaces West
GALC, Surface Works Construction Manager
SM, Project Officer Environment
CoPC, Heritage Advisor
GALC, Stakeholder & Engagement Manager
GALC, Environmental Manager
GALC,
SM, Manager Environment
CoPC, Senior Catchment Referral Engineer
SM, Graduate
CoPC, Supervisor Catchment Management
GALC, Environment & Sustainability Lead
CoPC, Supervisor Open Space & Natural Resources
SM, Stakeholder & Engagement Manager
SM, Project Manager Interfaces West
GALC, Deputy Project Director
CoPC, Health & Building Services Manager
CoPC, Team Leader Environmental Health Compliance
SM, Snr Manager Environment
CoPC, Development Manager Sydney Metro

Copies of Correspondence



21 April 2022

Attn Mr Daniel Cavallo
Executive Manager City Strategy
Cumberland City Council
PO Box 42
MERRYLANDS NSW 2160

Dear Daniel,

Sydney Metro SSI 10038 – Western Tunnelling Package – Gamuda Australia and Laing O’Rourke Consortium – Construction Heritage Management Plan

The Western Tunnelling Package (WTP) Package was recently awarded to Gamuda Australia and Laing O’Rourke Consortium (GALC). These works form part of the Sydney Metro West – Concept and Stage 1 (major civil construction between Westmead and The Bays) planning approval.

An introductory presentation was arranged by Sydney Metro to be provided by GALC on 7 April 2022.

The planning approval requires the preparation of environmental management plans prior to construction commencing. Please find attached the Western Tunnelling Package (WTP) Heritage Management Plan, issued to the Cumberland City Council for consultation in accordance with CSSI 10038 Condition of Approval C5.

Accompanying this letter are the following documents:

- WTP Heritage Management Plan

Consultation on this document(s) is required under condition C5 of SSI 10038 and we are commencing a 3-week consultation process with you as of 21 April 2022 with this submission. During this period, we will hold a comment workshop in the third week (week commencing 10 May 2022). Your attendance is not mandatory, but highly advised to ensure you get the most out of the opportunity.

As the comment workshop is intended to respond to your comments, we would also like to receive comments prior to the workshop date, preferably by 6 May 2022. Please provide any comments via a comments register.

The consultation process will conclude on the date of the final workshop.

Should you have any questions or comments on the attached, please do not hesitate to contact Matthew Marrinan, Senior Manager Environment on Matthew.Marrinan@transport.nsw.gov.au or 0475 966 938.

Sydney Metro

Level 43, 680 George Street, Sydney NSW 2000 | PO Box K659, Haymarket NSW 1240
T 02 8265 9400 | sydneymetro.info | ABN 12 354 063 515

Yours sincerely

A handwritten signature in blue ink, appearing to read "Stuart Hodgson". The signature is written in a cursive style with a long horizontal stroke extending to the left.

Stuart Hodgson
Director Sustainability, Environment & Planning
Metro West
Sydney Metro

DocumentNo Rev Sts Discp
 line
 SMWSTWTP- GLO-1NL-HE- PLN-000001 B S3 EN

Attachments	Item	Date	Rev	Sts	Raised By	Raised By Company	Commented By	Company	Comments	Category	Closed-Out	Review Doc. No.	Document Ref	Deed Ref
No	18	2022-05-05	B	S3	Jeff Van Veghel	Cumberland City Council	Jeff Van Veghel	Cumberland City Council	The Holroyd LEP 2013 has been superseded by the Cumberland LEP 2021. The CLEP 2021 reference ID for the Westmead Public School is I295.	OBS	N	SMWSTWTP-GLO-1NL-HE-PLN-000001	p.35, Section 6.2, Table 11	n/a
No	17	2022-05-05	B	S3	Jeff Van Veghel	Cumberland City Council	Jeff Van Veghel	Cumberland City Council	All the heritage-list reference ID numbers on this map appear to be drawn from the Holroyd LEP 2013 and are thus out of date. They should be corrected according to CLEP 2021.	OBS	N	SMWSTWTP-GLO-1NL-HE-PLN-000001	p.21, Figure 2	n/a
No	16	2022-05-05	B	S3	Jeff Van Veghel	Cumberland City Council	Jeff Van Veghel	Cumberland City Council	This might just be an issue relating to the order of the layers in your mapping software (rather than incorrect data/drawing of polygons), but this heritage conservation area (Toohey's Palm Estate Group Conservation Area - CLEP 2021 ref. CS) actually also covers the six heritage listed properties identified going east along Moree Avenue.	OBS	N	SMWSTWTP-GLO-1NL-HE-PLN-000001	p.21, Figure 2	n/a
No	15	2022-05-05	B	S3	Jeff Van Veghel	Cumberland City Council	Jeff Van Veghel	Cumberland City Council	The Holroyd LEP 2013 has been superseded by the Cumberland LEP 2021. The CLEP 2021 reference ID for the Westmead Public School is I295.	OBS	N	SMWSTWTP-GLO-1NL-HE-PLN-000001	p.19, Section 5.1.1.1, Table 5	n/a



21 April 2022

Attn Mr Sasi Kumar
Development Project Manager – Sydney Metro West
City of Parramatta Council
PO Box 32
PARRAMATTA NSW 2124

Dear Sasi,

Sydney Metro SSI 10038 – Western Tunnelling Package – Gamuda Australia and Laing O’Rourke Consortium – Construction Heritage Management Plan

The Western Tunnelling Package (WTP) Package was recently awarded to Gamuda Australia and Laing O’Rourke Consortium (GALC). These works form part of the Sydney Metro West – Concept and Stage 1 (major civil construction between Westmead and The Bays) planning approval.

An introductory presentation was arranged by Sydney Metro and provided by GALC on 24 March 2022.

The planning approval requires the preparation of environmental management plans prior to construction commencing. Please find attached the Western Tunnelling Package (WTP) Construction Heritage Management Plan, issued to the Parramatta City Council for consultation in accordance with CSSI 10038 Condition of Approval C5.

Accompanying this letter is the following documents:

- WTP Heritage Management Plan

Consultation on this document(s) is required under condition C5 of SSI 10038 and we are commencing a 3-week consultation process with you as of 21 April 2022 with this submission. During this period, we will hold a comment workshop in the third week (week commencing 10 May 2022). Your attendance is not mandatory, but highly advised to ensure you get the most out of the opportunity.

As the comment workshop is intended to respond to your comments, we would also like to receive comments prior to the workshop date, preferably by 6 May 2022. Please provide any comments via a comments register.

The consultation process will conclude on the date of the final workshop.

Should you have any questions or comments on the attached, please do not hesitate to contact Matthew Marrinan, Senior Manager Environment on Matthew.Marrinan@transport.nsw.gov.au or 0475 966 938.

Sydney Metro

Level 43, 680 George Street, Sydney NSW 2000 | PO Box K659, Haymarket NSW 1240
T 02 8265 9400 | sydneymetro.info | ABN 12 354 063 515

Yours sincerely

A handwritten signature in blue ink, appearing to read "Stuart Hodgson", with a long horizontal stroke extending to the left.

Stuart Hodgson
Director Sustainability, Environment & Planning
Metro West
Sydney Metro

From: Ian Subramaniam <Ian.Subramaniam@transport.nsw.gov.au>
Sent: Friday, 13 May 2022 5:33 PM
To: Andrew Hendy <Andrew.Hendy@transport.nsw.gov.au>
Cc: Sarah Lepre <Sarah.Lepre@transport.nsw.gov.au>; Denniel Custodio <Denniel.Custodio@transport.nsw.gov.au>; Tania Page <Tania.Page2@transport.nsw.gov.au>; Nikkita Cullum <Nikkita.Cullum@transport.nsw.gov.au>; Matthew Marrinan <Matthew.Marrinan@transport.nsw.gov.au>
Subject: RE: CoP COMMENTS | Sydney Metro West - WTP - Flora and Fauna Management Plan

Hi Andrew,

We had our fortnightly interface meeting with Council yesterday.

We discussed and have minuted a 'no comment' on:

- The Heritage (Non-Aboriginal and Aboriginal) sub plan
- Soil and water sub plan, noting the due date on the teambinder correspondence was 10/5.

Council are aware that the surface water quality construction monitoring program is due to close 17/5.

Kind Regards,

Ian Subramaniam
Interface Manager West
Projects – Metro West
Sydney Metro

T 02 8588 4147 | M 0432 959 619

[sydneymetro.info](https://www.sydneymetro.info)

Level 43, 680 George Street, Sydney NSW 2000
PO Box K659, Haymarket NSW 1240





21 April 2022

Attn: Sally Hamilton
Director, Environment and Planning
Sydney Olympic Park Authority
Locked Bag 3
SYDNEY OLYMPIC PARK NSW 2127

Dear Sally,

Sydney Metro SSI 10038 – Western Tunnelling Package – Gamuda Australia and Laing O’Rourke Consortium – Construction Heritage Management Plan

The Western Tunnelling Package (WTP) Package was recently awarded to Gamuda Australia and Laing O’Rourke Consortium (GALC). These works form part of the Sydney Metro West – Concept and Stage 1 (major civil construction between Westmead and The Bays) planning approval.

An introductory presentation was arranged by Sydney Metro and provided by GALC on 1 April 2022.

The planning approval requires the preparation of environmental management plans prior to construction commencing. Please find attached the Western Tunnelling Package (WTP) Construction Heritage Management Plan, issued to the Sydney Olympic Park Authority (SOPA) for consultation in accordance with CSSI 10038 Condition of Approval C5.

Accompanying this letter is the following documents:

- WTP Heritage Management Plan

Consultation on this document(s) is required under condition C5 of SSI 10038 and we are commencing a 3-week consultation process with you as of 21 April 2022 with this submission. During this period, we will hold a comment workshop in the third week (week commencing 10 May 2022). Your attendance is not mandatory, but highly advised to ensure you get the most out of the opportunity.

As the comment workshop is intended to respond to your comments, we would also like to receive comments prior to the workshop date, preferably by 6 May 2022. Please provide any comments via a comments register.

The consultation process will conclude on the date of the final workshop.

Should you have any questions or comments on the attached, please do not hesitate to contact Matthew Marrinan, Senior Manager Environment on Matthew.Marrinan@transport.nsw.gov.au or 0475 966 938.

Sydney Metro

Level 43, 680 George Street, Sydney NSW 2000 | PO Box K659, Haymarket NSW 1240
T 02 8265 9400 | sydneymetro.info | ABN 12 354 063 515

Yours sincerely

A handwritten signature in blue ink, appearing to read "Stuart Hodgson". The signature is fluid and cursive, with a long horizontal stroke extending to the left.

Stuart Hodgson
Director Sustainability, Environment & Planning
Metro West
Sydney Metro

From: Rupert Luxton <Rupert.Luxton@sopa.nsw.gov.au>
Sent: Wednesday, 18 May 2022 4:09 PM
To: Nicholas Nathans <Nick.Nathans@transport.nsw.gov.au>
Cc: Vivienne Albin <Vivienne.Albin@sopa.nsw.gov.au>; Andrew Hendy <Andrew.Hendy@transport.nsw.gov.au>; 'Denniel Custodio' <SMWST1@tbupload.com>; Denniel Custodio <Denniel.Custodio@transport.nsw.gov.au>
Subject: RE: WTP - update on Management Plans - Heritage Management

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Hi Nick,

I've also uploaded the below comments to TeamBinder.

Kind regards

Rupert Luxton
Urban Planner, Planning
Sydney Olympic Park Authority

M 0400 768 486
rupert.luxton@sopa.nsw.gov.au
Level 8, 5 Olympic Boulevard, Sydney Olympic Park, NSW, 2127
sydneyolympicpark.com.au

From: Rupert Luxton
Sent: Monday, 16 May 2022 9:48 AM
To: 'Nicholas Nathans' <Nick.Nathans@transport.nsw.gov.au>
Cc: Vivienne Albin <Vivienne.Albin@sopa.nsw.gov.au>; 'Andrew Hendy' <Andrew.Hendy@transport.nsw.gov.au>; 'Denniel Custodio' <SMWST1@tbupload.com>; 'Denniel Custodio' <Denniel.Custodio@transport.nsw.gov.au>
Subject: RE: WTP - update on Management Plans - Heritage Management

Hi Nick,

In regards to SOPA's comments on the Heritage Management, please see below:

Comments:

1. It needs to be clarified whether or not parts of the Abattoir Precinct will be destroyed. The document indicates that they will be. SOPA have asked on clarification on this previously. According to the document, significant parts of the gardens around the buildings, including mature trees and the palm grove will be destroyed. This will impact the appearance of the precinct significantly;
2. Mitigation proposals are robust and include archival recording of elements to be destroyed, building conditions survey, periodic building monitoring, vibration monitoring, and involvement of a heritage specialist;
3. The document does not specify how SOPA (i.e. the owner of the impacted precinct) will be involved and informed. For example, the archival recording is to be provided to other agencies but not to SOPA.

SOPA recommendations:

1. The document be amended to address how owners of impacted heritage items will be involved and informed about heritage matters related to its assets throughout the project, including meetings and inspections with the heritage specialist and provision of reports and documents;
2. SOPA is involved in any discussions and decisions regarding salvage of elements to be destroyed or removed, and rectifications designs;
3. S7.5.1 – SOPA is added to the list of agencies to receive archival recordings made of the Abattoir precinct; and

4. S7.5.4, s7.5.5 – SOPA is provided with copies of building condition surveys and periodic monitoring reports regarding the abattoir precinct.

Kind regards

Rupert Luxton
Urban Planner, Planning
Sydney Olympic Park Authority

M 0400 768 486
rupert.luxton@sopa.nsw.gov.au
Level 8, 5 Olympic Boulevard, Sydney Olympic Park, NSW, 2127
sydneyolympicpark.com.au



Our ref: DOC22/342867

Cath Snelgrove
Senior Heritage Advisor
Sydney Metro
Level 43, 680 George Street
SYDNEY NSW 2000

By email: Cath.Snelgrove@transport.nsw.gov.au

Dear Ms Snelgrove,

Post approval submission for comment for Sydney Metro West Stage 1 Western Tunnelling Package (SSI 10038)

Thank you for your referral dated 20 April 2022 inviting comments from the Heritage Council of NSW on the above State Significant Infrastructure (SSI) to address requirements of the Minister's Conditions of Approval (MCoA).

The relevant SSI conditions are C13 and D21 of SSI approval 10038 issued on 11 March 2021.

The following documents were considered in our assessment:

- *Project Management Plan. Heritage Management Plan. Sydney Metro West – Western Tunnelling Package (HMP)*, prepared by Gamuda and Umwelt, dated 14 April 2022.

Heritage NSW provide the following comments:

General

- Since 1 April 2022, Heritage NSW is part of the NSW Department of Planning and Environment (DPE). References to "*Heritage NSW, Department of Premier and Cabinet*", "*Office of Environment and Heritage*" and "*Heritage Division of OEH*" should be amended throughout the main body of the document, as well as Attachment 2 (Unexpected Finds Procedure) and Attachment 5 (Sydney Metro Exhumation Management Plan) to reflect this change.

Aboriginal cultural heritage

- In accordance with Condition D21 MCoA, Aboriginal archaeological test excavations are required to occur within the construction site areas identified in Table 25 of *Artefact: November 2020*, prepared for the project, including: Parramatta Metro Station, Clyde Stabling and Maintenance Facility, The Bays Station and Parramatta Power Supply Route.
- As per previous advice, dated 8 December 2020 (DOC20/966420-6) Heritage NSW recommends that 'appropriate Aboriginal cultural heritage management measures (that may include conservation, archaeological salvage excavation and community collection) must be implemented based on the results of the archaeological test excavations, any subsequent salvage excavations and the continuing Aboriginal

community consultation'. Based on the information pertaining to Aboriginal cultural heritage matters supplied to Heritage NSW, it is difficult to determine how the HMP fulfils its objective to manage identified Aboriginal cultural values prior to the completion of primary site investigations.

- The supplied HMP outlines a range of strategies to minimise harm to Aboriginal cultural heritage values, including mitigation by way of test excavation (if subsurface potential is identified) and further archaeological excavation (if significant cultural deposits with research potential are identified through testing).
- Specifically, Appendix 8 of the HMP provides a detailed assessment (GML October 2021) of the Aboriginal archaeological potential of the Parramatta Metro Station construction site area, outlining a comprehensive testing and salvage methodology for archaeological investigations required to occur prior to the construction phase of the project.
- It is less clear how the Clyde Stabling and Maintenance Facility Construction Site area, is intended to be and/or is being archaeologically investigated as indicated in the HMP (2022:16) given that there is limited information regarding the proposed/implemented methodologies, omitted from documentation supplied to Heritage NSW.
- Heritage NSW notes that an HMP is a management tool, which outlines management strategies for identified Aboriginal cultural heritage values within the project area. As such, it should not include procedures for primary site investigation and assessment, such as the test excavation that is proposed in the HMP. The objective of a test excavation methodology is to inform the management of the site during construction therefore, any testing should be undertaken as part of the primary site investigations, and the results should be used to inform the development of appropriate management strategies within the HMP. Test excavation is not an appropriate mitigation strategy for inclusion within the HMP.
- In the absence of any test excavation results or clearly articulated supplementary analysis such as that prepared by GML (October 2021), for the Parramatta Metro Station, it is unclear whether the mitigation measures that are subsequently proposed in the HMP are appropriate. The archaeological excavation procedure for the Clyde stabling and maintenance facility Construction Site area is not adequately described or quantified, and without some understanding as to the nature and extent of potential sub-surface deposits, it is difficult to determine whether this proposed management strategy is appropriate.
- It is recommended that any procedures for primary site investigation (ie test excavation) should be removed from the HMP (these procedures should be implemented as part of the initial assessments prior to the preparation of the HMP. The HMP should then be updated following the completion of any necessary test excavation in accordance with MCoA D21, to ensure all management strategies are appropriate to the significance of the identified Aboriginal heritage values in accordance with Section 2.7 of the Guide to Investigating, Assessing and Reporting on Aboriginal cultural heritage in NSW.

If you have any questions regarding the above, please contact Rebecca Yit, Senior Assessments Officer - Archaeologist on Rebecca.Yit@environment.nsw.gov.au

Non-Aboriginal Cultural Heritage

- Unexpected finds procedure and dichotomy of terms 'work' vs 'relic':

- Throughout Attachment 2 entitled '*Unexpected Finds Procedure*,' a clear terminological distinction is made between the term '*work*,' being described as '*culverts, historic pavements, retaining walls, tramlines, rail tracks, turn tables, timber sleepers, cisterns, fences, sheds, buildings and conduits*' (s. 2.2.2) or '*a form of infrastructure such as track or rail tracks, timber sleepers, a culvert, road base, a bridge pier, kerbing, and similar items*' (Appendix 2, Recording Form) and the term '*relic*,' being described as '*a bottle, utensils, plates, cups, household items, tools, implements, and similar items*' (eg Appendix 2, Recording Form).
- It is noted that the two terms are utilised to define distinct and strictly separate typological categories of potential archaeological finds comprising structures and features labelled as '*works*' on the one hand and small finds labelled as '*relics*' on the other. In the case of an unexpected finds procedure, this could be misleading. It could be interpreted that unexpected finds from the category of '*works*' are less likely to be protected under the *Heritage Act 1977* and therefore represent a less sensitive category of unexpected archaeological finds. Therefore, the strict separation of '*works*' and '*relics*' in an unexpected finds procedure, as supported via explicit examples, while not unreasonable, leaves potential for interpretation on behalf of a contractor and self-assessment of historical archaeological finds as not '*relics*' and therefore not protected/reportable.
- It is noted that Section 2.2.1 of Attachment 2 correctly refers to the legal definition of the term '*relic*' under Section 4(1) of the *Heritage Act 1977* as: '*any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.*' Therefore, it must also be noted that similarly to the above, being material evidence and subject to their (local, State or none) significance for demonstrating the past, items such as the ones referred to above strictly as '*relics*' (glass bottles, utensils, plates, cups, etc.) have the potential not to be assessed as - and therefore not to represent - relics under the relics provision of the *Heritage Act 1977*.
- The above also applies to Section 2.3 of Attachment 2, which discusses non-Aboriginal human skeletal remains older than 100 years automatically as relics. While unexpected finds of non-Aboriginal human skeletal remains have very high potential to represent relics and must be reported under s146 of the *Heritage Act 1977*, they can be defined as relics only subject to significance assessment of the remains themselves and/or the archaeological context of their discovery, and their historical and social implications against the relevant criteria.
- It is noted that the unexpected finds procedure makes it clear that it would be in the expertise of the nominated Excavation Director/historical archaeologist to determine whether a given historical archaeological find represents a relic under the *Heritage Act 1977*, however due to the issues as stated above and with the purpose of eliminating any potential confusion, it is recommended that an update of the relevant terminology throughout the document be considered.
- Overall, the HMP as submitted, including the unexpected finds procedure, is sufficiently detailed to address the management of non-Aboriginal cultural

heritage and historical archaeology for the Western Tunnelling Package of Sydney Metro West.

If you have any questions regarding the above, please contact Dr Dragomir Garbov, Senior Assessment Officer at Heritage NSW on 02 9995 6066, or Dragomir.Garbov@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Anna London', with a long horizontal stroke extending to the right.

Anna London

A/Senior Manager – Major Projects

Heritage NSW

Department of Premier and Cabinet

As Delegate of the Heritage Council of NSW

4 May 2022

Attachment 7 – ARDEM 2021

GML Heritage Pty Ltd, Sydney Metro West Parramatta Station Construction Site Archaeological Research Design and Excavation Methodology, report prepared for Sydney Metro November 2021.

Sydney Metro West Parramatta Station Construction Site

Archaeological Research Design &
Excavation Methodology

Report prepared for Sydney Metro

November 2021

Acknowledgement of Country

At GML we acknowledge that we work and live on the land of the First Australians. We know that this land was never ceded, and we respect the rights and interests of Australia's first people in land, culture, and heritage. We acknowledge their Elders past and present and support the concepts of voice, treaty, and truth in the Uluru Statement from the Heart.

Report Register

The following report register documents the development and issue of the report entitled Sydney Metro West Parramatta Station Construction Site—Archaeological Research Design & Excavation Methodology, undertaken by GML Heritage Pty Ltd in accordance with its quality management system.

Job Number	Issue Number	Notes/Description	Issue Date
21-0167	1	Draft 1—Sydney Metro review	9 August 2021
21-0167	2	Draft 2—Sydney Metro review and HNSW consultation	31 August 2021
21-0167	3	Final Draft—DPIE and HNSW review	13 September 2021
21-0167	4	Final—Submission for DPIE approval	15 October 2021
21-0167	5	Final Reissue—DPIE approved	3 November 2021

Quality Assurance

GML Heritage Pty Ltd operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2016.

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

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Executive Summary

Project background

Sydney Metro West is a 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD. Stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays and Sydney CBD. The concept and major civil construction between Westmead and The Bays (Stage 1 of the planning approval process for Sydney Metro West) were approved as a State Significant Infrastructure project (SSI-10038) on 11 March 2021.

The Sydney Metro West Concept and Stage 1 Environmental Impact Statement (EIS) identified that the Parramatta station construction site had potential for a significant archaeological resource. The SSI-10038 Conditions of Approval included requirements for archaeological management at the site. This report responds to the requirements of Condition D25—the preparation of a revised Archaeological Research Design and Excavation Methodology.

This report has been prepared to guide archaeological investigations and management for the Parramatta station construction site. It includes a detailed site history, a revised historical archaeological assessment and a site-specific research design and methodology that consider both historical and Aboriginal archaeology. It includes a provision for early investigations of state significant archaeology and the Parramatta Convict Drain. This report also identifies the archaeological methods for construction works and the frameworks for post-excavation analysis, research, reporting, collection management and public outcomes required to meet the archaeological conditions.

Aboriginal heritage

A separate report has been prepared for Aboriginal heritage. The site has potential for Aboriginal archaeology and summary information is included in this report. Research questions and excavation methodologies for both Aboriginal and historical archaeology are included.

A summary of the Aboriginal archaeology is provided in Section 3.

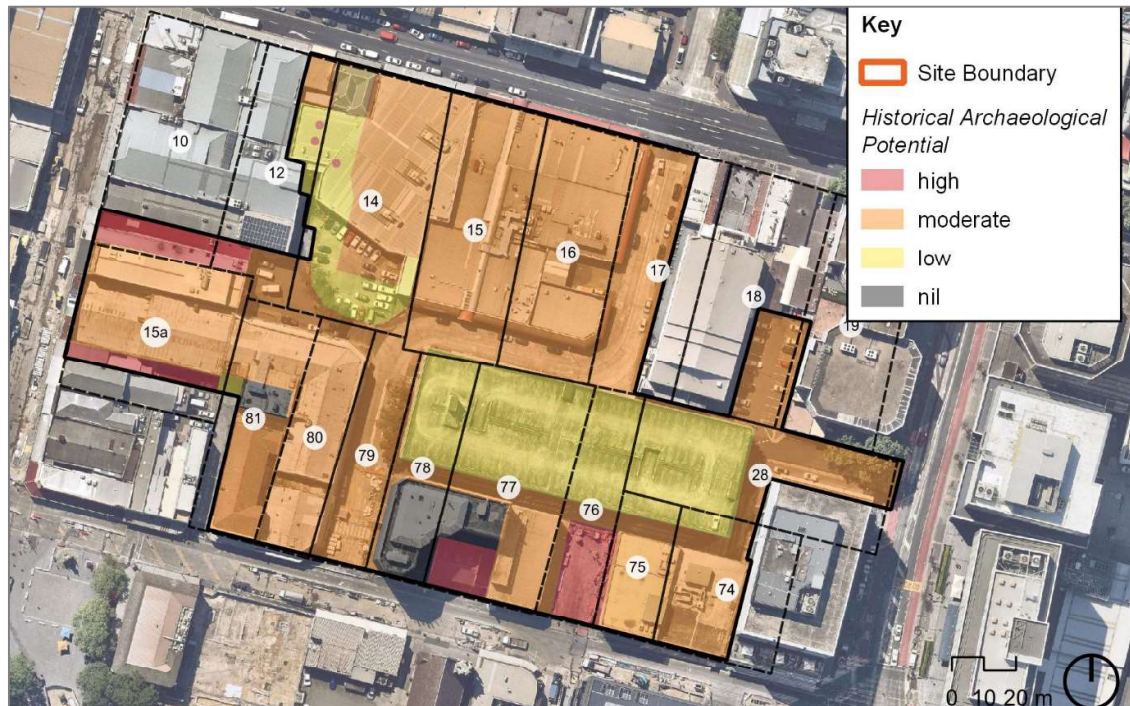
Historical archaeology

The historical development and occupation of the site is complex. It includes all or part of seven original allotments with five recorded buildings in the 1790s. By the end of the nineteenth century the site included 33 subdivisions with over 80 structures (buildings, sheds, outhouses, wells/cisterns) recorded on historical plans. However, the historical development can be divided into five broad phases that would generally be reflected in the archaeology across the site.

- Phase 1: Early colonial settlement (1788–c1820s)
- Phase 2: Leases and town development (c1820s–c1860s)
- Phase 3: Urbanisation and industry (c1860s–c1880s)
- Phase 4: Commercial development (c1880s–c1950s)
- Phase 5: Modern developments (c1950s–present)

Archaeological potential

The site has potential for multiple phases of historical archaeology dating from the late eighteenth century. The archaeological potential across the site and within each allotment varies. This has been synthesised and collated in one map to illustrate the archaeological potential across the site.



Historical archaeological potential mapping for the site. (Source: Nearmap with GML overlay)

Archaeological significance

The Parramatta metro station construction site has potential to contain a range of archaeology with historical, associative, aesthetic, social, research, rarity and representative values. The archaeology has the ability to demonstrate key aspects relating to the convict penal system and establishment of the colony of NSW, and the evolution of Parramatta from an agricultural settlement to an urban centre, including its commercial and industrial development. The archaeology is associated with significant groups, such as convicts, emancipists and free settlers, whose labour and endeavours contributed to the success of the colony in the early decades. The archaeology is also associated with a range of individuals and businesses that were important to the culture and growth of Parramatta in the nineteenth century. Evidence of Ritchie’s Ironworks and other local manufacturing may display technical achievements and contribution to the industrial development of Parramatta.

The research potential of the site is considerable and is significant a local and state level. Archaeological investigations of the site can address an extensive set of research questions and contribute to our knowledge and understanding of the colonial landscape, the lives of convicts and free settlers, transformation, urbanisation and improvement, commerce and industry in the late eighteenth through to the early twentieth centuries. The social value of the archaeology could be realised through public programs and interpretation of the findings. Aspects of the archaeology are rare—particularly in the early colonial phase, including evidence of the environment, landscape, convicts and early settlers.

The opportunity to undertake archaeological investigations and comparative analysis of almost an entire city block is also rare at a state level. The site, along with others, is representative of the urban archaeology of Parramatta.

The significance level of the archaeology varies across the site. Phase 1 (1788–c1820s) archaeology—anticipated in the allotments fronting George and Church Street—is state significant for historical, associative, research and rarity values. This includes evidence of the environment, convicts, early settlers and the transformation from a penal to a free colony. Phases 2, 3 and 4 (c1820s–c1900s) archaeology—expected across most areas of the site—is locally significant. This includes the archaeology associated with the development of Parramatta and the lives of those who contributed to it, and the archaeology of Ritchie’s Ironworks and the Town Drain. It is noted that the research value of late eighteenth and nineteenth century archaeology (Phases 1-3/4) of the site could be significant at a state level given the potential for a neighbourhood study.

The history for the site is provided in Section 2. The detailed historical archaeological assessment for the site is presented in Section 4.

Research design

Archaeological investigations at the site have the potential to address an extensive range of research questions. The following research topics and themes have been developed for the site: sedimentology; Aboriginal archaeology; environment and the colonial landscape; contact archaeology; convicts and free settlers; urbanisation; improvement; commerce and economies; industry and manufacturing; and material culture.

The research design and questions are provided in Section 5.

Archaeological methodologies

Construction impacts within the site are extensive. The archaeological investigation program developed to manage and mitigate impacts includes three main stages—fieldwork, post-excavation analysis and reporting. Fieldwork methods include test excavation, design review, salvage excavations and monitoring. Post-excavation includes detailed stratigraphic analysis and descriptions of findings, artefact and scientific analyses, historical and archaeological research to respond to the project research design. Several volumes of reports will be prepared for the project. The public archaeology strategy includes engagement activities during excavations, media posts and publications.

Detailed methodologies are provided in Section 6.

Introduction



1 Introduction

1.1 Project background

Sydney Metro West is a 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD. Stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays and Sydney CBD. The concept and major civil construction between Westmead and The Bays (Stage 1 of the planning approval process for Sydney Metro West) were approved as a State Significant Infrastructure project (SSI-10038) on 11 March 2021.

1.1.1 Project staging

The approved concept includes:

- construction and operation of new passenger rail infrastructure between Westmead and the CBD of Sydney, including:
 - tunnels, stations (including surrounding areas) and associated rail facilities
 - stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- modification of existing rail infrastructure (including stations and surrounding areas).

Approved major civil construction work for Sydney Metro West between Westmead and The Bays (Stage 1 of the planning approval process) includes:

- tunnel excavation including tunnel support activities between Westmead and The Bays
- station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Docks and The Bays
- shaft excavation for services facilities
- civil work for the stabling and maintenance facility at Clyde.

Stages of the planning approval process for Sydney Metro West currently underway include:

- all major civil construction works including station excavation and tunnelling between The Bays and Sydney CBD (Stage 2 of the planning approval process)
- tunnel fitout, construction of stations, ancillary facilities and station precincts, and operation and maintenance of the Sydney Metro West line.

1.2 Purpose of this report

The Sydney Metro West Concept and Stage 1 Environmental Impact Statement (EIS) identified that the Parramatta station construction site had potential for a significant archaeological resource. The SSI-10038 Conditions of Approval included requirements for archaeological management at the site. This report responds to the requirements of Condition D25—the preparation of a revised Archaeological Research Design and Excavation Methodology.

Condition D25

*Before commencement of any excavation at Parramatta and The Bays metro station construction sites, a revised **Archaeological Research Design and Excavation Methodology(s)** must be prepared in accordance with Heritage Council of NSW guidelines and with reference to the detailed design of Stage 1 construction of the CSSI to guide archaeological excavation. The revised **Archaeological Research Design and Excavation Methodology(s)** must be prepared by the Excavation Director (approved under Condition D27) and must include:*

- a) *site specific research for the Parramatta and The Bays metro station construction sites which is conducted by a professional historian to clearly articulate the historical development of the allotments to assist with the reassessment of potential and significance*
- b) *comparative analysis from archaeological investigations in Parramatta (including theses, publications and grey literature reports)*
- c) *preparation of research questions based on the additional site-specific research required by this condition, and relevant research agendas from previously excavated early historical occupation in Parramatta including recovered artefact assemblages*
- d) *a reconsideration of archaeological methods to manage the sites based on this additional assessment.*

The revised Archaeological Research Design and Excavation Methodology(s) must apply to both Parramatta and The Bays metro station construction sites and be prepared in consultation with Heritage NSW and Place Management NSW (in respect of The Bays) and submitted to the Planning Secretary for approval.

This report has been prepared to guide archaeological investigations and management for the Parramatta station construction site. It includes a detailed site history outlining the development of each allotment, comparative analysis, a revised historical archaeological potential and significance assessment, and a site-specific archaeological research design and methodology.

The research design and methodology sections consider both historical and Aboriginal archaeology and provide for an integrated excavation approach (as required by Condition D22). It includes a provision for early investigations of state significant archaeology and the Parramatta Convict Drain, as required by Condition D26. This report also identifies the archaeological methods for various construction activities during the project. The report also includes the framework and methods for post-excavation analysis, research, reporting, collection management and public outcomes required to meet the archaeological conditions.

A separate report has been prepared for Aboriginal archaeology.¹

1.2.1 Terminology

This report is the revised ‘Archaeological Research Design and Excavation Methodology’ required by Condition D25. It is referred to as ‘the ARD’ throughout this report.

Another term used for the ‘Excavation Methodology’ is ‘Archaeological Method Statement’. These are the same thing.

The ‘Parramatta metro station construction site’ is referred to as ‘the site’ and is the subject of this ARD.

1.3 Site location

The Parramatta metro station construction site (the site) is located within Parramatta CBD. It is bounded by George, Smith, Macquarie and Church Streets. It currently contains commercial buildings, a multistorey car park and two laneways—Horwood Place and Macquarie Lane.

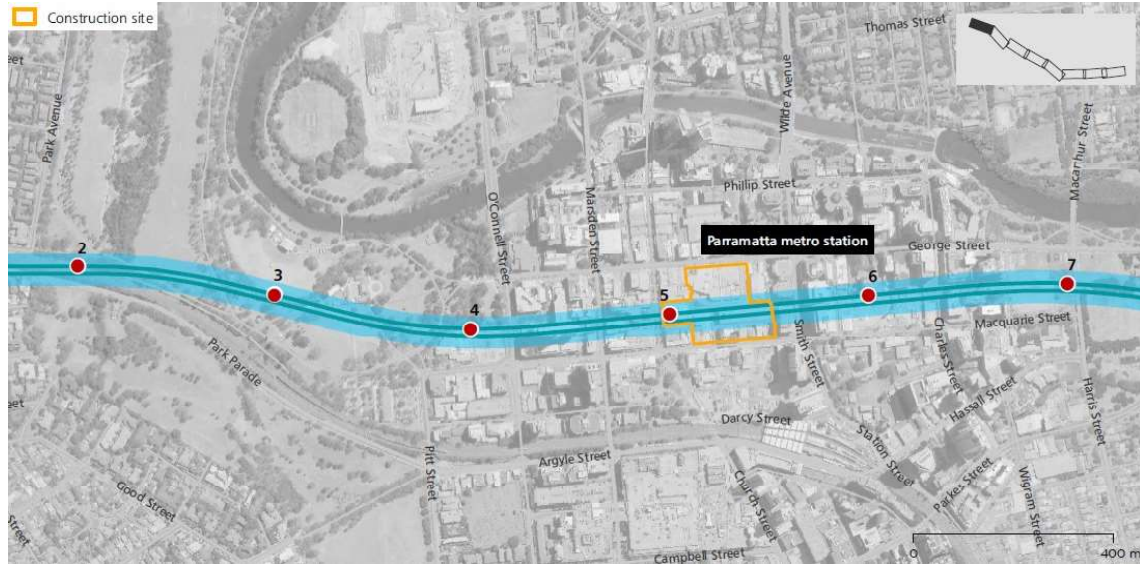


Figure 1.1 The Sydney Metro West alignment and the Parramatta metro station construction site. (Source: Sydney Metro 2021)

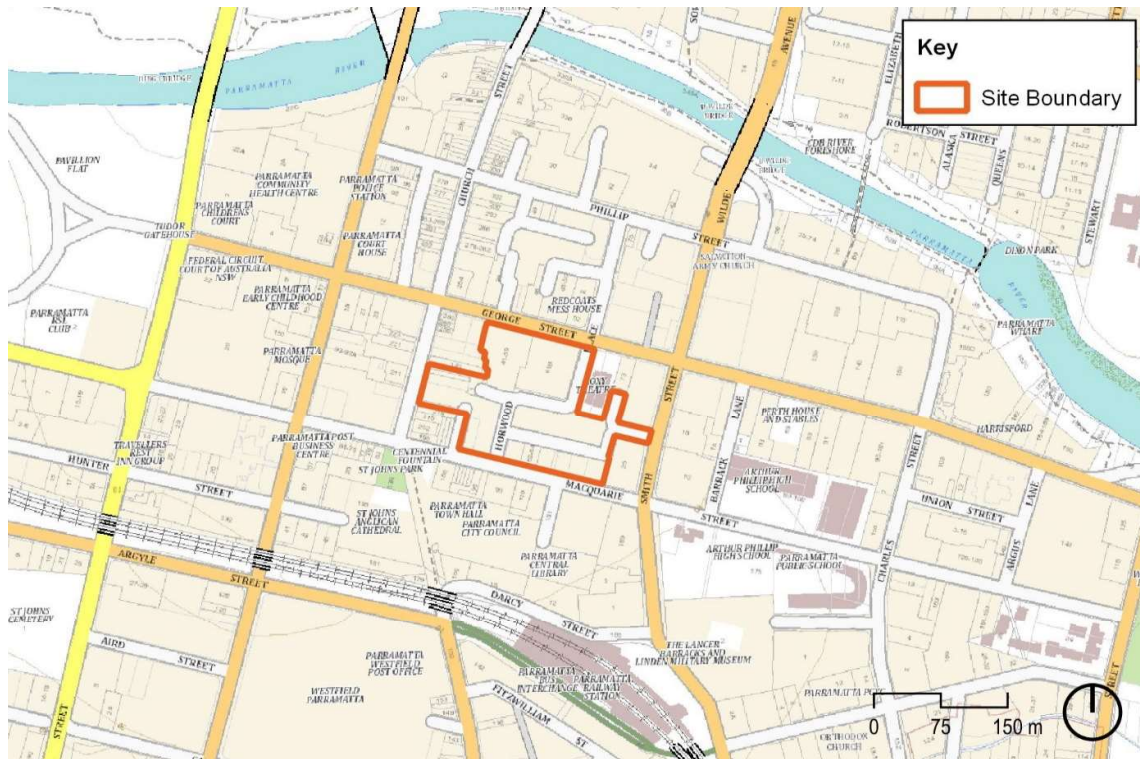


Figure 1.2 The site within Parramatta CBD. (Source: GML 2021)

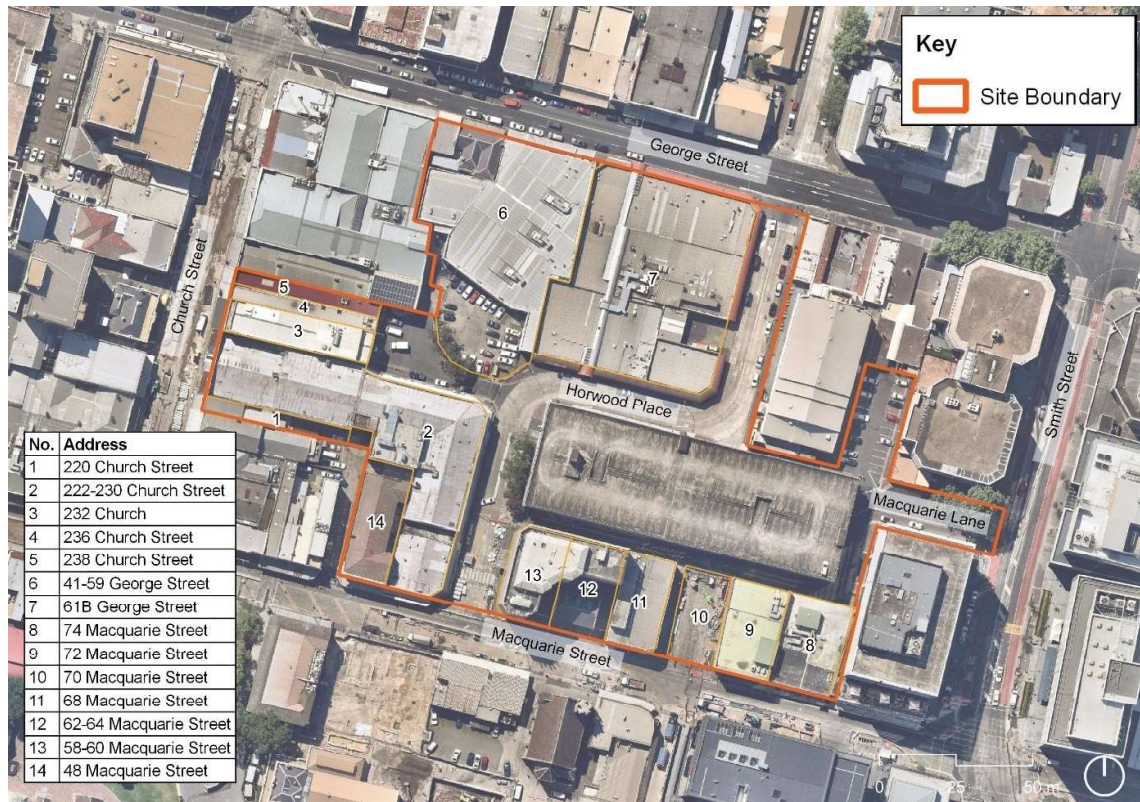


Figure 1.3 Detail showing the site on a current aerial photograph and identifying the street addresses. (Source: Nearmap with GML additions)

1.4 Approach and methodology

The ARD includes a site-specific detailed historical archaeological assessment, research design and investigation methodology for the Parramatta metro station construction site. It has been prepared as a stand-alone report and supersedes previous assessment and methodologies for the site, including the relevant sections in the reports identified in Section 1.5.

The historical archaeological assessment has been undertaken in accordance with the following Heritage Council of NSW and best practice guidelines:

- *NSW Heritage Manual*, Archaeological Assessments (NSW Heritage Office 1996)
- *NSW Heritage Manual*, Assessing Heritage Significance (NSW Heritage Office 2001)
- *Assessing Significance for Historical Archaeological Sites and Relics* (NSW Heritage Branch 2009)
- *Practice Note—The Burra Charter and Archaeological Practice* (Australia ICOMOS 2013).

The research design has been informed by the framework developed in the Parramatta Historical Archaeological Landscape Management Study (PHALMS).² It also considers the research agendas and findings from recent large-scale archaeological investigations such as the Parramatta Square and Parramatta Light Rail projects.

1.5 Previous reports

The historical archaeology of the site has been considered in previous reports prepared for the Sydney Metro West project. These are:

- Sydney Metro West, Westmead to The Bays and Sydney CBD, Environmental Impact Statement, Concept and Stage 1—Technical Paper 3, Non-Aboriginal Archaeological Assessment, prepared by Artefact Heritage, April 2020
- Sydney Metro West, Westmead to The Bays and Sydney CBD, Submissions Report, Concept and Stage 1—Appendix F, Non-Aboriginal Archaeological Research Design, prepared by Artefact Heritage, October 2020.

1.6 Limitations

- The COVID-19 restrictions and lockdown during the preparation of this report limited site access and an inspection was not undertaken. The project team is familiar with Parramatta and the site, and our desktop research and analysis of available data has been thorough. However, there may be nuances or variations in the current site condition relevant to this assessment that have not been identified as a result of the lockdown.
- Due to the COVID-19 lockdown, the site history has been based on a detailed desktop survey, a review of existing publications, reports and records held by GML, and reports by other heritage consultancies. We were unable to access the various state and local archives due to the public health orders at the time of writing.
- Basement data for the site was incomplete. We have erred on the side of caution and assumed buildings without available data do not have basements.
- We have considered localised impacts from existing services in our archaeological potential assessment. However, as a detailed survey of inground services was not available we do not have exact location details of the services within the properties or laneways.
- Macquarie Lane (Lot 18) is included in our archaeological assessment. However, detailed historical research has not been undertaken as excavation/construction impact in this area is not proposed. The area is to be used for site access and laydown.

1.7 Authorship

This report has been prepared by Abi Cryerhall (GML Principal), Sophie Jennings (GML Senior Heritage Consultant, Archaeologist) and Léonie Masson (GML Senior Heritage Consultant, Historian). Dr Penny Crook (Historical Artefacts Specialist) provided input to the research design and artefact management strategy. Sections on Aboriginal archaeology are from the Aboriginal Heritage Report prepared by Dr Tim Owen (GML Principal). This report has been reviewed by Sharon Veale (GML CEO).

The authors would like to acknowledge the input and support from Cath Snelgrove (Sydney Metro Senior Heritage Advisor) and Georgia Wright (Sydney Metro Environment Officer—Heritage) during the preparation of this report.

1.8 Compliance checklist

The following table provides a schedule of the Conditions of Approval (CoA) that are applicable to archaeology and relevant to this report.

CoA	Details	Compliance
Non-Aboriginal heritage		
D15	Before commencement of any excavation at the Parramatta metro station construction site, a detailed investigation must be undertaken to precisely locate the Parramatta Convict Drain. All options to retain the Parramatta Convict Drain <i>in situ</i> must be considered. If retention of any part of the Parramatta Convict Drain located <i>in situ</i> is not feasible, the Proponent must satisfactorily demonstrate to the Planning Secretary, why its removal is appropriate. If it is not feasible to retain the Parramatta Convict Drain <i>in situ</i> , archival recording must be undertaken on the affected section of the item in accordance with Heritage Council of NSW guidelines.	This condition links with D26. The archaeological investigation methodology for the Parramatta Convict Drain is provided in Section 6.3.2 The archaeological management review process is provided in 6.4, which will consider options for the drain to be retained <i>in situ</i> . The recording methods, where it is not feasible to retain the Parramatta Convict Drain <i>in situ</i> , are provided in Section 6.8. The reporting requirements are included in Sections 6.4 and 6.16.
Aboriginal heritage		
D22	An Aboriginal Archaeological Test Excavation Methodology(s) must be prepared and appropriately integrated with the revised Archaeological Research Design and Excavation Methodology . The Aboriginal Archaeological Salvage Excavation Methodology(s) must be prepared after analysis of the test excavation results.	A summary of the Aboriginal archaeological potential is provided in Section 3. Research questions for Aboriginal archaeology are included in Section 5. The integrated approach to archaeological excavation methods for both historical and Aboriginal archaeological investigations is provided in Section 6.
Excavation and archaeology		
D25	Before commencement of any excavation at Parramatta and The Bays metro station construction sites, a revised Archaeological Research Design and Excavation Methodology(s) must be prepared in accordance with Heritage Council of NSW guidelines and with reference to the detailed design of Stage 1 construction of the CSSI to guide archaeological excavation. The revised Archaeological Research Design and Excavation Methodology(s) must be prepared by the Excavation Director (approved under Condition D27) and must include:	<p>The revised ARD for the Parramatta Station construction site has been prepared prior to excavation at the site.</p> <p>This report has been prepared by experienced historical archaeologists and Excavation Directors approved under Condition D27—Abi Cryerhall and Sophie Jennings.</p> <p>Abi Cryerhall has over 23 years' experience as an archaeologist. Qualifications:</p> <ul style="list-style-type: none"> BA (Joint Hons), History of Art & Architecture / Ancient History & Archaeology, Trinity College Dublin, Ireland. <p>Sophie Jennings has over 12 years' experience as an archaeologist. Qualifications:</p> <ul style="list-style-type: none"> Bachelor of Arts (Honours) (Archaeology), University of Western Australia.
	a) site specific research for the Parramatta and The Bays metro station construction	A detailed site history is provided in Section 2 of this report. It was prepared by Léonie Masson—a

CoA Details	Compliance
<p>sites which is conducted by a professional historian to clearly articulate the historical development of the allotments to assist with the reassessment of potential and significance</p>	<p>professional historian with over 20 years' experience. Qualifications:</p> <ul style="list-style-type: none"> • Bachelor of Arts (Library Science), University of Technology Sydney • Graduate Diploma of Local and Applied History, University of New England.
<p>b) comparative analysis from archaeological investigations in Parramatta (including theses, publications and grey literature reports)</p>	<p>A comprehensive set of documents has been reviewed, including archaeological assessments, research designs and excavation reports available from the Heritage NSW library, online grey literature, and GML's projects and reference collection. This analysis has informed the history, archaeological assessment and research design.</p> <p>See Sections 4.3, 5.2.2 and 5.3.3. Other references are provided in endnotes throughout the report and in the bibliography in Section 7.</p>
<p>c) preparation of research questions based on the additional site-specific research required by this condition, and relevant research agendas from previously excavated early historical occupation in Parramatta including recovered artefact assemblages</p>	<p>The research design in Section 5 includes a framework and questions relevant to the potential archaeology of the site identified in Sections 3 and 4. These are referenced in Sections 4.3, 5.2.2 and 5.3.3.</p>
<p>d) a reconsideration of archaeological methods to manage the sites based on this additional assessment.</p>	<p>A revised, site-specific methodology for archaeological investigations is provided in Section 6. This includes an integrated methodology for historical and Aboriginal archaeology during the various stages of construction and activities with potential to impact archaeology.</p>
<p>The revised Archaeological Research Design and Excavation Methodology(s) must apply to both Parramatta and The Bays metro station construction sites and be prepared in consultation with Heritage NSW and Place Management NSW (in respect of The Bays) and submitted to the Planning Secretary for approval.</p>	<p>Consultation with Heritage NSW during the preparation of this report occurred on:</p> <ul style="list-style-type: none"> • 14 July 2021—initial consult during preliminary research and existing data-collating stage to confirm approach to revised assessment and research design. • 18 August 2021—Sydney Metro Heritage Working Group presentation of findings of the revised assessment, research design and methodology. • 7 September 2021—Historical archaeology focused discussion with Heritage NSW and draft ARD submission for preliminary review and comment. • 11 October 2021—Comments received from Heritage NSW and ARD updated. <p>Refer to Appendix D for consultation details.</p>
<p>The revised Archaeological Research Design and Excavation Methodology(s) must be implemented throughout the archaeological excavation programs.</p>	<p>This ARD will be implemented throughout the archaeological excavation program for the approved project (SSI-10038). If required at a later stage of the project, archaeological management would be consistent with what is outlined in this ARD.</p>

CoA Details	Compliance
<p><i>Note: Nothing in these conditions prevents the Archaeological Research Design and Excavation Methodology to be separate procedures.</i></p>	<p>This ARD is for the Parramatta station construction site. It includes both the research design and methodology for archaeological investigations within the site.</p>
<p>D26 The revised Archaeological Research Design and Excavation Methodology(s) must include provide for early physical investigation of areas of impact identified to contain State significant archaeology or subterranean heritage items in the research design to inform excavation in these areas. This must include the Parramatta and The Bays metro station sites, including Parramatta Convict Drain, Parramatta Sand Body, White Bay Power Station (inlet) and Beattie Stormwater Channel.</p>	<p>Section 6.3.2 outlines the methodology for test excavation in areas with potential for state significant archaeology and the Parramatta Convict Drain. Section 6.3.3 outlines the methodology for Aboriginal archaeological test excavation. This methodology addresses the Parramatta Sand Body (PSB). Section 6.4 outlines the process to review opportunities to conserve or reinterpret state significant archaeology and the Town Drain.</p>
<p>D27 Before commencement of archaeological excavation, the Proponent must nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director [sic] (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary, in consultation with Heritage NSW. The Excavation Director must be present to oversee excavation, advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the approved Archaeological Research Design and Excavation Methodology(s) required under Condition D25 of this schedule. Aboriginal archaeological excavations must be conducted by a suitably qualified person in accordance with the requirements of the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> (DECCW 2010). More than one Excavation Director may be engaged for Stage 1 of the CSSI to exercise the functions required under the conditions of this approval.</p>	<p>Abi Cryerhall (GML Principal) has been approved as the historical archaeology primary Excavation Director for Stage 1 works at the Parramatta station construction site.</p> <p>Sophie Jennings (GML Senior Consultant) has been approved as the historical archaeology secondary Excavation Director for Stage 1 works at the Parramatta station construction site.</p> <p>Dr Tim Owen (GML Principal) has been approved as the Aboriginal archaeology Excavation Director for Stage 1 works at the Parramatta station construction site.</p> <p>Refer to letter from the Department of Industry and Planning to Sydney Metro dated 8 September 2021.</p>
<p>D28 Following completion of archaeological excavation programs, a Final Excavation Report and an Aboriginal Cultural Heritage Excavation Report must be prepared that includes further detailed and site-specific historical research undertaken to enhance the final reporting, and results of archaeological excavations. The report must include details of any significant artefacts recovered (salvaged), where they are located and details of their ongoing conservation. The Final Excavation Report must document significant results and artefacts which may be re-used in future stages of the CSSI. The Final Excavation Report must</p>	<p>Sections 6.14 and 6.15 identify the post-excavation analysis required to respond to the research design set out in Section 5. Sections 6.16 and 6.17 identify the approach to reporting and the content outline for the Final Excavation Report. Section 6.18 outlines the approach to artefact collection management.</p>

CoA	Details	Compliance
	be prepared in accordance with guidelines and standards required by Heritage Council of NSW.	
D29	The Final Excavation Report and Aboriginal Cultural Heritage Excavation Report must be submitted to the Planning Secretary, Heritage NSW and the Relevant Council for information no later than 24 months after the completion of the archaeological excavation.	Section 6.16 and 6.17 identify the required timeframe for submission of the final reports.
D30	In the event the CSSI salvages state significant historical archaeology associated with early convict occupation at the Parramatta metro station construction site for which retention and future conservation is not possible:	
	a) the key findings of the archaeological investigations must be documented which explain their significance within the context of Parramatta and NSW no later than two (2) years after the completion of the archaeological excavations	Sections 6.14 and 6.16 provide the post-excavation analysis and reporting approach. This will include all archaeology—state and locally significant—investigated and salvaged by the project.
	b) provide for the curation, display and public access of artefacts, site records and final reports.	Sections 6.18 and 6.19 outline the approach for collection management and archaeological interpretation.

Note: In reference to (b) above, this may involve partnerships with museums, local heritage centres and/or universities.

1.9 Endnotes

- ¹ GML Heritage 2021, Sydney Metro West Parramatta Station Construction Site Aboriginal Heritage Report, report prepared for Sydney Metro.
- ² Godden Mackay Logan 2000, Parramatta Historical Archaeological Landscape Management Study, report prepared for City of Parramatta.

History

2 History

2.1 Overview

This section provides a history of Parramatta¹ with particular focus on the course and pattern of development at the Parramatta station construction site. It begins by considering the geological formation processes which left the Parramatta area rich in resources and made it an attractive location for the waves of people that came to call it home. It looks at the phases of human activity in Parramatta, from its occupation and use by Aboriginal people in the deep past, to the impact and disruption of colonisation and introduced land use processes. Subsequent and more recent decades of growth and change at Parramatta are explored, as it has emerged to become a major urban centre in metropolitan Sydney and home to an extraordinarily diverse population. This broader historical overview provides context for the detailed site history of the Parramatta station construction site. The detailed site history outlines the development, land ownership and occupation of each allotment in, or partly within, the site.

2.2 A history of Parramatta

2.2.1 Natural shaping forces

Forty-five million years ago, after the Australian continent broke away from Gondwana, tectonic forces within and beyond the Sydney basin split the stone strata into the landforms, watercourses and harbours that define Sydney today. Parramatta River started as several small creeks, but later gathered pace and volume, carving out the valley that became Sydney Harbour. At the end of the most recent ice age (10,000 years ago), waters began to rise and drowned the valleys of the Parramatta and Hawkesbury rivers.²

Volcanic lava from a molten reservoir pushed through the earth's surface, creating the outcrop which came to be known as Prospect Hill. The erosion of Prospect Hill mixed with the clay shale of the earth surface and was carried downstream. This process helped create the rich, fertile alluvial soils—made up of volcanic rock and Wianamatta shales—that continue to characterise the Parramatta area. A thick timbered landscape grew with vast eucalypt forests of red gum, spotted gum, grey box, woollybutt, stringybark and ironbark. The Cumberland Plain Woodland spread out to the south and west of Parramatta and the Turpentine Ironbark Forest stretched to the northeast. These fertile soils and bountiful woodlands were rich resources that helped shape human use and occupation of Parramatta.

2.2.2 Burramattagal

The Burramattagal people of the Darug language group were the next great force to shape the landscape. Their deep connection to the place is reflected in the anglicised name 'Parramatta'. This translates as 'the head of the river' or 'the place where eels lie down'.³ Neighbours of the Burramattagal included the Wangal to the east, the Toongagal (Tugagal) near Prospect/Toongabbie and the Bidjigal to the north and west.⁴ Such descriptions were recorded by non-Aboriginal people and are not likely to accurately reflect or interpret traditional linguistic or clan group boundaries.

Parramatta's combination of freshwater and saltwater environments provided rich food resources for the Burramattagal. The freshwater streams that entered the river supported ducks, mullet, crayfish, shellfish and turtles, while the river itself would have provided saltwater food sources such as fish,

shellfish, molluscs and eels.⁵ Women fished from canoes using hooks made of shell and bone, while men speared fish from the shore. As the traditional interpretation of 'Burramattagal' implies, eels were a popular source of food in the area, and were caught with pronged spears or traps.⁶ Yams were gathered from along the riverbed and were an important staple for the Aboriginal groups here.

The surrounding woodland of the Cumberland Plain was another important resource for the Burramattagal. The forest was home to animals that would have been hunted for food such as possums (Wiyali/wali), goannas (Wirriga), wallabies (Wallabar) and kangaroos (Buru). Skins and furs were used to create clothing and other goods. Fruits such as native berries, and insects like ants and witchetty grubs, were collected from the forest and formed an essential part of the Burramattagal people's diet. Seeds were collected, ground into flour and baked into non-perishable cakes that could be stored and traded when needed.⁷

Aboriginal people's use of the vegetation also created an industry of transport vessels, weapons and tools. Stringybarks were prized for canoe manufacture. Spears were made from the stalks of the grass tree, barbed with red silcrete stone, shell or bone and glued with eucalypt gum. Timber and tree roots were forged into digging implements and bark was used for carrying water and building shelters and canoes. Bark fibres were woven into string and rope.

Aboriginal people also actively shaped the landscape and left an imprint that we can still see today. The park-like character of the forest was shaped by firestick farming, which encouraged the development of a grassy understorey intended to attract game and develop soils where yams and other seeds could flourish and then be harvested. Historical sources documented these practices. In 1788, George Worgan recorded his observations of firestick farming in the area without necessarily understanding the implications of this Aboriginal method of land management:

*a great extent of parklike country and the trees of a moderate size at a moderate distance from each other, the soil, apparently fitted to produce any kind of Grain, and clothed with extraordinarily luxuriant grass ... It is something singular, that all, of this kind of trees, and many others, appear to have been partly burnt, the bark of them being like Charcoal.*⁸

2.2.3 Resistance and resilience

British colonisation of Parramatta from late 1788 marked the beginning of great environmental, cultural, demographic and economic upheaval for Aboriginal groups living in and around Parramatta. Dispossession and dislocation, the restriction of access to Country and resources, widespread disease and violence were the reality for many and had long-lasting impacts on the Aboriginal communities there.

Despite these very real consequences, during the early years of the colony Aboriginal groups showed a remarkable ability to adapt to the new conditions and forge relationships that would help them to survive. Initial fears of an Aboriginal attack on the new settlement at Parramatta were not realised. Instead, a barter system developed between military officers and Aboriginal figures like Bolloderee (Ballederry), who, as David Collins recorded:

*found it [in] their interest to sell or exchange fish among the people of Parramatta; they being contented to receive a small quantity of either bread or salt meat in barter for mullet, bream and other fish.*⁹

Parramatta Park, formerly known as the Government Domain, was an important site of contact between Aboriginal people and colonists. Well-known Aboriginal figures in the colony such as Arabanoo, Colebee and Bennelong also frequently visited Rose Hill.¹⁰

Despite these early relationships and the success of some of these interactions, tensions rose as colonists increasingly encroached on Aboriginal land and intensively developed it for grazing and farming. Watkin Tench recorded that the spearing of Governor Phillip at Manly was in part punishment for colonists moving into Rose Hill. This was according to a Burramattagal elder, Maugoran, of whom Phillip recounted:

*If this man's information could be depended on, the natives are very angry at so many people being sent to Rose Hill ... certain as it is that wherever our colonists fix themselves, the natives are obliged to leave that part of the country.*¹¹

As a result, Phillip deployed a detachment to Parramatta, and by 1791 the barter system had ended. Aggravating deteriorating relations was the destruction of Bolloderee's canoe by up to six convicts and his subsequent spearing of one of the men. As David Collins described:

*[the] instant effect of all this was that the natives discontinued to bring up fish and the spearing of Balldoree's was followed by the Governor's strictly forbidding him to appear again in any of the settlements; the other natives, his friends, being alarmed, Parramatta was seldom visited by any of them, and all commerce with them was destroyed.*¹²

The following year a warrior named Pemulwuy led guerrilla raids on settlers at Prospect, Toongabbie, Georges River, Parramatta, Brickfield Hill and the Hawkesbury River. The raids were made for food such as corn or as retribution for violence against Aboriginal people. David Collins suggested that some of Pemulwuy's actions were in retaliation for the kidnapping of Aboriginal children.¹³ One of the attacks is believed to have taken place at the convergence of Harris, Macquarie and George Streets in the area which became Robin Thomas Reserve. On 22 March 1797, Pemulwuy, along with 100 warriors, crossed Parramatta River and entered the town in formation moving through present-day George Street. Pemulwuy was shot in the battle by colonists but recovered quickly and escaped from captivity in hospital. Pemulwuy's resilience fuelled mythology of his invincibility and he continued to conduct raids against the British for five years. In 1801, Governor King issued an order that Aboriginal people near Parramatta, Georges River and Prospect could be shot on sight and offered a reward for the death or capture of Pemulwuy. On 1 June 1802, Pemulwuy was shot dead by Henry Hacking; his head was cut off and sent to England. Pemulwuy's son Tedbury continued the campaign against colonists, while also befriending wealthy pastoralist John Macarthur and frequently visiting his wife Elizabeth. He too was shot dead by another colonist in Parramatta in 1810.

The Parramatta Native Institution, which operated between 1814 and 1832 at the corner of Macquarie and Church Streets, represents one of the earliest attempts by the colonial government to manage the relationship between the colonising power and the Aboriginal population. One of the policies set out by Governor Macquarie for the establishment of the Parramatta Native Institution—and carried over into the Blacktown Native Institution which followed—was the removal of Aboriginal children from their families to live and be schooled at the institution. In 1832, the institute was relocated from Parramatta to Blacktown. These institutions were the genesis of the ideology and policies that created the Stolen Generations.

From this time onward, interactions between Europeans and the Aboriginal community of Parramatta were increasingly characterised by policies of assimilation and control. Some Darug people were taken on as employees by landholders, establishing a new pattern of relationships between colonists and locals.¹⁴ From the 1850s a range of missions and protectorates were established with the intention of attempting to care for—but also to control and acculturate—Aboriginal people. The

Aborigines Protection Board was formed in 1883, and missions run by religious groups at Katoomba and at Blacktown were established to Christianise and educate Aboriginal people in Western practices in preparation for work.¹⁵ Men found fencing or labouring work on settlers' properties whilst women worked as domestic servants. Many of the Darug people lived at reserves in Sackville and the Burratorang Valley or at missions in Katoomba, La Perouse and Plumpton.¹⁶ Many Aboriginal people were forced to relocate to the reserves, mourning the loss of access to traditional Country, life and culture and struggling to adjust to the profound changes wrought under colonialism. During these years many Aboriginal people lived in 'quiet seclusion' under the watchful gaze and control of the Board.¹⁷ Within Parramatta, there are limited archival records of interactions between the Darug and settlers during the late nineteenth century.

Despite these efforts to control and assimilate Aboriginal people, and the destructive impact of colonisation, the Darug were resilient. They maintained their cultural knowledge and connections to Country and developed communities that remain thriving in Western Sydney today. The Darug people continue to live and work in the region and celebrate their culture and solidarity in both old ways and new. Aboriginal people actively contribute to the life of the modern city, famously playing in sports teams like the much-loved Parramatta Eels, and caring for Country through the management and conservation of significant places.

2.2.4 Planning for the future

The new colony based at Sydney Cove was in very real danger of starvation, as early attempts at agriculture had had limited success and there were many mouths to feed.¹⁸ Phillip sent out scouts to find better farmland, and the rich soils and water supply in Parramatta meant that a settlement was soon established here. Originally named Rose Hill, the settlement was founded on 3 November 1788 and became a priority for the colony and its hope for survival. Rose Hill grew quickly, receiving a larger supply of the healthiest and most skilled convicts to maximise the potential for food production.¹⁹ The early settlement was very basic and likely consisted of just a redoubt containing a barrack and provision store, a superintendent's house with a barn and granary and some small huts which accommodated the convict workforce.

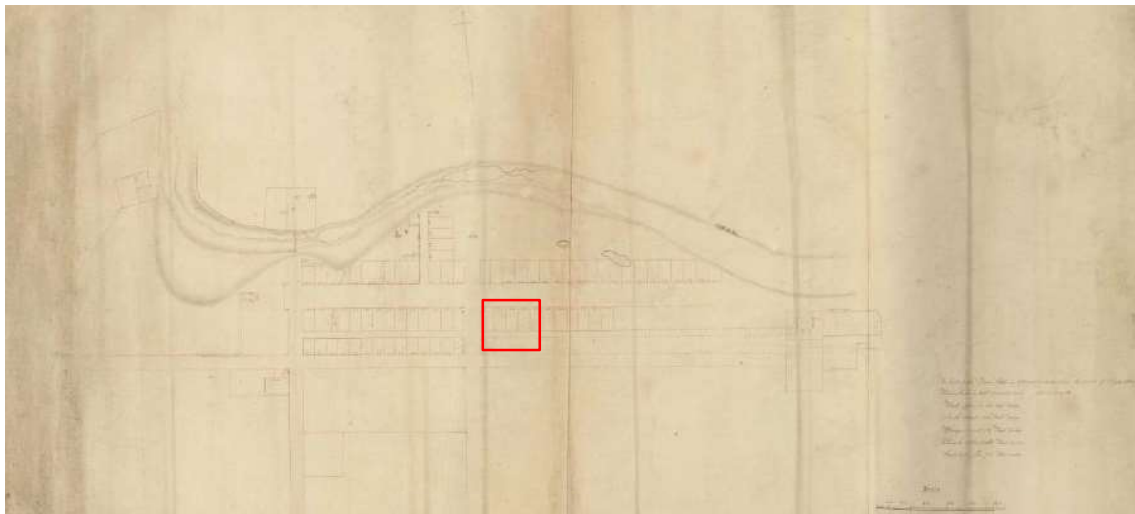


Figure 2.1 Plan of Parramatta, c1790–92. The approximate location of the site is outlined in red. (Source: NSW State Archives)

The relative success of Parramatta led to further investment and development of the settlement, showing that it was seen by the colonial authorities as critical to the future of New South Wales. In c1790–92 the town plan of Parramatta was surveyed and laid out by Governor Phillip and the Surveyor General Lieutenant Augustus Alt. The settlement of Sydney had grown organically and somewhat haphazardly, but at Parramatta, Phillip’s desire for an ordered township based upon a neat Georgian grid was realised.²⁰ This would be the new civic and agricultural centre of Sydney. Phillip’s Parramatta plan:

*laid out broad 200 feet wide street up from the river’s edge to a gentle rise, where Phillip planted his own house ... the huts for the convicts lined the avenue below Government House in a long, straight and subordinate procession.*²¹

Grace Karskens has observed that the plan ‘created vistas to imaginary future buildings of civic authority.’²² The Governor’s house (Old Government House) was to sit in an elevated position on a small hill. From there a wide, straight High Street, later known as George Street, would stretch to the convict barracks (built in 1819) and the wharf on Parramatta River.²³ The main cross street, later known as Church Street, was planned at this stage, marked by a church to the south and a town hall and marketplace to the north. This design for the town plan is important as it formed what is essentially an axis of power and control, with symbols of divine authority, military power and civic order at the end of each principal street, and the ultimate symbol of Crown authority—Government House—in an elevated position overlooking all.²⁴

The presence of convict huts on the original town plan reminds us that Parramatta was a penal colony, built to accommodate a large workforce. Lining the High Street on the 1790–92 town plan were evenly spaced huts built by and for convict workers. Tench provides the most complete and frequently cited description of the convict huts:

*[High Street] Contains at present 32 houses completed, of 24 feet by 12 each, on a ground floor only, built of wattles plastered with clay, and thatched. Each house is divided into two rooms, in one of which is a fire place and a brick chimney. These houses are designed for men only; and ten is the number of inhabitants allotted to each; but some of them now contain 12 or 14, for want of better accommodation. More are building; in a cross street stand nine houses for unmarried women: and exclusive of all these are several small huts where convict families of good character are allowed to reside.*²⁵



Figure 2.2 Brambila’s 1793 drawing of Parramatta with huts lining High Street (now George Street). (Source: British Library map collection)

Various historical images of Parramatta show that the huts were flanked by a garden to the rear and probably to the front as well. These gardens were particularly important, and the space allowed for them in the town plan was in part a fire safety precaution, but also demonstrates the importance of the town as an agricultural centre and place of food production. There was also a strong belief amongst the colonists that the personal interest convicts had in tending these gardens and the pleasant living quarters would encourage ingenuity and teach them the value of a strong work ethic. This is connected to the ideology of Improvement, which characterised debates about morality and reform from the late Georgian period on.²⁶ The space allowed around the convict huts may also suggest that from the outset Phillip intended Parramatta to grow into a prosperous free town. The generous allotments would allow for future development as the population grew.²⁷

From an early date, elements of Phillip's plan started to change, adapting to life in a rapidly growing and dynamic colony. Free settlers and emancipists soon moved in and built new houses and businesses, transforming the landscape and laying the foundations of Parramatta's future. This departure from elements of the original plan commenced at an early date, after Phillip departed for England in 1792, and the colony entered a three-year period without a governor known as the first interregnum. Although core elements of the plan were maintained, such as the main streets we still see today, during this phase elements of the town plan changed, and a more organic style of development commenced. Government agriculture also declined as the powerful landholding officers known as the Rum Corps took over, gained control of convict labour and pursued private ambitions and enterprise.²⁸ Soon private, free leaseholders moved into the town, and developed their blocks according to their needs. The earliest lease in the town itself was granted in 1796, the year after Governor Hunter's arrival, to emancipist James Larra. By 1800, 19 town leases had been granted, mainly to free men, although a few were given to other emancipists as well.²⁹

When Governor Macquarie arrived in 1810, a major period of investment in Parramatta commenced, which had a lasting impact on the shape and fabric of the future city. He ordered the construction and improvement of many institutions and was responsible for major changes to Parramatta's landscape.³⁰ This was also a period coloured by a heated political debate about labour relations and the future of the colony, which in turn shaped the development and future of the town. The desire to control labour led to the ultimate clash of interests between two key figures—Macarthur and Macquarie. Macarthur and the other powerful pastoralists had successfully disposed of Governor Bligh in the Rum Rebellion of 1808 and during the second interregnum, prior to the new governor's arrival, had managed to secure the labour power of the convicts firmly for themselves.³¹

Small landholders in Parramatta moved to the richer grounds around the Hawkesbury in the early nineteenth century, and these large landholders consolidated the old land grants and shifted from growing crops to producing wool.³² This shift to large-scale commercial pastoralism, buoyed by the steady supply of unpaid convict labour, was a major change in not only Parramatta's economy, but in the wider colonial economy at large. Governor Macquarie was commissioned to come to New South Wales and regain government control of the colony.³³ This meant regaining control over the labour force. In order to do this, he institutionalised the convicts and began his massive public works program, putting the convicts to work for the government and depriving the pastoralists of their free and ready labour supply. Macquarie removed the convicts from the town centre once and for all when he built a convict barracks on Macquarie Street in 1819 so that he may better control their labour and behaviour.³⁴



Figure 2.3 Plan of Parramatta by GW Evans, 1804, incorrectly marked 1813. The approximate site location is outlined in red. (Source: State Library of NSW)

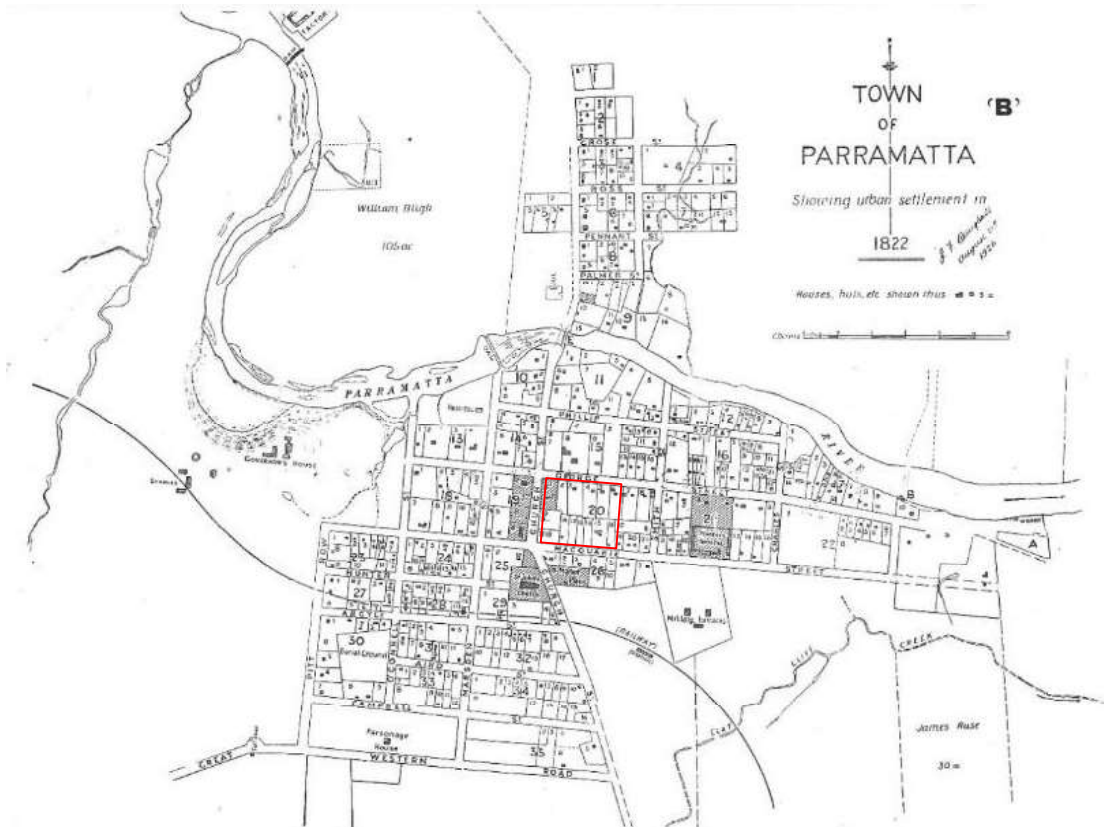


Figure 2.4 A 1927 reproduction of the 1823 Town of Parramatta plan. The approximate site location is outlined in red. (Source: The Journal of the Royal Australian Historical Society)

When Governor Brisbane arrived after Macquarie's departure in 1821, one of his first acts was to commission a town survey to resolve the issue of the chaos that had crept into Parramatta's land tenure system, dominated by permissive occupancy. This 1823 plan shows us that while the main street alignments were maintained, Phillip's neat convict allotments had begun to give way to an assortment of increasingly irregularly sized and aligned allotments. These reflected the needs of the increasingly free population wanting to invest in and develop central Parramatta.

Other major changes made to the landscape at this time continue to shape Parramatta to this day. The Government Domain had been consolidated and expanded by Macquarie, leaving a lasting imprint on the city. The 1823 plan marked the beginning of the next historic era and was a turning point in the development of Parramatta. The delineation and formalisation of property and tenure, and the alienation of Crown land through the creation of a system of formal leases and grants, showed that Parramatta had begun to shake off the shackles of its genesis as a penal town, and was destined for a prosperous future as a centre of business and industry.

2.2.5 From agriculture to industry

Despite his ultimate defeat in his stoush with the pastoralists, Macquarie had a profound impact upon the colony and its economy. His public works program stimulated an increase in secondary production, manufacture, and trade, as well as rapid growth of the private sector and market economy.³⁵ Parramatta was at the centre of this growth. Macquarie declared it a free market town in

1812.³⁶ This started the urbanisation, privatisation, industrialisation and centralisation which characterised the later development of Parramatta.³⁷

Macquarie's institutionalisation of the convicts just prior to the end of his administration in 1821, and Brisbane's 1822 reordering of the plan, meant that the township of Parramatta was now inhabited entirely by free occupants and was increasingly privatised. The convict huts had disappeared almost entirely and the township of Parramatta became an urban, industrial centre characterised by increasingly substantial structures and investment.³⁸ In 1836 the lumber yard, which had previously managed all convict labour, was closed as the government began pushing for more private enterprise.³⁹ There were also major improvements in the quality, durability and appearance of the buildings in this era. By 1841 there were 646 houses in town, of which 349 were built of wood and 297 of stone or brick.⁴⁰ Despite the initial economic depression following the 1841 cessation of transportation, the rest of the century was marked by the rapid urbanisation, industrialisation and centralisation witnessed throughout the colony, and indeed throughout the empire, in the Victorian period.⁴¹

The rate of development and industrialisation gathered pace and continued to characterise the local economy in the early twentieth century. From 1912, the surge in house building in Sydney saw Parramatta become a hub for the manufacture of building materials. Camellia presented an ideal site for industries as it was serviced by water and rail transport. Companies that operated here over the twentieth century included the Asbestos Slate and Sheet Manufacturing Company, Fifield Magnesite Company and later the Australian Cream of Tartar Co Ltd. In the mid-twentieth century, metal fabrication industries dominated the landscape at Rydalmere, Ermington and Camellia. The poisonous by-products of these industries meant that they came under pressure to close as residential areas expanded.

Notwithstanding the urban growth and industrial development, the areas around Parramatta continued to produce food for the growing population. At the turn of the twentieth century the Cumberland Plains were dominated by orchards as well as some vineyards. Carlingford and Dundas were among the first fruit-growing areas in the colony and bore the signs of decades of cropping. At Rydalmere and Ermington, wharves along Parramatta River enabled the transport of fruit on boats. Land less suitable for orchards was taken over by poultry farms, with several ex-miners from Broken Hill taking up plots at Rydalmere. However, increased suburbanisation meant farmland was ringed by increased density of houses and orchards had retreated further to the fringes. Despite the retreat of these food-producing industries, the wharves at Rydalmere and Ermington remain as a legacy of fruit-growing in the area.

2.2.6 From penal colony to free town

The Parramatta CBD precinct encompasses areas associated with Governor Phillip's original town plan of 1790. The original plan, and its realisation over time, was discussed in detail in Section 2.2.4. In summary, in 1790 Governor Phillip and the Surveyor General Lieutenant Augustus Alt laid out an ordered township based upon a neat Georgian grid.⁴² The Governor's house was to sit in an elevated position and a wide, straight High Street, later known as George Street, would stretch to Parramatta River.⁴³ The main cross street, later known as Church Street, would be marked by a church to the south and a town hall and market place to the north. Huts on generous allotments, built to accommodate the convicts, lined High Street and more were planned along Church Street.

Soon, free men and emancipists moved in and built new houses and businesses, transforming the landscape and laying the foundations for Parramatta's future. When Governor Macquarie arrived in 1810, a major period of investment in Parramatta commenced. He ordered the construction and improvement of many institutions and regularised the streets and street alignments. He also consolidated and expanded the Government Domain, leaving a lasting imprint on the city.

In the post-convict era Parramatta transformed into a bustling and densely settled free town. In the early 1880s a tramway was constructed along George Street. This connected the George Street Gatehouse at Parramatta Park with the Duck River. It was in operation until 1943 and demonstrates the considerable investment in infrastructure made in the town in the late nineteenth century. In 1873 the Parramatta Gas Company opened a gasworks on the north side of George Street, opposite Purchase's nursery. Again, this shows the changing landscape and economy in Parramatta from the late nineteenth century as business boomed.

From the mid-nineteenth century until the 1910s, there was increasing specialisation in shops, such as the opening in 1850 of Pye's Pharmacy by Whitaker; the rise of the department store, including Erby's Wycombe House Emporium and Murray Bros, both in Church Street; and the development of shopping arcades, including the former Parramatta Arcade built in 1925–26 by businessman George Ralph in Church Street opposite St John's Church.

Grace Bros department store opened in 1933 on the corner of Church Street and Argyle Street and was the first of the Grace Bros stores established outside the Sydney CBD. The company selected a prime location close to the railway station, bus terminus and the established shopping strip along Church Street. The company also foresaw the growth and increased prosperity of Western Sydney which would take place over the next few decades.⁴⁴

Over the course of the twentieth century Parramatta CBD became the bustling centre that we know today, home to communities drawn from around the world. Many buildings were replaced, and density increased in major phases of urban renewal as smaller, older developments made way for larger commercial structures. Large retailers and commercial businesses with the main headquarters in the Sydney CBD purchased sites at Parramatta to expand their business into the growing western suburbs. Household names Grace Bros (now Myer), David Jones, Waltons, Coles and Woolworths are just a few of the retailing giants that developed new stores in the Parramatta CBD from the mid-twentieth century. Westfield Shoppingtown Parramatta opened in three stages from May 1975. At this time, it was the largest shopping centre in Australia. Smaller shopping centres such as Greenway and Parramall were also built in this period and are located within the study area.



Figure 2.5 The 1823 GC Stewart Plan of Parramatta showing the town as a mix of government, military, urban and agricultural lots. The approximate site location is outlined in red. (Source: State Archives NSW)



Figure 2.6 Detail of Brownrigg's 1844 Plan showing the urban development of Parramatta CBD. The approximate site location is outlined in red. (Source: State Library of NSW)

2.2.7 Migration

From the beginning, diverse groups of people have lived in and had an impact on the culture of Parramatta. Darug language groups interacted with the Gandangara, who occupied the land to the southwest. As discussed in Section 2.2, they thrived on Country, developing complex cultural traditions. After British colonisation, convicts, officials, military and free settlers derived from a range of religious, ethnic and class backgrounds were jumbled together. The early colony's protestant British

elite held positions of power and left their mark on the landscape with seats of ecclesiastical and secular authority. While the majority of convicts were English, the influx of Irish convicts created a palpable divide in the population along religious and cultural lines.⁴⁵ The convict population also included Scottish, Welsh, North American, African, West Indian, continental European and Jewish prisoners.

Although the population initially consisted mostly of convicts and officers, free settlers were soon drawn to Parramatta, hoping to prosper in the ever-growing settlement. Most of these came from Britain, and later Ireland, but free settlers from continental Europe left their mark on the town from an early date and had great influence on the development of farming practices. By 1795, German free settler Philip Schaeffer had successfully cultivated wheat, corn, tobacco and wine at his Parramatta farm and vineyard.

Parramatta's increasingly diverse population grew over the nineteenth and early twentieth centuries. The most successful and perhaps most distinctive cultivation of the land was by the Chinese market gardeners and associated communities who lived along Windsor Road in 1900. Within Parramatta town itself the riverbanks were also put under cultivation until dense development in the 1920s–1930s and the prejudices of other settlers pushed the Chinese market gardeners to the fringes. Many of the garden plots were subsequently worked by Italian and Maltese market gardeners and poulterers in neighbouring Wentworthville and farther west in the interwar period.⁴⁶ They were known as 'particularly good agriculturalists, used to dry land and harsh conditions in their homeland.'⁴⁷

After the Second World War, the waves of migration and refugees had a major influence on the shape, culture and communities of Western Sydney. Places like Dundas Migrant Workers' Hostel were established to accommodate displaced people and assisted migrants. Migrants, former prisoners of war and refugees from eastern Europe were contracted to serve the government for two years as part of their emigration conditions. They were the core of the urban workforce for factories in the west.

The assimilation era of the 1950s expected migrants 'to abandon their culture and language and "blend in" to the Australian way of life.'⁴⁸ But their influence also changed and enriched the culture around them, among other things broadening the palate of the existing community. Ethnic small businesses like the Mediterranean fruit shops and cafes and German and Eastern European delicatessens introduced a new range of delicacies and flavours. The architectural fabric had new places of worship, commemorative sites, social clubs and soccer fields. As Lebanese-Australian anthropologist Ghassan Hage described:

As each wave of immigrants to Australia settled in, little knots of eateries, evocative of the old world, served as meeting places where lonely groups of migrants chatted in their native tongue and recreated the tastes of home.⁴⁹

Parramatta looms so large as a home away from home for Lebanese migrants that a 2km long street in the small village of Kfarsghab in Lebanon has been named 'Parramatta Road.' With decades of families able to trace ancestry back to this village.

During the 1970s, the end of the White Australia policy and passing of the *Migration Act 1966* broadened the diversity of arrivals to Australia again. It coincided with the humanitarian crisis engendered by the Vietnam War and Indo-Chinese refugees, including the Vietnamese, arrived throughout the late 1970s. In 1977, the Department of Immigration opened two multicultural resource centres, one in Melbourne and one in Parramatta.

In 2005–2006, Parramatta took the fifth highest number of refugees in NSW (346 people), while the total number of humanitarian and family reunion migrants to Parramatta from 2009–2014 was 4534. Western Sydney continues to provide a home to a larger proportion of refugees than many parts of Australia.⁵⁰ New rituals, funerary practices and festivals have shaped street life, and today festivals like Parramasala celebrate the cultures of Australia’s largest South East Asian population.

2.3 Detailed site history

The site comprises all or part of Crown Allotments 10, 12, 14, 15, 15A, 16, 17, 28, 74, 75, 76, 77, 78, 79, 80 and 81 in Section 16, Town of Parramatta (Figure 2.7). The histories of the different parcels of land are examined in turn from the easternmost allotment in Macquarie Street (Allotment 17) anti-clockwise to Church Street, then to George Street and ending at Smith Street (Allotment 28). The original Crown allotments of the study area have undergone intensive subdivision and development to form residential, retail, commercial, industrial and roadway/parking sites.

This section details the development of the site since British colonisation and the settlement at Parramatta and focuses on the built environment and form of occupation as well as the buildings erected on the land, especially through the early years of the colony and the nineteenth century.

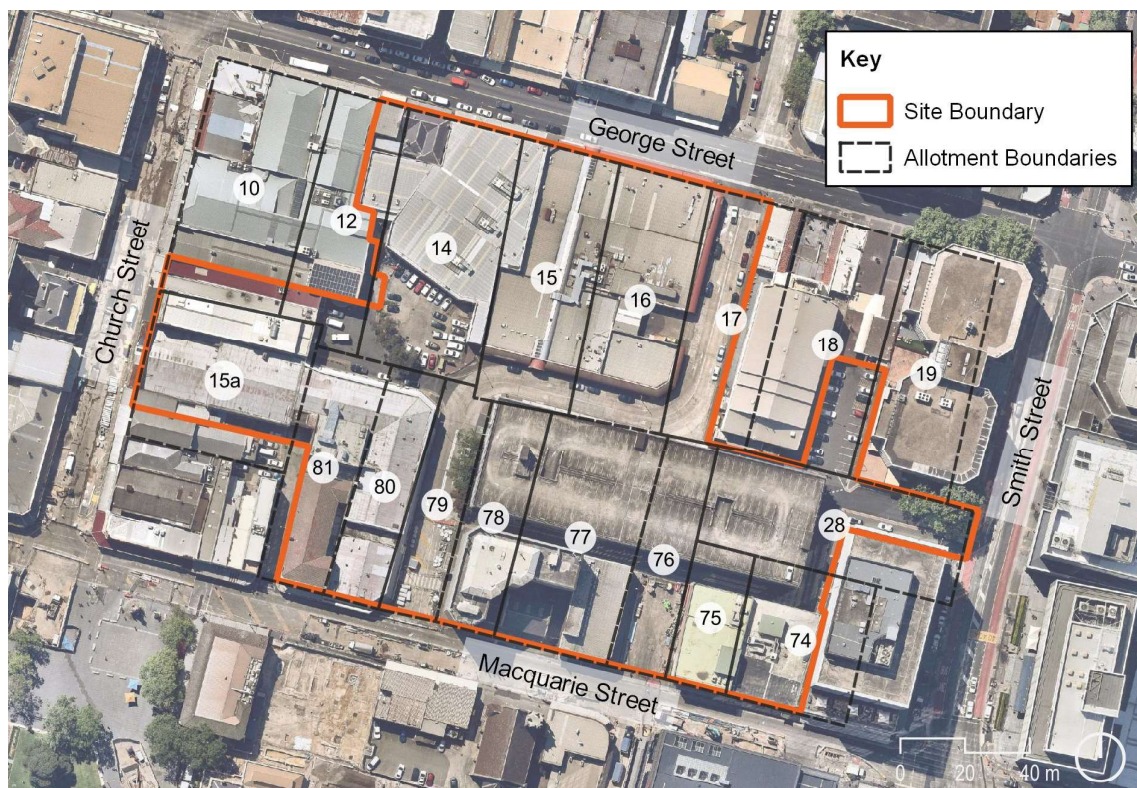


Figure 2.7 Aerial photograph showing the site boundary and Crown allotments. (Source: Nearmap with GML overlay 2021)

Sections of the following detailed site history have been reproduced from the following reports (with minor amendments by GML for spelling, grammar and style) and are indicated in italics within the relevant section of the report:

- Archaeology and Heritage Pty Ltd 2004, *Parramall, 55-57 George Street, Parramatta*
- Austral Archaeology 2006, *236 Church Street Parramatta Archaeological Assessment, Statement of Heritage Impact and Research Design*
- Casey & Lowe 2017, *48 Macquarie & 220–238 Church Streets, Parramatta, Archaeological Assessment*
- Edward Higginbotham & Associates, 2002, *Historical and Archaeological Assessment of Proposed Development 25 Smith and 76-78 Macquarie Street, Parramatta NSW*
- Edward Higginbotham & Associates, 1995, *Historical and Archaeological Assessment of the Site of the Proposed Officeworks Superstore, 41-53 George Street, Parramatta, NSW*
- Edward Higginbotham & Associates, 2004, *Report on the Archaeological Excavations 25 Smith and 76-78 Macquarie Street, Parramatta, NSW.*

2.3.1 Allotment 17 Section 16—grant to James Foulcher

On 21 October 1831 Governor Darling granted Allotment 17 Section 16, comprising 2 roods 7 perches, to James Foulcher. The site was described as Lot 1 in the *Government Gazette* notice dated 14 September 1831, with quit rent being £2 9s per annum, commencing 1 July 1823 in original lease to John Ready.

This allotment was the site of a convict hut, as outlined in the 1804 map (Figure 2.8). This allotment is shown on Stewart's 1823 plan of Parramatta and contains two structures (Figure 2.9). It is not known whether the structures shown in 1823 include the original convict hut.

Allotment 17 was re-granted to Foulcher from John Ready as noted on the plan in 1831 (Figure 2.10). There are four rectangular structures on the site, and one partly located on this parcel and extending eastwards into the adjoining land of James Elder.

Very little is known about John Ready as there were several men bearing this name in the colony in this period. The most likely candidate is the John Ready who arrived as a convict on the *Three Bees* in 1814 and was living at Parramatta by 1820, having received his conditional pardon on 31 August 1819. In 1822 he was on a list of persons assigned a convict mechanic. In April 1823 he was listed as 'Raidy' on the return of allotments in the town of Parramatta. There is no indication in the surviving records to indicate how Ready occupied the allotment.



Figure 2.8 Detail from Evan's 1804 plan showing two convict huts—the eastern one is outside the site boundary, while the western hut is mostly in the adjacent Lot 16. (Source: National Archives UK)

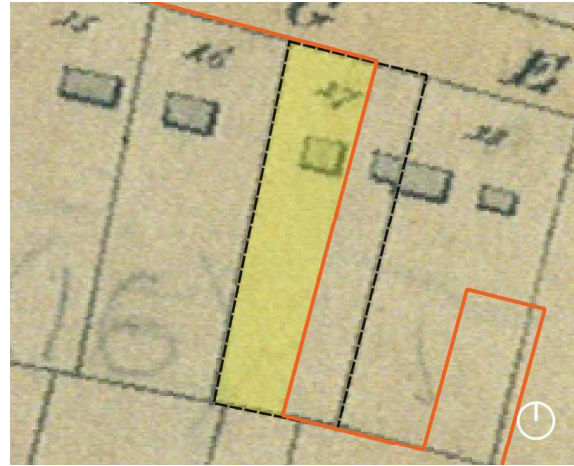


Figure 2.9 Detail from Stewart's 1823 map showing two structures on Allotment 17. (Source: State Library of NSW (SLNSW))

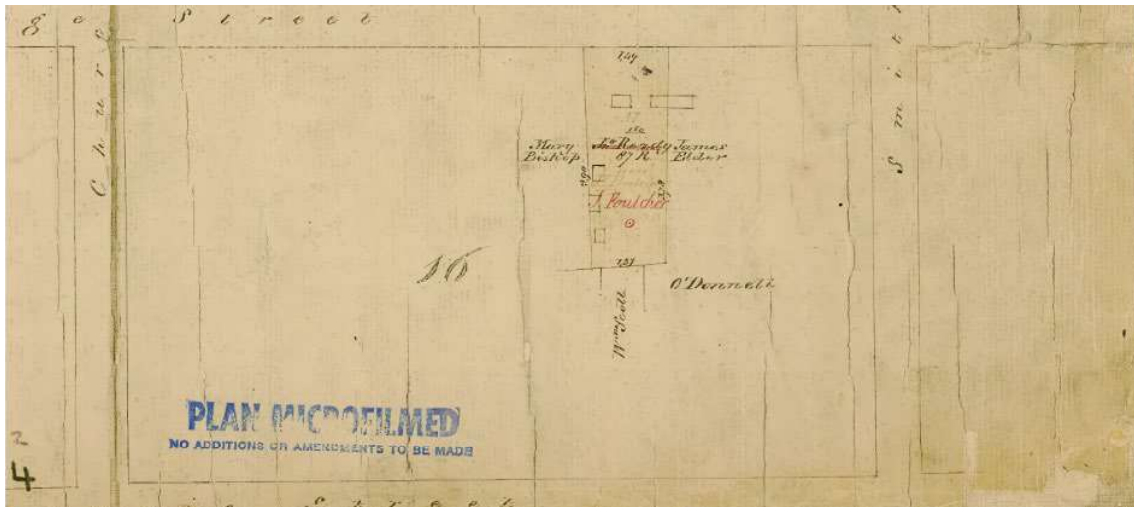


Figure 2.10 Detail from part of a map of Parramatta showing re-grant of Allotment 17 Section 16 from John Ready to James Foulcher, August 1831. (Source: NSW Land Registry Services, Crown Plan 3-714)

On 1 June 1828, when James Foulcher was 20 years old, he signed a Memorial to the Governor, stating that he was James Foucher [sic], was free born and lived with his father in Parramatta. Being possessed of a few head of horned cattle, he wanted to turn his attention to agriculture and requested a grant. His request was granted and he received 60 acres.

Along with the 1831 grant, Foulcher was granted a publican's licence at George Street, Parramatta. He had commenced working as a publican, firstly in Smith Street, Parramatta, then by January 1827 in Phillip Street under the sign 'Native Companion'. He relocated his business and licence to George Street in 1831, likely to Allotment 17. The licence was renewed in 1833 for the 'Native Companion' inn at George Street, Parramatta.

James Foulcher was born in the colony in 1802. He was the son of convicts, Robert Foulcher and Elizabeth Diane Wilson 'C' aka Hutchins, who lived at Parramatta. He married Catherine Brien in 1825

at Parramatta. James, Catherine and their first child, Sarah, along with servant Mary Ann Bryan, were listed at Parramatta in the 1828 Census. Foulcher was described as a Protestant aged 26 years and his occupation was listed as ‘publican’.

Foulcher operated the Native Companion at George Street until November 1833, when he advertised ‘that well-known established and respectable Licensed House, the “Native Companion”, situated in George Street, Parramatta’ for lease.⁵¹ Two months earlier he had advertised his stock in trade and property at Pennant Hills, Castle Hill and Parramatta for auction. Allotment 17 Section 16 was identified as:

Lot 10—A valuable Town allotment, a purchase from the Crown, the property of the late Mr J Ready, situated in the centre of George Street, joiner Messer Elder, Barker and Bateman; containing 80 rods more or less. On the ground is a newly erected brick building, likewise four other tenements, the whole of which are now let at the extreme low rent of £52 per annum, which is paid weekly, there is also a well constantly supplied with excellent water in the driest seasons.⁵²

The allotment was conveyed by lease and release in May 1834 to Henry Whitaker for the sum of £400.⁵³ Whitaker was a chemist, druggist and grocer in Parramatta. Whitaker was in business in George Street by May 1831, when he notified the public that he had moved to a new location, farther up George Street opposite Mrs Walker’s Hotel (Red Cow Inn).⁵⁴ It is unclear from this record whether this was within the subject site, as at this date Foulcher was still running the Native Companion on what is believed to be Allotment 17 of Section 16. Whitaker retired from business in 1839 due to ill health.⁵⁵ Apparently the business was taken over by Wickham, as in April 1843 S Phillips advertised the auction sale of the ‘old and established Drug and Grocery Business, formerly carried on by Mr Whitaker, in George Street, Parramatta, now in the occupation of Mr Wickham (who retires in consequence of ill health).’⁵⁶

Brownrigg’s 1844 plan shows three structures on Allotment 17 towards the George Street frontage (Figure 2.12). It is annotated with the names of J Ready (lessee), J Foulcher (grantee) and H Whittaker (purchaser).



Figure 2.11 Detail from Johnstone’s 1836 survey plan showing the same structure from the 1823 and 1831 plans in the northern part of the lot. (Source: State Archives and Records, SA 4799)



Figure 2.12 Detail from Brownrigg’s 1844 plan showing a new masonry building on the George Street frontage. (Source: SLNSW)

2.3.2 Western portion of Allotment 17

Henry Whitaker retained ownership of the whole of Allotment 17 until 2 June 1874 when he sold the western part of that lot (part of the study area, measuring 1 rood 10 perches) to Herbert Coates on payment of £500 to the mortgagees and 10 shillings to Whitaker himself.⁵⁷ Herbert Coates senior, a painter, wallpaper hanger, decorator and picture framer, died on 1 July 1883. His son, also Herbert Coates (junior), and Thomas Henry Rawlings were named as his executors and trustees. At the time of his death aged 48 years, Herbert Coates (senior) was living in George Street, Parramatta, but it is not clear where precisely in the street. It is possible that he lived on the western portion of Allotment 17, which he had owned from 1874. Herbert Coates junior was a builder and contractor of George Street, but again the records do not confirm the precise location of his residence, and it is possible he resided in his father's house.

On 15 January 1883 Herbert Coates junior leased the western portion of Allotment 17 to George Coates junior and Richard W Harper.⁵⁸ Coates and Harper operated a large timberyard in Parramatta farther east in George Street and, by 1891, a branch mill in Granville. The occupation of this portion of Allotment 17 during this period is unclear. The Sands Directory in 1885 listed Coates & Harper at two sites in George Street between Church and Smith Streets, as timber merchants in one and as steam joiners in the other. Additionally, Herbert Coates (junior) is also listed in the same block.

Coates and Harper owned the western part of the allotment until June 1891 when Herbert Coates junior and Thomas H Rawlings conveyed the land under the terms of the will of Herbert Coates senior to his widow, Mary Ann Follett of Bungendore, who had married William Follett in June 1886. As they lived outside Sydney, the building(s) on this parcel of land were leased out.

The Folletts sold the property in May 1891 to Eliza Couper, wife of John William Couper of Parramatta, for the sum of £525.⁵⁹ JW Couper, gasfitter, was listed in George Street in the Sands Directory from 1892. The same year the Appeal Court was held at Parramatta in May when the value of Couper's brick house in George Street was reduced from £70 4s to £55.⁶⁰ Couper passed away from typhoid fever in April 1897, survived by his wife and four children. Couper was born in Parramatta and worked as a plumber for about 20 years. Eliza Couper continued to live at the George Street house but conveyed the house to her uncle, William Haggitt, in trust for her and her family. In the 1901 Census, Eliza Couper was the principal householder of a house in George Street occupied by three males and one female.

Eliza continued to live in the house, later numbered 63 George Street, Parramatta, until her death in June 1927 while visiting Kandos.⁶¹

No. 63 George Street was advertised for auction on 30 November 1927 as a deceased estate. It was described as:

*A splendid Business Site, near Smith-street, and opposite Picture Show. LAND, about 53 feet by about 222 feet. On the land is erected a SHOP AND DWELLING of brick on stone, iron roof, containing Shop, Hall, 4 rooms, Kitchen, Washhouse, Bathroom, rear verandah. Occupied by members of Deceased's Family.*⁶²

The *Daily Telegraph* reported on 10 December 1927 that the property was sold at the auction for £1550.⁶³ The conveyance was registered on 13 February 1928 from William Albert McLaren, agent and executor/trustee of the will of the late William Haggitt, to Frederick Thomas Reeves of Randwick.⁶⁴ In 1929, 63 George Street changed hands in quick succession from Reeves to David Joseph William

Gazzard of Pennant Hills, grazier, then to Sydney Longworth of Vacluse, grazier, for the amounts of £3000 and £2500 respectively. The shop and dwelling structure were demolished at this time and the site was redeveloped in conjunction with adjoining land (Allotment 16) as the Parramatta Parking and Service Station adjoining the newly built Roxy Theatre. See the parking area in the figures below.

Eric Norman Welch purchased the property in September 1947 for £1610.⁶⁵ The site was resumed by the City of Parramatta Council (council) on 18 May 1956 to form the northern end of a new roadway, Horwood Place.



Figure 2.13 Detail from aerial view of St John's Church and Parramatta by EW Searle, c1935. The parking area adjoining the Roxy Theatre, being the western part of Allotment 17 Section 16, is visible. (Source: National Library of Australia, Searle, E. W. Aerial view of St. John's Church, Parramatta, New South Wales, c1935 <<http://nla.gov.au/nla.obj-141919607>>)

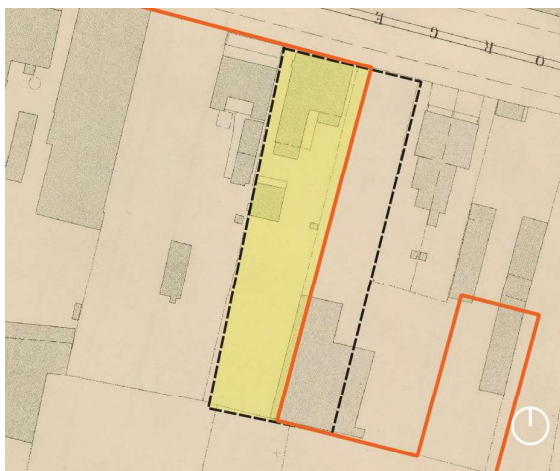


Figure 2.14 Extract from 1895 Parramatta detail survey, sheet 18. (Source: SLNSW)



Figure 2.15 Detail from 1943 aerial photograph showing the parking lot adjacent to the Roxy Theatre. (Source: SIX Maps)

2.3.3 Parramall Shopping Centre, 55–67 George Street—Lot 1 DP 607181

The Parramall Shopping Centre at 55–67 George Street was built in 1979/1980 by the National Mutual Life Association of Australasia Limited. The first leases in the Parramall Shopping Centre were registered in May 1980. Ownership of Parramall was conveyed in 1981 to Permanent Trustee Australia Ltd in 1981. Lot 1 DP 607181 comprised part of Allotments 15 and 16 of Section 16 of the Town of Parramatta granted respectively to James Hickey Grose and Samuel Barber. Sections 2.3.4 to 2.3.8 detail the subdivision of these allotments and the development and occupation of this land.

2.3.4 Allotment 16 Section 16—grant to Samuel Barber

The 1804 map of Parramatta indicates that this allotment was already leased as No. 12 (Figure 2.17). On 10 May 1809 an allotment 'situate[d] in the Main Street in the Township of Parramatta' was leased to Mary Bishop for a term of 14 years, with an annual quit rent of five shillings. Figure 2.16 contains a detailed description of the allotment.

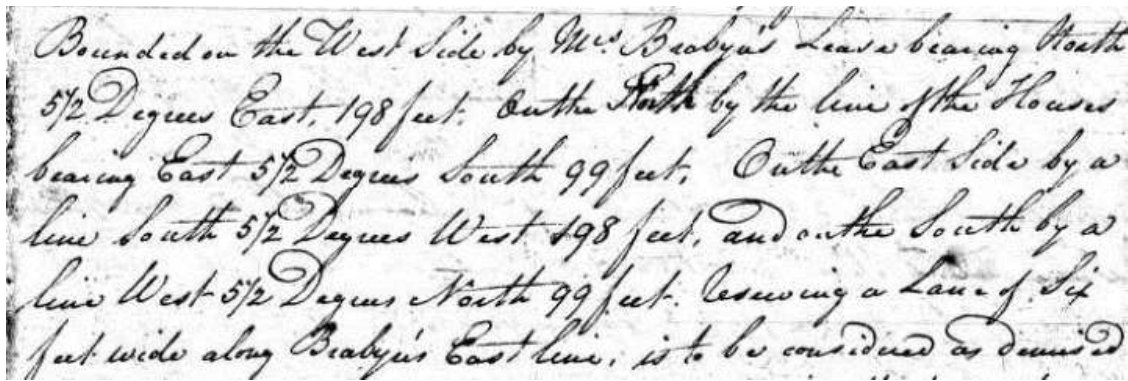


Figure 2.16 Detail from Register of Land Grants and Pardons, April 1809 to January 1810, containing a description of Mary Bishop's allotment at Parramatta. (Source: State Archives & Records, Reel: 2505; Series: 1215)

The allotment was re-leased to Mary Bishop on 1 January 1810 for 18 shillings and eight pence. On 5 April 1823 Mary Bishop was listed on the Return of Allotments in Parramatta. At this point her property comprised 98 square perches in George Street with an estimate value of quit rent as £2 and nine shillings.⁶⁶ The allotment was re-leased to Mary Bishop on 30 June 1823 for 21 years.⁶⁷ The 1823 map (Figure 2.18) shows a single building central to the George Street frontage.



Figure 2.17 Detail from Evan's 1804 plan showing part of a convict hut within Lot 16. (Source: National Archives UK)

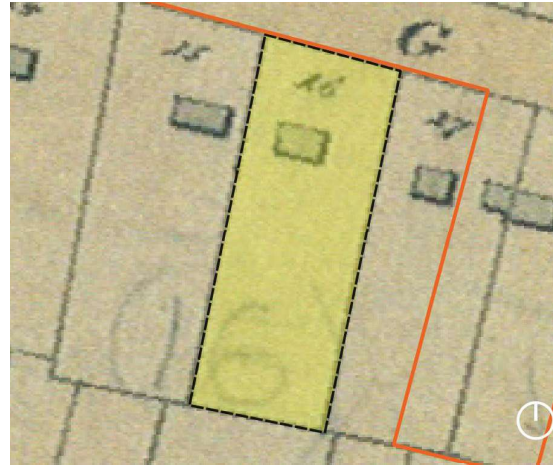


Figure 2.18 Detail from Stewart's 1823 plan showing one structure in Lot 16. (Source: SLNSW)

There was more than one Mary Bishop at Parramatta in the 1828 Census. The most likely candidate was 70 years old. She arrived in the colony in 1792 on the *Pitt* as a convict sentenced to seven years transportation. She was described as a householder at Parramatta. John Bishop, probably her husband, aged 60 years, also arrived on the *Pitt* in 1792, sentenced to seven-and-a-half years. The Census indicates Mary and John had 30 acres, 30 acres cleared and 30 acres cultivated.⁶⁸ This Mary Bishop died later the same year, aged 72 years old, and was buried on 8 December 1828.⁶⁹

The building on the 1823 map is shown in the same position on the 1836 survey plan (Figure 2.19) and the 1844 plan (Figure 2.20). By this date there were an additional two buildings located on Allotment 16. These buildings were sited closer to the street front and respectively identified as a masonry and a wooden building.



Figure 2.19 Detail from Johnstone's 1836 plan showing a structure in Lot 16. (Source: NSW State Archives and Records, SA 4799)



Figure 2.20 Detail from Brownrigg's 1844 plan showing two timber and one masonry building within Lot 16. (Source: SLNSW)

Mary Bishop's allotment was granted on 1 July 1841 to Samuel Barber for £51 and nine shillings. The land was described as being on the south side of George Street and measuring 2 roods 18 perches. The full description on the deed was as follows:

*Bounded on the West by a line four chains, on the South by a line one chain forty eight links, on the East by a line three chains ninety links, and on the North by George Street one chain fifty links.*⁷⁰

On 11 May 1858 Barber raised a mortgage over the land to Henry Hothersall Browne to secure £400.⁷¹ It is not known how Barber used the funds, but it is possible it was used to improve the property. In 1863 Samuel Barber was living at George Street, Parramatta, as he wrote to the *Sydney Morning Herald* on 29 May, published on 1 June.⁷² He had obviously vacated the property by July 1875, when Myrtle Cottage was advertised by Mrs Green as a private boarding house (Figure 2.21). She appears to have run this establishment until at least 1878. What happened to the occupancy of the cottage after this date is uncertain, but there were several people noted to live at Myrtle Cottage in the 1880s. An advertisement on 5 July 1884 indicates the cottage was still operating as a boarding house.⁷³ P Rowe, architect and surveyor, advertised his services to the community in 1885 and later in the year Mrs De Vine advertised for a general servant. In January 1893 R Ovesen, Professor of Animal Magnetism, notified the public that he had commenced business in George Street, Parramatta, at Myrtle Cottage.⁷⁴



Figure 2.21 Mrs Green converted Myrtle Cottage to a boarding house in 1875. (Source: *Cumberland Mercury*, 14 August 1875, p 3)

Following Samuel Barber's death on 12 November 1890 he left 'Myrtle Cottage, George Street, Parramatta' to his 14-year-old daughter Icey Britannia Johnson Barber of Guildford. Barber's widow and executrix Margaret married Louis Gurney of Guildford in 1891. On 1 July 1897, mere months after Icey had turned 21, the property was conveyed to her by the executors of her father's estate, including Icey's mother.⁷⁵

Myrtle House, an underground tank (cistern) and a rectangular outbuilding are outlined in the 1895 detail survey plan (Figure 2.23). The buildings are also shown on the 1804, 1823, 1836 and 1844 plans.

On 25 April 1901, following Icey's marriage to Broughton Barnabas O'Connor, the property was transferred to her married name of Icey Britannia Johnson O'Connor.⁷⁶

A tenant vacated Myrtle Cottage in 1906 as there was an auction of furniture, piano and household effects on the property on 18 September that year.⁷⁷ JW Hill, architect of Parramatta and Sydney, invited tenders in July 1910 for renovations to Myrtle Cottage.⁷⁸

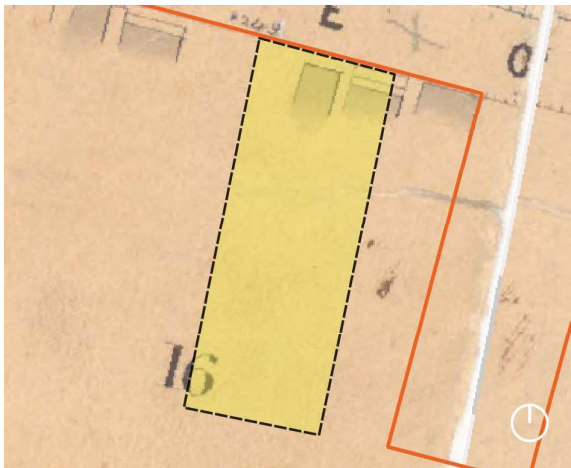


Figure 2.22 Detail from an 1855 survey plan of the street alignments that only shows buildings along the street frontage. (Source: City of Parramatta Research and Collections)

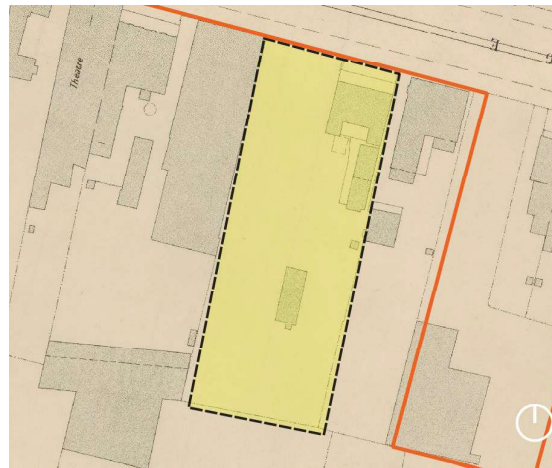


Figure 2.23 Extract from 1895 Parramatta detail survey, sheet 18, that shows Myrtle Cottage in the northeast corner of Lot 16 and a second structure in the rear yard. (Source: SLNSW)



Figure 2.24 Myrtle Cottage in the foreground, with the Roxy Theatre adjoining, about 1929. (Source: SLNSW)



Figure 2.25 View from southwest to Roxy Parking and Service Station, about 1935. (Source: NLA)

On 12 September 1929 Icey sold Allotment 16 to Frederick Alfred Edwards of Springwood, a furniture manufacturer, for £4000.⁷⁹ A photograph from about this date shows Myrtle Cottage next to the newly constructed Roxy Theatre (Figure 2.24). It comprises a single-storey masonry house with a verandah across the front (north) elevation facing the street and multiple chimneys with a centre gutter in the corrugated iron roof. A decorative iron fence surrounds the front yard and there is a timber paling fence enclosing the ground behind to the south. An outhouse is visible midway along the eastern boundary fence.

Edwards raised a mortgage in January 1930, with Ellen Forwood using the property as security to secure £2100.⁸⁰ Also in 1930, Edwards leased Allotment 16 to Charles John Maitland and George Forsyth Evans, garage proprietors, for five years at £520. The lease stipulated that Maitland and Evans 'will at his own cost and expense re-model the cottage now situated on the said land'.⁸¹ The

Parramatta Parking and Service Station was established on the allotment by 21 August 1930, the earliest mention in the *Cumberland Argus and Fruitgrowers Advocate*. According to a small feature in the newspaper the following month, the Parramatta Parking and Service Station was situated next to the Roxy Theatre and had the latest equipment for greasing cars, the 'latest American device' for inflating tyres and 'the parking area attached is open to the public, and theatre patrons at the small charge of 6d'.⁸² Myrtle Cottage was retained on the site but underwent substantial alterations to convert it into an office.

In January 1935 Edwards subdivided Allotment 16 into two lots, A and B. Following this subdivision, the Parramatta Parking and Service Station was located on Lot B, on a parcel measuring 1 rood 35 perches, whereas Lot A comprised vacant land measuring 16 perches and adjoining the former Myrtle Cottage to the west. Figure 2.26 shows the subdivision of Allotment 16, with Lot A outlined in red. A c1935 aerial photograph (Figure 2.25) of the property shows Myrtle Cottage—by then a two-storey building—with cars parked to the rear (south) of the building.

On 5 February 1935 Edwards sold Lot A to Arthur Ponting of Darlinghurst and Frederick Ponting of Leichhardt, a master butcher, for £1600, of which £200 was paid to his mortgagee.⁸³ By 1940 the site was occupied by the Roxy Parking and Service Station and run by G Bird. It featured:

A line of modern electric bowers front the convenient drive-in drive-out entrance to The Roxy Parking and Service Station in George Street, right next door to the Roxy Theatre, and all leading brands of petrol are sold at competitive prices and served in double quick time.

Under the capable and experienced control of Mr G Bird this service station and parking depot has been a regular stopping place for thousands of motorists for many years.⁸⁴

In 1941 Frederick Arthur Edwards subdivided Lot A into two allotments, C and D (Figure 2.27). The Pontings sold Lot C on 4 September the same year to Errol Herbert Vidler Griffin and Alma Gladys Austin for £1900.⁸⁵ Griffin and Austin owned the property until January 1961, when National Furniture Company Pty Ltd purchased Lot C for £19,500.⁸⁶

Following the death of Arthur Ponting on 29 May 1945, Lot D, containing the brick premises known as 61A George Street, was sold to Leslie Gordon Scott of Parramatta, solicitor, for £1600, of which £800 was paid to the executors and the other £2800 to Frederick Ponting.⁸⁷ Lot D was sold to National Furniture Co Pty Ltd on 7 March 1962 for £30,000.⁸⁸ The property was converted to Torrens title and registered on 13 October 1964 on certificate of title Vol 9834 Fol 249.

Meanwhile Lot B was resubdivided by Eric Welch in 1952 as Lot F in Miscellaneous Plan of Subdivision 9175, comprising 1 rood 32¼ perches. Welch promptly sold Lot F to Roxy Service Station Pty Limited for the sum of £30,000.⁸⁹ In November 1961 the land was sold to National Furniture Co Pty Ltd for £61,500.⁹⁰ In the intervening period, Roxy Service Station Pty Ltd was granted permission to install a water converter under the footpath in George Street to assist drainage from the new building being erected 'behind its present premises'.⁹¹

Between 1961 and 1964 the respective portions of Allotment 16 were consolidated in the ownership of National Furniture Co Pty Ltd. Figure 2.31 shows all of the buildings on the site by 1967, including the 'Old Brick 2 Storey' (Myrtle Cottage with upper floor) conjoined with two one-storey brick buildings on Lot 1, a brick two-storey building on Lot C (61 George Street) and a two-storey, partly new brick building that extended the length of Lot D (61A George Street).

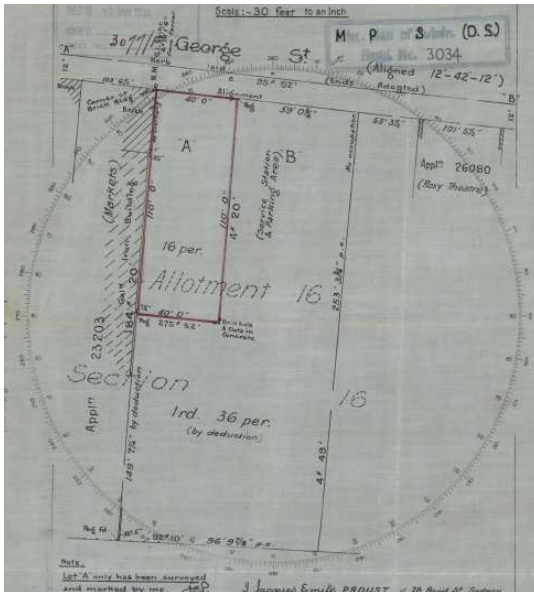


Figure 2.26 Block plan of Lot A of resubdivision of part of Allotment 16, 1935. (Source: NSW LRS)

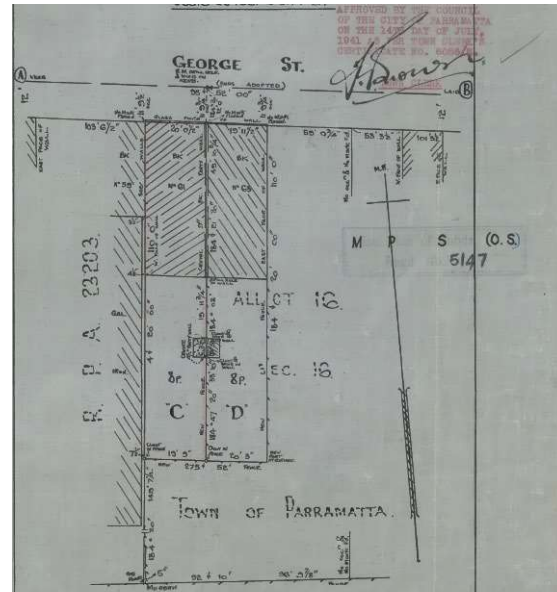


Figure 2.27 1941 subdivision of Lot B of resubdivision of Allotment 16 as Lots C and D by Arthur and Frederick Ponting. (Source: NSW LRS)

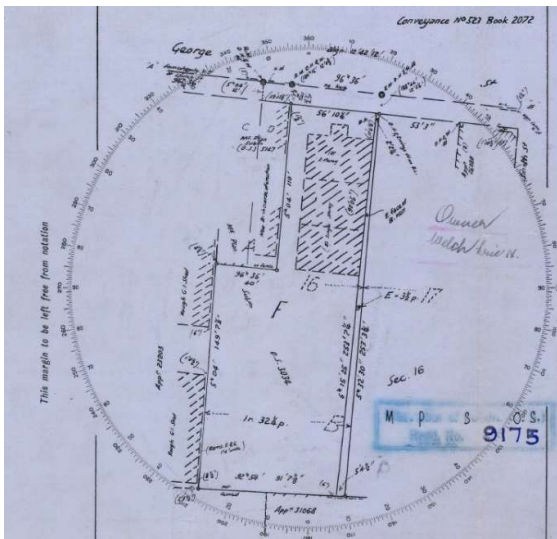


Figure 2.28 Subdivision of Lot B in October 1952 to form Lot F. (Source: NSW Land Registry Services, DP 159175)

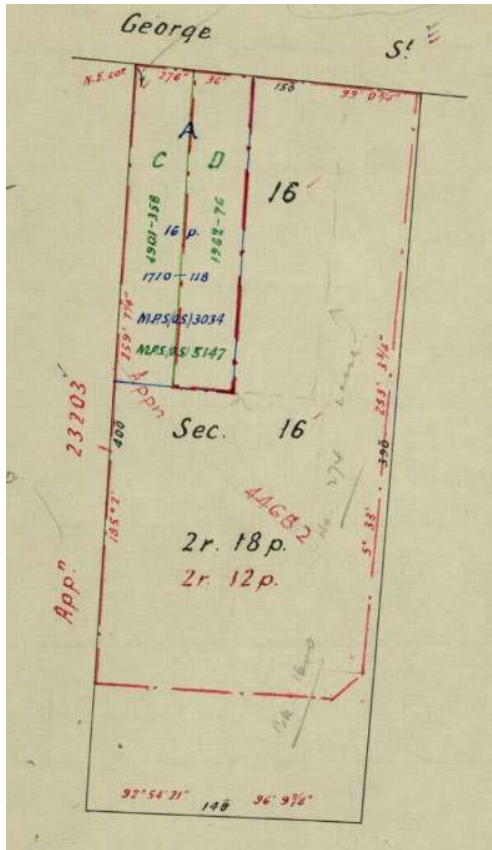


Figure 2.29 Primary Application Search Sketch 41630, 1964. Lot D is outlined in red. (Source: NSW Land Registry Services)

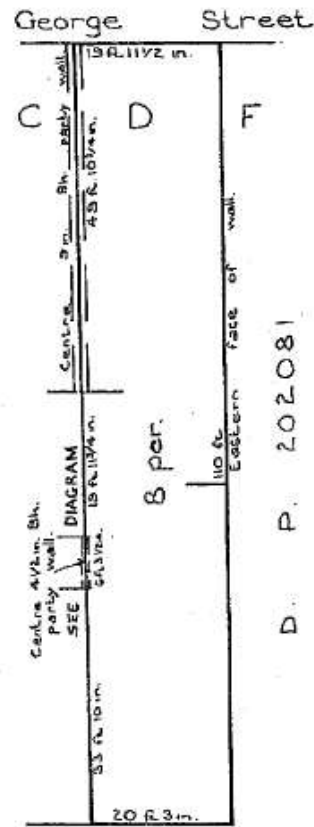


Figure 2.30 Block plan accompanying Vol 9834 Fol 249 showing Lot D. (Source: NSW LRS)

Section 2

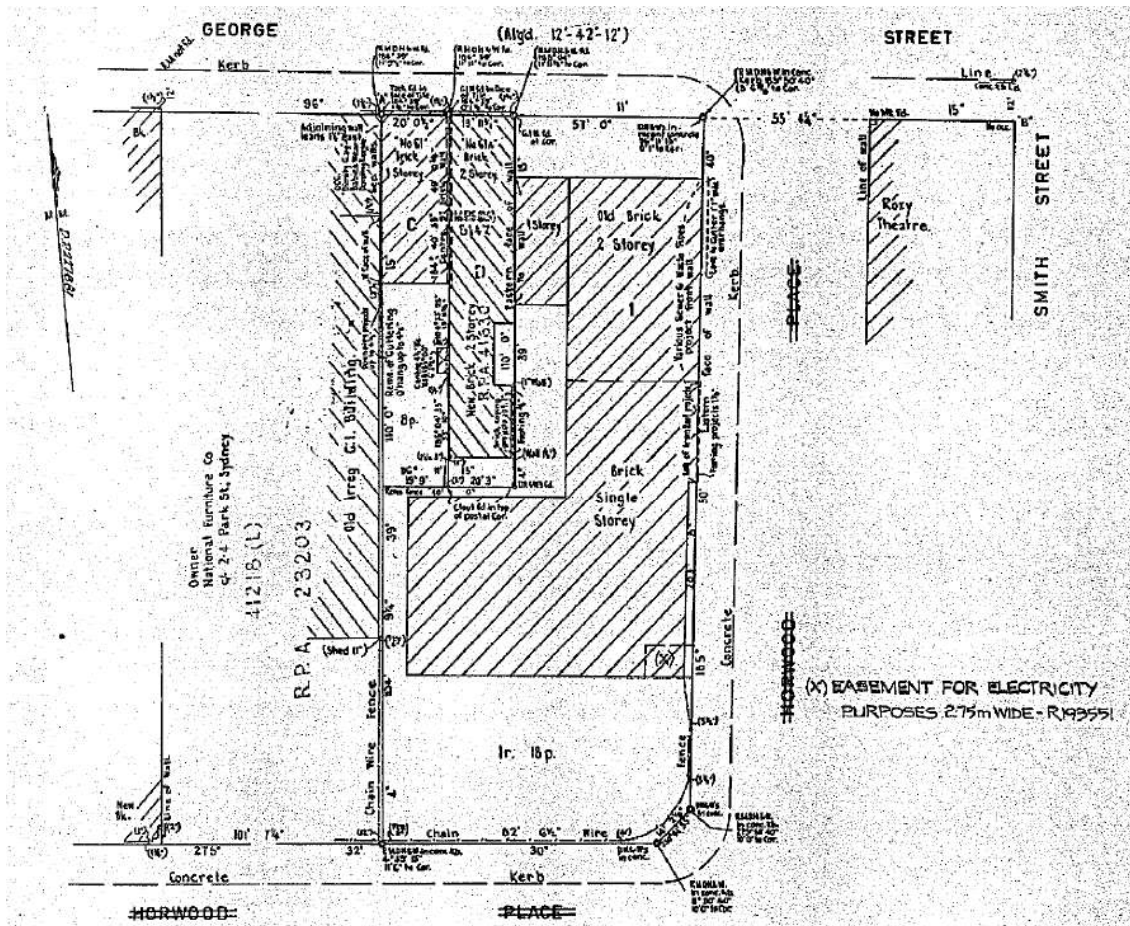


Figure 2.31 Title diagram showing Lot 1 DP 227881, 1967. (Source: NSW Land Registry Services, Vol 10524 Fol 17)

2.3.5 Allotment 15 Section 16—grant to Joseph Hickey Grose

The 1792 map of Parramatta shows a convict hut erected in the centre of the frontage of an allotment, measuring 100 feet (30.48 metres) by 200 feet (60.96 metres) (Figure 2.32). The width of George Street was originally 205 feet (62.484 metres) but is now 20 metres, so the original street frontage is now 21.242 metres behind the present frontage.

The 1804 map indicates that this allotment was already leased (as No. 12 on the map) (Figure 2.33). The allotment was leased on 16 July 1804 to Mrs Sarah Brabyn for a term of 14 years. No building is depicted on the 1804 map, and the parcel measured 1 rood 32 perches. It was described in the Register of Land Grants and Leases as 'Front W 5½ north 100 feet E and W sides, S 5½ W 198 feet'.

Sarah Brabyn came free on the Hercules in 1802 and was the wife of Captain John Brabyn. They were identified as farmers at Richmond in the 1828 Census. Sarah and John were aged respectively 65 and 69 and both were Protestants. Between them they had 1100 acres, 300 cleared and 82 in cultivation with six horses and 123 horned cattle. John died in 1835. Sarah passed away in 1847 and was buried in St Matthew's Church of England Cemetery, Windsor.

The boundaries of the convict allotments were altered by various means to their configuration in 1823 (Figure 2.34). The 1823 and 1836 maps (Figure 2.35) of Parramatta indicate that Allotment 15

possessed a single building in approximately the same position as the previous convict hut. It is likely that this building is located on that portion of Allotment 15 forming part of the subject site.

The 1839 and 1844 maps of Parramatta depict this building and show the location of another building on the western boundary of Allotment 15. On the 1839 map the building is depicted with a dotted outline, possibly suggesting it is an addition to the map. On Brownrigg's 1844 plan the building is depicted as a masonry structure.



Figure 2.32 Detail from 1792 plan showing parts of two structures within Lot 15. (Source: National Archives UK)



Figure 2.33 Detail from Evan's 1804 plan that does not show any buildings within Lot 15 at this date. No. 12 pertains to the lease to Mrs Sarah Brabyn.

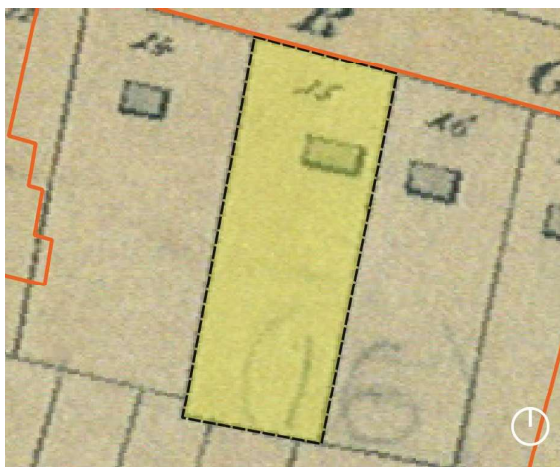


Figure 2.34 Detail from Stewart's 1823 plan showing one structure within Lot 16. (Source: SLNSW)



Figure 2.35 Detail from Johstone's 1836 plan that shows one structure within Lot 16. (State Records and Archives)

The allotment, measuring 97½ rods and situated on the south side of George Street, was leased for 21 years to Joseph Grose on 30 June 1823.⁹² On 21 July 1821 JH Grose advertised 'to agriculturalists, mechanics, etc' a range of imported goods and articles for sales, at his stores in George Street, Parramatta.⁹³ He operated the stores in George Street, until 25 June 1833 when he announced that he was disposing of his stores and vacating the premises, and advertised the sale of

the whole of his remaining Stock in Trade.⁹⁴ The *Sydney Herald* reported on 11 July 1833 that James and William Byrnes had ‘purchased those extensive premises in George Street, Parramatta, formerly belonging to JH Grose’, vacated their respective premises and relocated to George Street.⁹⁵

According to land title information Grose’s stores were located on the north side of George Street bound by Charles Street, as registered in an old system deed, and not, as implied, on the southern side of George Street on Allotment 81 of Section 16.

On 30 November 1839 JH Grose was formally granted the land described as:

*allotment No. 15 on the south side of George-street in section No 16; bounded on the west by a line 4 chains 16 links; on the south by a line 1 chain 50 links; on the east by a line 4 chains; and on the north by George-street 1 chain 54 links.*⁹⁶

Joseph Hickey Grose was the son of Howell William Grose and his wife Sarah. He was baptised at Deptford, London, in August 1788. He arrived in New South Wales as a convict on the *Baring* (1) in 1815, having been tried in London on 15 September 1813 and sentenced to seven years transportation. He was granted his ticket of leave in December 1818 and by 1821 was described as a ‘shopkeeping clerk of McArthur’s’. He set up in business as a storekeeper, brewer, auctioneer and estate agent at George Street, Parramatta. He commissioned the paddle steamer *William the Fourth*, which served on the Sydney–Hunter River trade. After closing his George Street store he became a director of the Commercial Banking Company of Sydney, enlarged his steamer fleet and moved to Darlinghurst. He was declared insolvent in April 1844, coinciding with the colony-wide depression. He died at Lake Bathurst in April 1849 and was buried at St John’s Church, Parramatta.

Joseph Hickey Grose owned Allotment 15 until his death on 18 April 1849 and his estate was sworn at less than £50. The George Street property passed to his son Francis Grose, who owned it until 1 January 1863 when he sold it to Peter Miller of Parramatta, auctioneer, for £340.⁹⁷

The following year Miller sold the property on 1 January 1864 to Robert Adam Ritchie of Parramatta, smith, for £500.⁹⁸ The agreement specified that Ritchie would pay £250 cash immediately and raise a mortgage of the sale land to Peter Miller to secure the payment of the balance of £250 with interest to be paid by 22 February 1871. The land, described as Allotment 15 of Section 16, measured 2 roods 17 ½ perches.

Robert Adam Ritchie was born at Paisley in Renfrewshire, Scotland, in 1836. By 1848 the family had arrived in New South Wales where Robert worked for his brother John, a shipwright and engine-smith, in Sydney. Robert later worked for J and W Byrnes’s woollen mill at Parramatta, where his father was a manager. After a stint on the gold fields at Turon River diggings he was apprenticed to Joseph Whiting, blacksmith, in Parramatta. He took over Whiting’s business in Phillip Street in 1857 and expanded it by making agricultural implements including the celebrated ‘Ritchie Plough’.⁹⁹

Robert Adam Ritchie moved to Allotment 15 in 1865 or very soon after. He was living in George Street in June 1868 when he married for the second time to Clara Douglas, sister of his first wife Jemima Fergus Douglas. He had three sons and a daughter from his first marriage and after marrying Clara, they had another four sons and three daughters. Most of Robert’s children can be seen in the photograph of the family on the front verandah of their George Street home in 1870 (Figure 2.36).

According to the 1870 rate book the allotment contained a brick house valued at £35 on the western boundary, and a wooden house valued at £12. Ritchie also moved his business to a large workshop adjoining his George Street house. This is shown in the 1870 photograph at Figure 2.37.

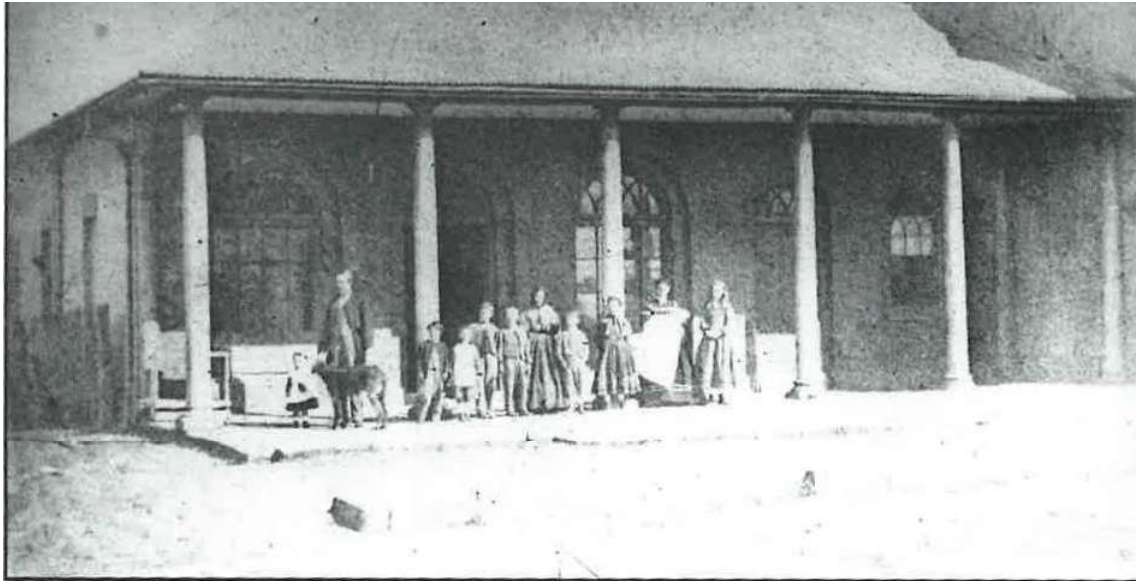


Figure 2.36 Robert Adam Ritchie's house, George Street, 1870. (Source: Shylie and Ken Brown, with Carol Liston and Robert Irving, 1995, *Parramatta: A Town Caught in Time*, p 20)

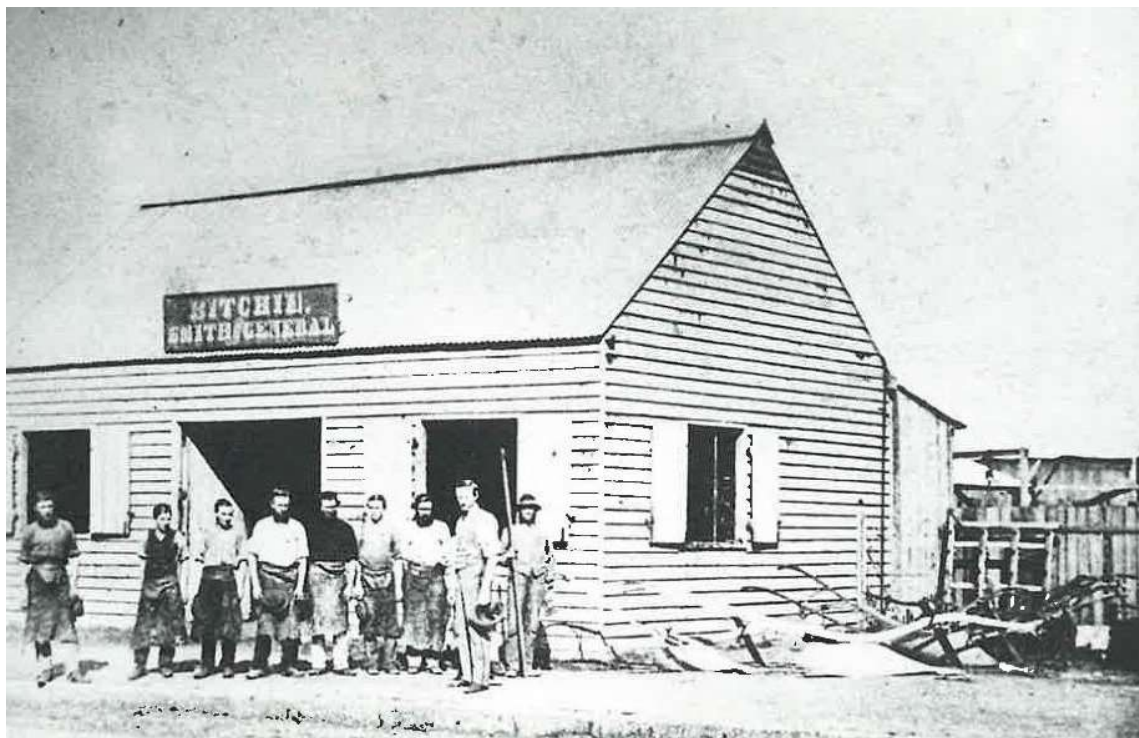


Figure 2.37 Robert Adam Ritchie with his staff outside the workshop, George Street, Parramatta, 1870. (Source: Shylie and Ken Brown, with Carol Liston and Robert Irving, 1995, *Parramatta: A Town Caught in Time*, p 21)

The *Cumberland Mercury* reported in August 1876 that RA Ritchie had completed and handed over to the Railways Department 'two well-finished and faithfully-made' goods carriages that 'compare favourably with the best imported'.¹⁰⁰ Ritchie's Parramatta Iron Works was the subject of an in-depth

feature in the *Cumberland Mercury* on 16 February 1878, which discussed the expansion of the business into the manufacture of passenger carriages and other rolling stock.

The establishment, including workshops, outbuildings, and timber yards, covers about an acre of land, having equal frontages to George and Macquarie Streets—probably one of the best situations in the town.

... a tramway is laid down from the George-street buildings in the direction of Macquarie-street, to expedite the conveyance of materials to and from the different parts of the works.

The site comprised a smith's shop fronting George Street which was described as a weatherboard building 150 ft long and 40 feet wide with a galvanised roof.

At the rear of the engineering and wood working departments is a timber yard, and at the end of this is a substantial building 100 feet long and 25 feet wide devoted almost exclusively to the preparation of the materials used in the manufacture of railway rolling stock...Provision is here made for the construction of eight railway trucks or sheep and cattle vans; and the building contains a tramway of wider gauge than the others traversed by a travelling frame or cradle, which is used to carry the finished carriages to a point wherein they are conveyed from the works.

At the rear of, and immediately adjoining this workshop of the most substantial and commodious division of the premises. It is used for no other purpose than the building of railway passenger carriages. It is a spacious and lofty two storied building, roofed with galvanised iron, and containing two rooms, each 17 feet high and 70 feet square....The engineering and fitting shop is under the same roof as, and adjoining, the division have just described.¹⁰¹

As the article indicates, Ritchie occupied the whole of Allotment 15 fronting George Street and Allotment 78 in Macquarie Street spanning Section 16 from south to north. Ritchie did not purchase Allotment 78 until December 1880 (see Section 2.3.30):

He won another government contract in 1878 to make 10 composite railway carriages to operate on the three railway lines in New South Wales. The carriages comprised first and second class compartments. The *Cumberland Mercury* reported in May the same year:

The manner in which Mr Ritchie has carried out his previous contracts entitles him to a first position as a manufacturer of railway rolling stock, and we notice that he is losing no opportunity of increasing the facilities for turning out that class of work at his establishment. He had just purchased some very valuable labour saving machinery...and...some important alterations have been made in the carpentry department.¹⁰²

One of the new railway carriages was transported from Ritchie's workshops in Macquarie and George Streets to the railway line on 26 April 1879.¹⁰³

An engraving published in the *Illustrated Sydney News* on 12 June 1880 (Figure 2.38) shows the relative position of Ritchie's house and workshop fronting George Street. Behind the workshop at the George Street entrance is a long workshop with a boiler under construction in the yard. This building abuts the boundary with Allotment 16, shown on the left with small trees and a long low storage shed (or possibly a chicken coop). Also visible on the site is a one-storey workshop extending the width of the allotment, with railway carriages under construction. A railway carriage on a track is shown beyond this building towards the Macquarie Street end of the site, which is described in the accompanying article as a 'series of tramways laid running from George Street through the whole length of premises to Macquarie Street, where there is another large entrance for taking out the rolling stock, &c'.

James Houison's two-storey home in Macquarie Street is shown adjoining the Parramatta Iron Works on the left and the Parramatta Railway Station and St John's Church can be seen in the distance.

According to the 1882 rate book, the brick house on this site had increased in value to £52 while the wooden house had been replaced by an 'iron work shop' valued at £100. In 1891 the brick house was still listed on the allotment with a value of £39 while other improvements on the land included a yard valued at £104 and wooden buildings at £35.

At the end of 1883 Ritchie was awarded a large contract to construct rolling stock for the NSW Government Railways and he commenced construction of a new factory at Auburn. When it was completed, Ritchie vacated the George Street/Macquarie Street site in 1885. Coates and Harper timber suppliers took over Ritchie's Parramatta Iron Works. On 27 June 1885 it advertised an unreserved sale of the company's entire stock prior to relocation to save the cost of carting it all to the new premises.¹⁰⁴

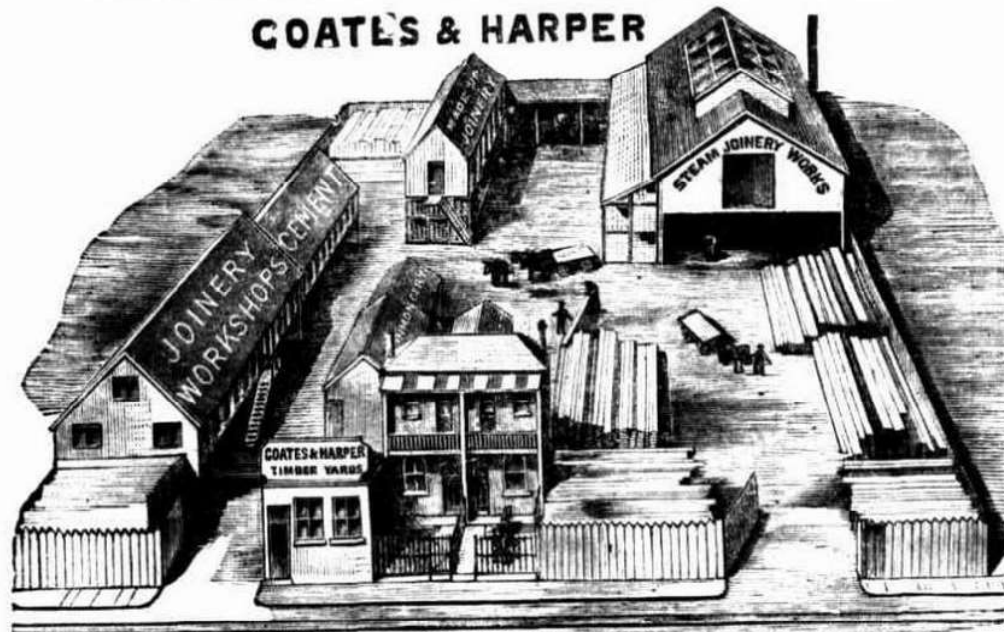


Figure 2.38 Robert Adam Ritchie's Parramatta Iron Works. Ritchie's house is right of the driveway entrance in George Street, looking south to Macquarie Street. (Source: *Illustrated Sydney News and New South Wales Agriculturalist and Grazier*, 12 June 1880, p 21)

Coates and Harper advertised the new premises in October 1885 as being next to the Victoria Theater on George Street, Parramatta. The company continued to operate on their two other sites in Parramatta.

A little farther up George-street we come to No.2 store yards, viz., those lately occupied by Mr RA Ritchie as the Government Railway Carriage Works. Here the visitor will almost get lost among the large stacks of Baltic dressed timber, sawn and split palings, post and rails, Kauri and all sizes of felloes. All the imported timber ready for immediate delivery, is transferred direct from the ships to these premises, whence it can be transmitted to customers without delay.¹⁰⁵

COATES AND HARPER,
 GEORGE STREET, PARRAMATTA, DARCY STREET, PARRAMATTA
 OPPOSITE RAILWAY STATION, GRANVILLE,
 and
 NEXT VICTORIA THEATRE, GEORGE STREET, PARRAMATTA.
 All Communications to be addressed George street, Parramatta



MAIN YARDS, GEORGE STREET, PARRAMATTA.

The Famous Sun Galvanised Iron. The Noted Coast Hardwood.
 The Very Best Fencing Stuff. Joinery Cheaper than Sydney.
 Lime, Cement, Slates, Pickets, Drain Pipes, Tiles.
 Every Sort of Pine, Redwood, Cedar, Baltic, Kauri.
 Sawing, Planing, and Morticing by Steam done for Customers Cheaply.
The CHEAPEST YARDS IN CUMBERLAND for everything required in
 Building. Note the Address, and before going elsewhere, give
Coates and Harper a Trial.

Figure 2.39 Advertisement showing the sawmill of Coates and Harper on their main site further east in George Street. (Source: *Cumberland Mercury*, 20 August 1894, p 1)

The two advertisements (Figure 2.39 and Figure 2.40) listed the business operating from two locations on George Street and one on Darcy Street in Parramatta, and another site opposite Granville Station. The business operated until 1897 when it collapsed following the 1890s depression. The business evolved as L. Harper and Co, named after Louisa Harper, nee Coates (daughter of George Coates senior), wife of Richard W Harper. Competitor William Hart and Sons Timber Merchants also folded in

the 1890s depression and a new company was formed under WW Hitchcock trading as Hart and Hitchcock and Company.



Figure 2.40 Advertisement for Coates & Harper, Parramatta and Granville Timber Yards, c1890s. (Source: City of Parramatta Research & Collections)

The Public Works detail sheet and the published version dated to 1895 (Figure 2.42 and Figure 2.43) depicts the brick house and outbuildings together with a cistern or well. A substantial building is shown on the eastern boundary of the allotment, and another building is located to the rear of the block. Part of Lot 78 fronting Macquarie Street has been subdivided off the main site and a set of three terrace houses erected on that land.

In October 1895 Ritchie & Co advertised to let in October 1895 the ‘commodious shed’ adjoining Ritchie and Co Sale Yards, George Street and lately in the occupation of Coates and Harper.¹⁰⁶ Edward Golsby took over Ritchie’s Sales Yards, and announced to customers in February the following year that he would offer ‘sales of Stock, Poultry, Pigs, Fruit, Vegetables, Furniture, and all kind of Farm Produce’ on Tuesdays and Fridays.¹⁰⁷ Edward P Pearce, auctioneer, occupied the property from 1905 to 1917. By March 1918 the premises were taken over by the Southern Produce and Livestock Company, which was run by Karl William Huenerbein. He carried out renovations and alterations to the site.¹⁰⁸

Following Robert Adam Ritchie’s death in 1891, on 20 September 1919 his executors and trustees contracted to sell Allotments 15 and Allotment 78 of Section 16 to Karl William Huenerbein of Parramatta, auctioneer, for £2050, stipulating Huenerbein pay £50 immediately followed by annual instalments until 1924.¹⁰⁹ The transfer was registered on 2 November 1920.¹¹⁰ In 1922 Huenerbein lodged an application to convert the property to Torrens title.¹¹¹

On 13 January 1925 Huenerbein transferred the land to the Municipal Council of Parramatta for the establishment of new municipal markets. He promptly leased the site back for 15 years as the municipal markets plan was abandoned. He re-purchased the property on 15 May 1940.¹¹² He promptly conveyed it to the Southern Produce and Livestock Co Pty Ltd.

The Southern Produce and Livestock Company shared the site from the mid-1920s with W Cheshire and Company (fruit auctioneers) and the Federal Printing and Publishing Company. In 1932 the Sands Directory listed Southern Produce, W Cheshire and Company, Sterling Furniture Company, BK Jackson (fruit auctioneers) and R Langford (a tailor) at this site.

The land was transferred back to the City of Parramatta on 15 December 1952.

The brick house formerly occupied by Robert Adam Ritchie was demolished by 1920, although the large timber frame and weatherboard building survived along the eastern boundary. By 1956 almost the whole of Allotment 15 was covered with an old, galvanised iron shed or sheds. The Iron Works building abutting the boundary with Allotment 16 was extant in 1967, when it was described as 'Old Irreg. G.I. Building'.

In 1957 the allotment was subdivided into Lots K and L. Lot K (Lot 1 DP 607181), comprising the bulk of Allotment 15 and measuring 1 rood 30 perches, was sold on 9 April the same year to John Henry Thompson Burgess of Parramatta, company director, and Robert Henry Mutton of Dundas, advertising agent.¹¹³ Burgess and Mutton sold Lot K in 1960 to Town and Country Development Pty Ltd. Twelve months later the land changed hands to National Furniture Co Pty Ltd.¹¹⁴

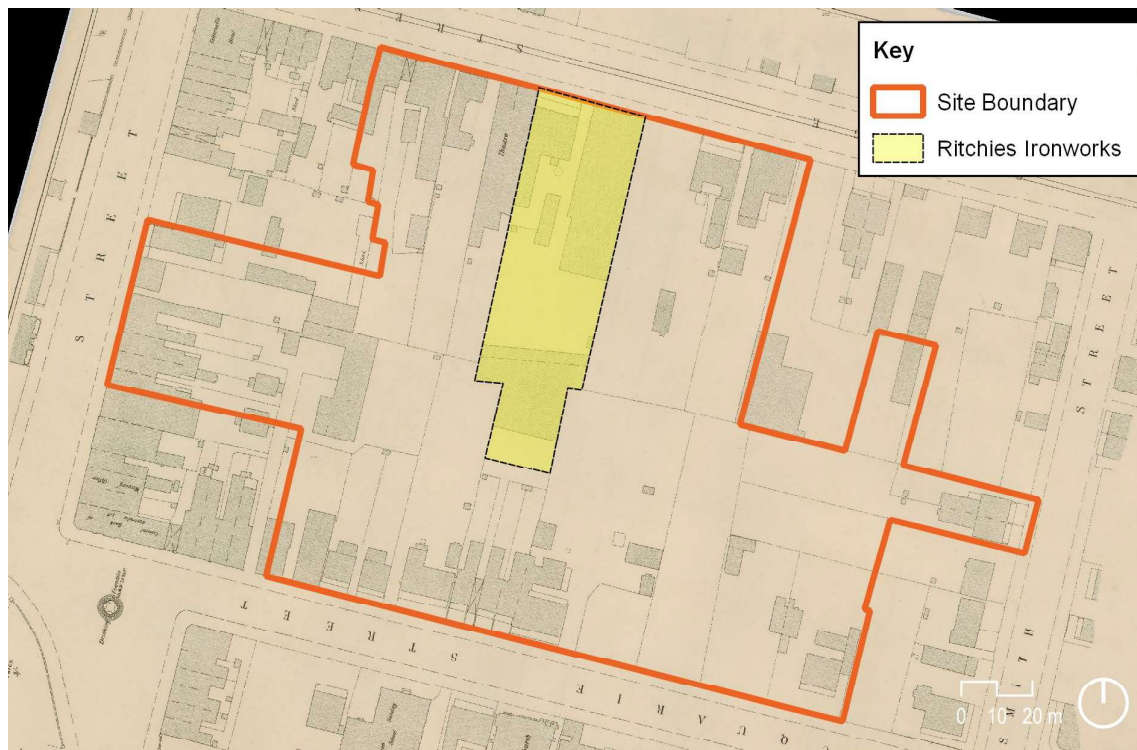


Figure 2.41 Extract from 1895 Parramatta detail survey, sheet 18, showing the location of Ritchie's Ironworks within Lot 15 and part of Lot 78. (Source: SLNSW)

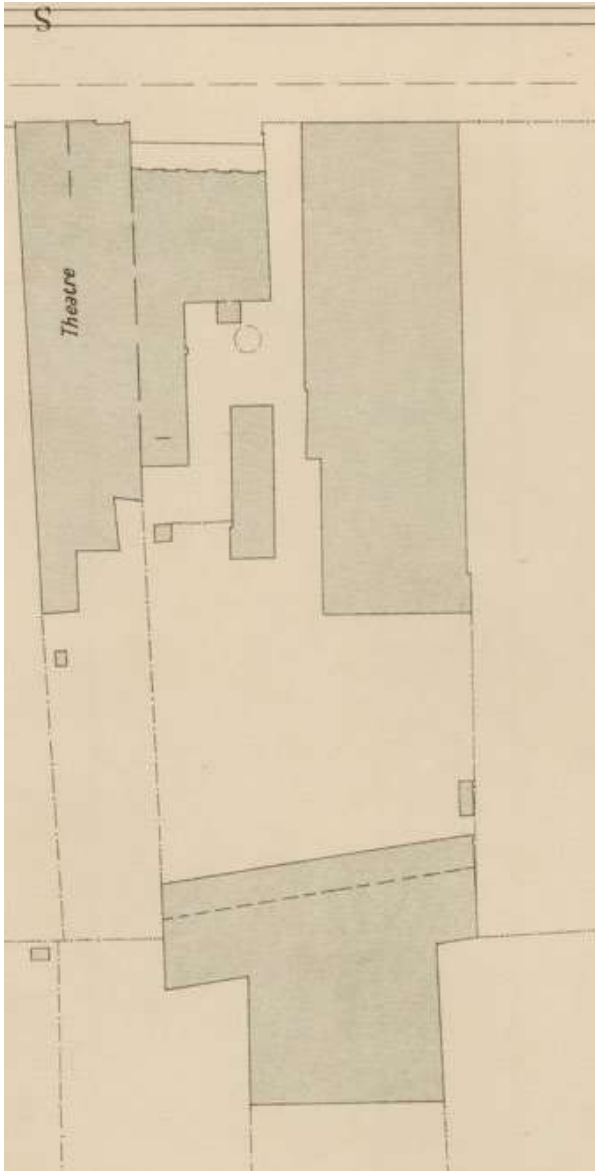


Figure 2.42 Extract from 1895 Parramatta detail survey, sheet 18. (Source: SLNSW)

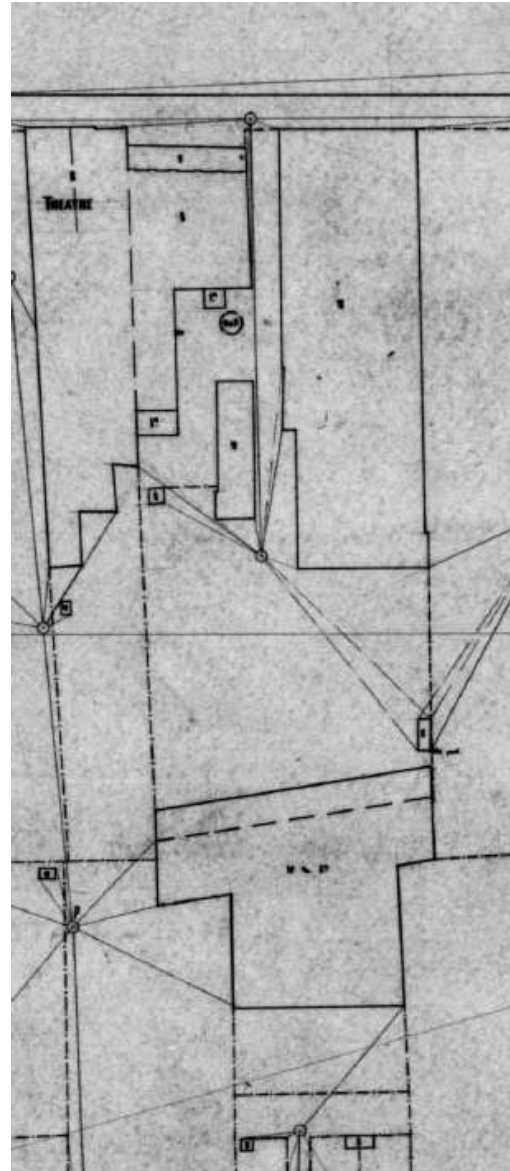


Figure 2.43 PWDS1544-S1223, detail survey, 1894. (Source: Sydney Water Archives)

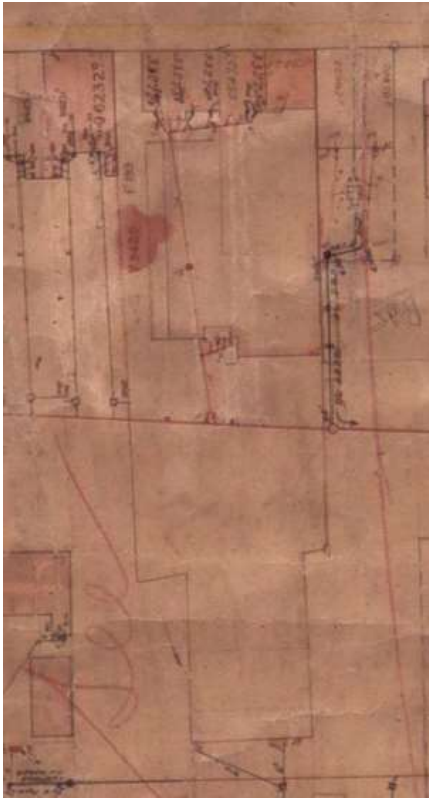


Figure 2.44 Detail from Blackwattle plan depicting the footprint of two interconnected buildings along the George Street alignment and a large building to the south with an awning stretching along the western extent. (Source: Sydney Water Archives)

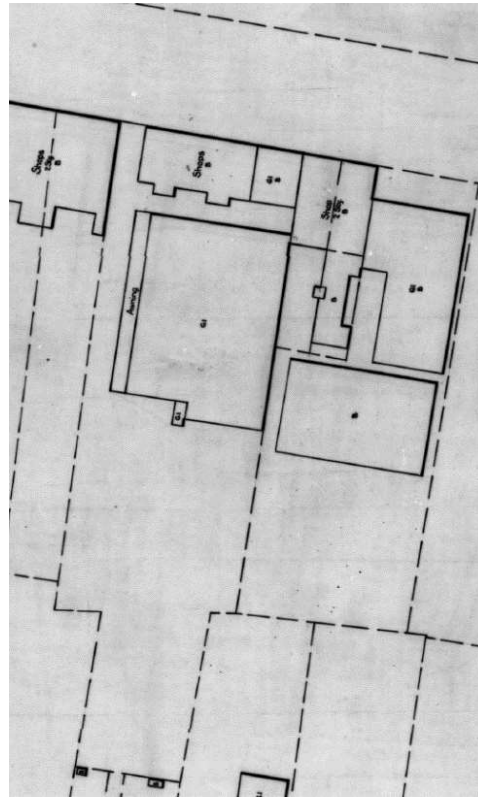


Figure 2.45 Detail from DS 2711, 1954 depicting the footprint of two interconnected buildings along the George Street alignment and a large building to the south with an awning stretching along the western extent. (Source: Sydney Water Archives, detail survey)

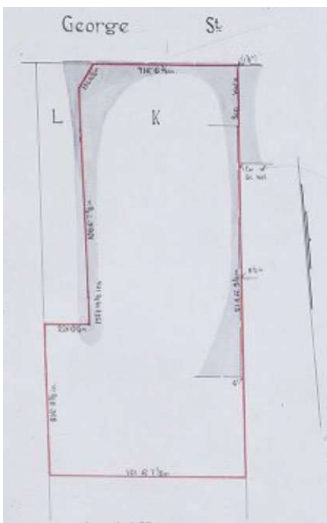


Figure 2.46 Title diagram for Lot K, resubdivision of Allotment 15 and part of Allotment 78, 1957. (Source: NSW Land Registry Services, CT Vol 7394 Fol 165)

2.3.6 Parramall Lot 1 DP 607181

The Parramall Shopping Arcade was constructed in George Street in 1979–1980 by the National Mutual Life Association of Australasia Ltd. Three portions of land comprised in Allotments 15 and 16 of Section 16 were consolidated on certificate of title Vol 14068 Fol 68 in April 1980 in the name of the National Mutual Life Association of Australasia Ltd as Lot 1 DP 607181 (Figure 2.47). This is the present site of 61B George Street.

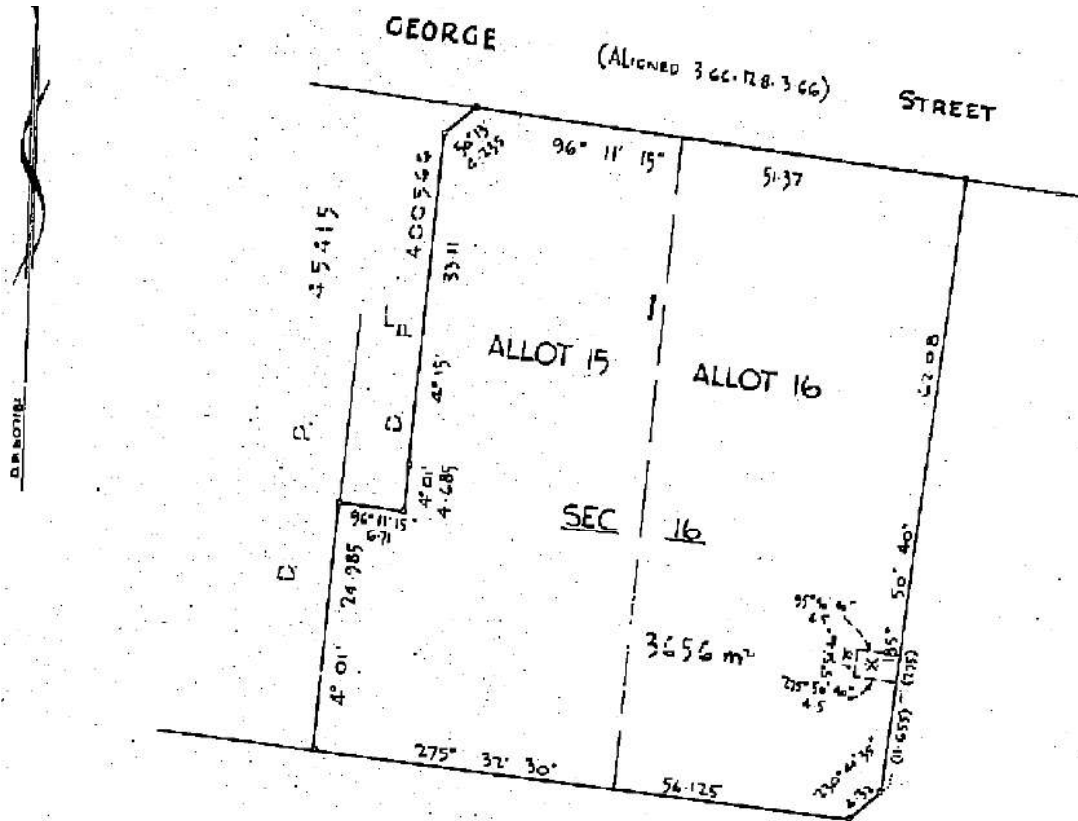


Figure 2.47 Block plan accompanying Vol 14068 Fol 68 comprising parts of Allotments 15 and 16 in Section 16. (Source: NSW LRS)

2.3.7 Allotment 14 Section 16—grant to John Montgomery

Both the 1792 and the 1804 maps of Parramatta indicate a convict hut erected central to the frontage of an allotment measuring 100 feet (30.48 metres) by 200 feet (60.96 metres) (Figure 2.48 and Figure 2.49). The width of George Street was originally 205 feet (62.484 metres) but is now 20 metres. This means the original street frontage is now 21.242 metres behind the present frontage.

After 1804 the boundaries of the convict allotments were altered by various means to their configuration in 1823. The 1823, 1831, 1839 and 1844 maps of Parramatta indicates that Allotment 14 possessed a single building in approximately the same position as the previous convict hut (Figure 2.50 and Figure 2.51).

Between 1839 and 1844 another building had been constructed on the street frontage (43–47 George Street). The new building is of masonry construction while the building on the original frontage is of possible wooden construction (Figure 2.52).



Figure 2.48 Detail from 1792 plan showing parts of two structures within Lot 14. (Source: The National Archives UK)

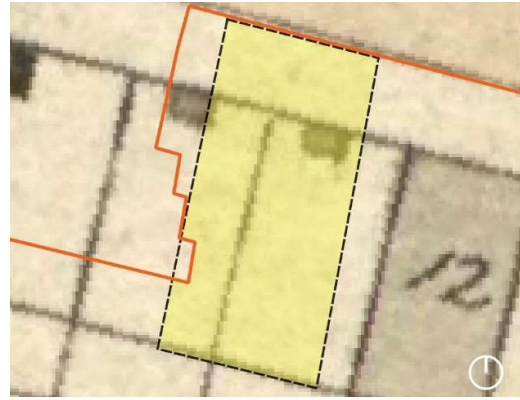


Figure 2.49 Detail from Evan's 1804 plan showing one structure within Lot 14, with a second structure located just outside the western boundary. (Source: The National Archives UK)

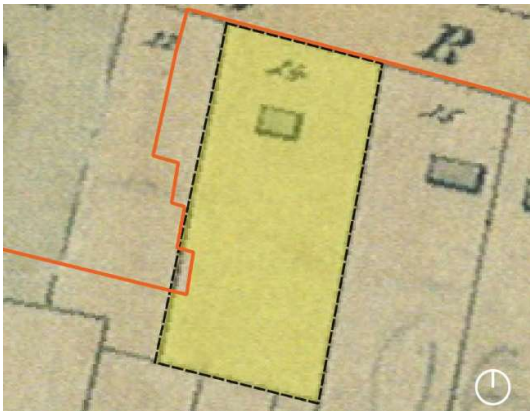


Figure 2.50 Detail from Stewart's 1823 plan showing a single structure within Lot 14. (Source: SLNSW)

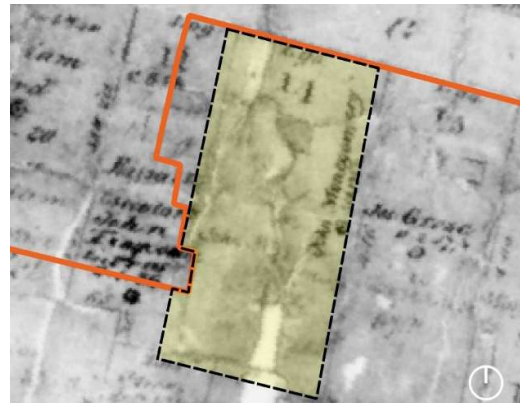


Figure 2.51 Detail from Johnstone's 1836 plan, which although damaged, shows at least one structure within Lot 14. (Source: NSW State Archives and Records)



Figure 2.52 Detail from Brownrigg's 1844 plan showing two masonry buildings within Lot 14. (Source: SLNSW)

On 11 June 1841 Allotment 14 of Section 16 was granted to John Montgomery of Parramatta. The land was described as being on the south side of George Street and measuring 2 roods 37½ perches, being the allotment leased to him on 30 June 1823. He purchased the allotment for the sum of £61/13/9.¹¹⁵ On the 1823 lease the land was described as measuring:

*one hundred and seventeen and one half rods bounded on the West by a line 3 chains 93 links, on the South by a line 1 chain 77 links, on the East by a line 3 chains 93 links, and on the North by George Street 1 chain 96 links.*¹¹⁶

John Montgomery, a Roman Catholic born in 1763, was sentenced to 7 years and transported from County Cork, Ireland, on the ship Queen, arriving in Sydney in April 1791 as part of the Third Fleet. In 1805 he was convicted of receiving stolen property, resulting in a period of secondary punishment. However, by 1814 he seems to have reformed himself sufficiently to become a constable at Parramatta. He was later to act as juror on two cases in 1819 and 1820, one held at Parramatta, the other at the Field of Mars.

On 13 September 1819 he received a grant of 50 acres at Castle Hill. Cultivation of this land and other trading pursuits enabled him to supply HM Magazine at Parramatta with 314 lbs of fresh meat on 31 May 1820. He also supplied the Commissariat Stores with fresh meat and salt pork in the same year.

John Montgomery continued his pastoral pursuits well into 1822, as indicated by his signature on a memorial about common land just south of Parramatta and called the 'Dog Traps'. The Land and Stock Muster of 1822 also indicates that he was resident on his grant and that he held 160 acres all cleared.

John Montgomery sold his land at Castle Hill on 7 and 8 August 1826 for £25.

In 1822 he received a beer licence for the sale of beer at unspecified premises in Parramatta. There is evidence that the license was renewed in 1825. The name and location of the premises, Saint Patrick's Inn, George Street, Parramatta, was revealed in later license renewals from 1829 to 1836.

On 5 April 1823, John Montgomery was listed in the General Return of Allotments in the Town of Parramatta. He held two allotments, namely Allotment 14 of Section 16 (subject site) and Allotment 30 of Section 12 on Hunter Street, Parramatta. It is not known if the Saint Patrick's Inn was located on Allotment 14 or not.

Higginbotham postulates that if John Montgomery was both owner and licensee, the simplest interpretation is that the Saint Patrick's Inn was located on Allotment 14. Nonetheless the purchase and sale values of the western part of *Allotment 12 suggest major improvements. It was valued at £450 to £500 between 1833 and 1840. The other consideration is whether the improvements indicated on Allotment 14 could have housed an inn. There is a single building, on approximately the same location as the original convict hut, depicted on the 1823, 1831, 1839 and 1844 maps of Parramatta. It is only between 1839 and 1844 that a new building is erected on the street frontage. By 1844 the configuration of the buildings is identical to that shown in more detail on the auction plan of 1848 (Figure 2.53). The early town maps only show the principal buildings on each allotment, so it is quite possible that the outbuildings on the 1848 auction plan actually were present at an earlier date. It is noted that a smithy is present on the 1848 auction plan, a service that was commonly associated with coaching inns to service carts and carriages.*

John Montgomery suffered a serious setback in 1827 when fire destroyed premises he had leased to Mr. George on Marsden Street, Parramatta. In the 1828 Census, John Montgomery, then 65, was

listed at Parramatta with his young wife Elizabeth, aged 18, and possibly his brother Patrick Montgomery, aged 70. The latter had been transported for life on the ship Atlas in 1804. John owned 5 horses and 3 cattle, but no other land is listed against his name.

Nonetheless John Montgomery continued to prosper. He sold 50 acres on the road to Kissing Point on 2 October 1833 for £50. He also sold 'two messuages and dwelling houses' on Hawkesbury (Windsor) Road, Parramatta, on 14 April 1834 for £104. He sold another allotment on Grose Street, Parramatta, on 31 December 1838 for £130. In 1833 he had purchased part of Allotment 12 on George Street for £450, selling it in 1840 for £500.

Montgomery died in September 1841. In his will, he gave his wife a life interest in Allotment 14 and bequeathed it to the Roman Catholic Church after her death.¹¹⁷ In 1848 the property was subdivided into three lots (Figure 2.53) and advertised for auction on 13 October (Figure 2.54).

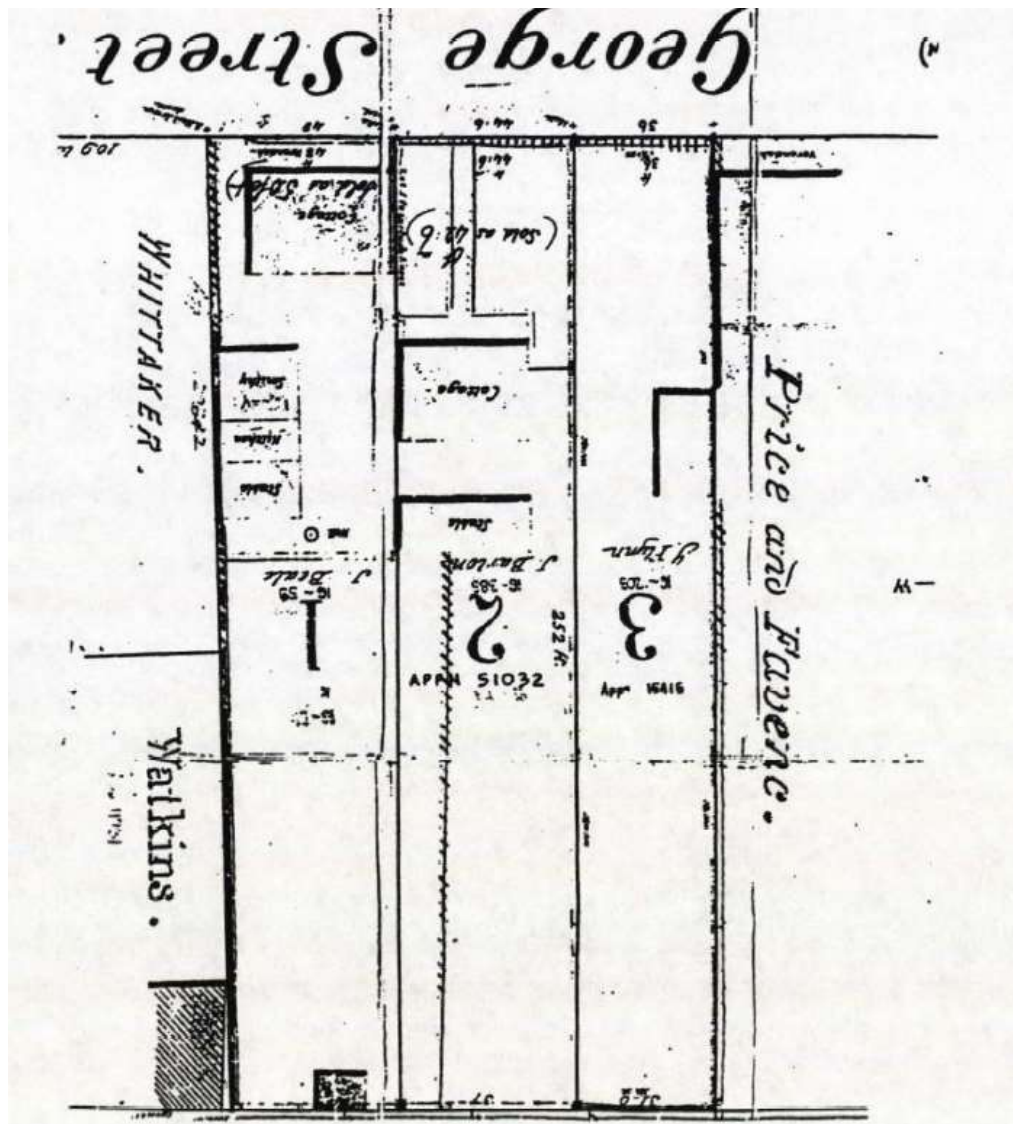


Figure 2.53 Subdivision of Allotment 14 Section 16 into three lots, 1848. (Source: reproduced from E Higginbotham, 41–53 George Street, Parramatta, p 70)

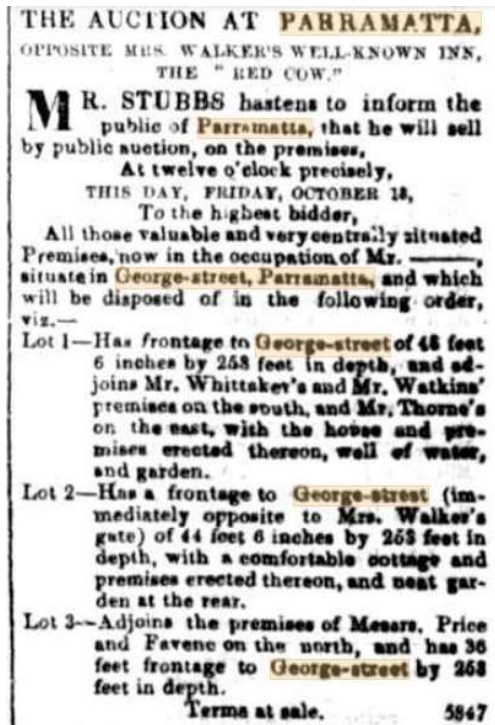


Figure 2.54 Auction sale advertisement for subdivision of Allotment 14, 13 October 1848. (Source: *Sydney Morning Herald*, 13 October 1848, p 1)

2.3.8 Allotment 14—Lot 1

The 1848 auction plan shows a cottage on Lot 1 which was constructed between 1839 and 1844. It features a front verandah (43–47 George Street) (Figure 2.53). Also shown is a smithy, kitchen and stable housed in a single outbuilding at the rear, together with a well, and a garden and another outbuilding on the rear boundary.

The auction sale notice of October 1848, described Lot 1 as containing ‘the house and premises erected thereon well of water and garden’ (Figure 2.54).

Lot 1 was purchased by Frederick Beale of Parramatta, a baker, for the sum of £250. It is not known whether he lived on this site or elsewhere in Parramatta. By 1854 Frederick Beale had undertaken substantial improvements to the property. He sold it on 2 March 1854 to Peter Miller of Sydney, a publican, for £1000.¹¹⁸ Peter Miller also operated an aerated water factory in George Street Parramatta in the late 1850s and early 1860s.¹¹⁹ An archaeological excavation of the site in 1996 found a substantial quantity of glass bottles featuring the name ‘Peter Miller’ or ‘P Miller & Co’ suggesting that the business operated out of this site.¹²⁰ From the late 1860s, Peter Miller leased the property to a succession of tenants. For instance, in 1870 Lot 1 comprised two houses occupied by Stephen Barge and Patrick Sheedy.

The council rate book in 1870 describes Lot 1 as comprising stone houses, each having an annual rateable value of £78 and £65 respectively for the western and eastern half of the building.

Miller owned the property until 1 July 1876 when he sold it to Henry Charles Woolcott for £2000. He paid Peter Miller £500 towards the sale price of £2000 but mortgaged the property to Miller for the remaining £1500; Miller retained the use of the stable in the rear courtyard. Peter Miller appears to

have undertaken additional improvements to the property prior to its sale on 1 July 1876 for £2000, which was double its sale price in 1854. These improvements may have included the sandstone façades, various outbuildings and extensions.

Woolcott established his business as a chemist and druggist on the premises (Figure 2.56). He occupied it for a short time and on 3 January 1879 he sold the business and property to fellow chemist Samuel Harris for £500, being the remaining equity. Harris promptly sold the equity in the property on 20 June 1879 to Joseph Whitworth of Parramatta. The mortgage held by Miller was paid off by 13 December 1883 and conveyed to Whitworth.

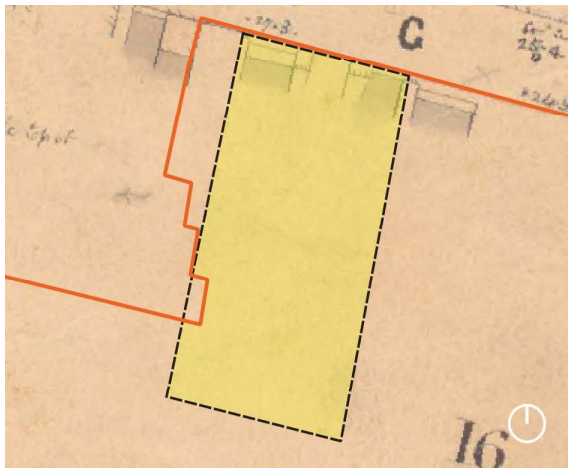


Figure 2.55 Detail from an 1855 survey plan of the street alignments of Parramatta showing the buildings adjoining the street frontage. (Source: City of Parramatta Research and Collections)

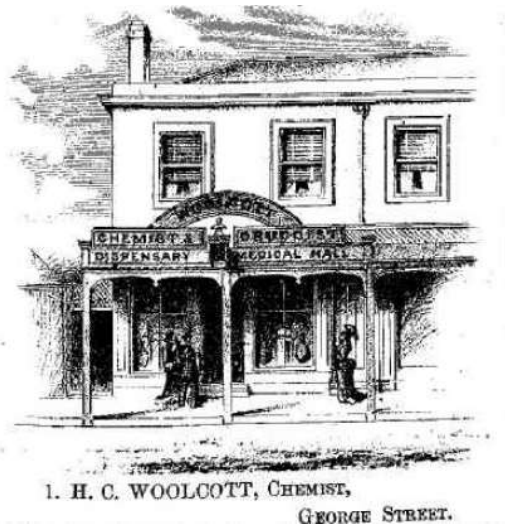


Figure 2.56 HC Woolcott's chemist in George Street on Lot 1 of the resubdivision of Allotment 14 of Section 16. (Source: *Illustrated Sydney News and New South Wales Agriculturalist*, 10 November 1877, p 1)

In the 1882 council rate book the property is described as containing 'brick houses', each valued at £78, occupied by Hans Harper and WG Bladon respectively. The 1891 rate book describes the western half of the building as a brick house and dwelling, while the eastern half was a brick shop and dwelling; both buildings were valued at £65. The 1895 detail plan of Parramatta reveals the configuration of the buildings on Lot 1.

Following the death of Joseph Whitworth the property was advertised for auction on 23 March 1923 as Lot 1:

PARRAMATTA, George Street, near Church Street—Pair semi-detached BRICK SHOPS and DWELLINGS, known as Nos 45 and 47 George Street, with extensive outbuildings, Land 50 feet x 253 feet. 121

The 1926 survey plan of the property (Figure 2.57) indicates little change from 1895 except for the replacement of the WC with new ones directly behind the shops, the connection of one of the outbuildings to the back of the shops and the provision of a right of way from Macquarie Street. The buildings and structures on this site are visible in two aerial photographs from c1940 (Figure 2.59 and Figure 2.60). The 1974 survey plan (Figure 2.63) shows the brick stable or shed on the eastern boundary and also the presence of a galvanised iron shed at the rear of the block.

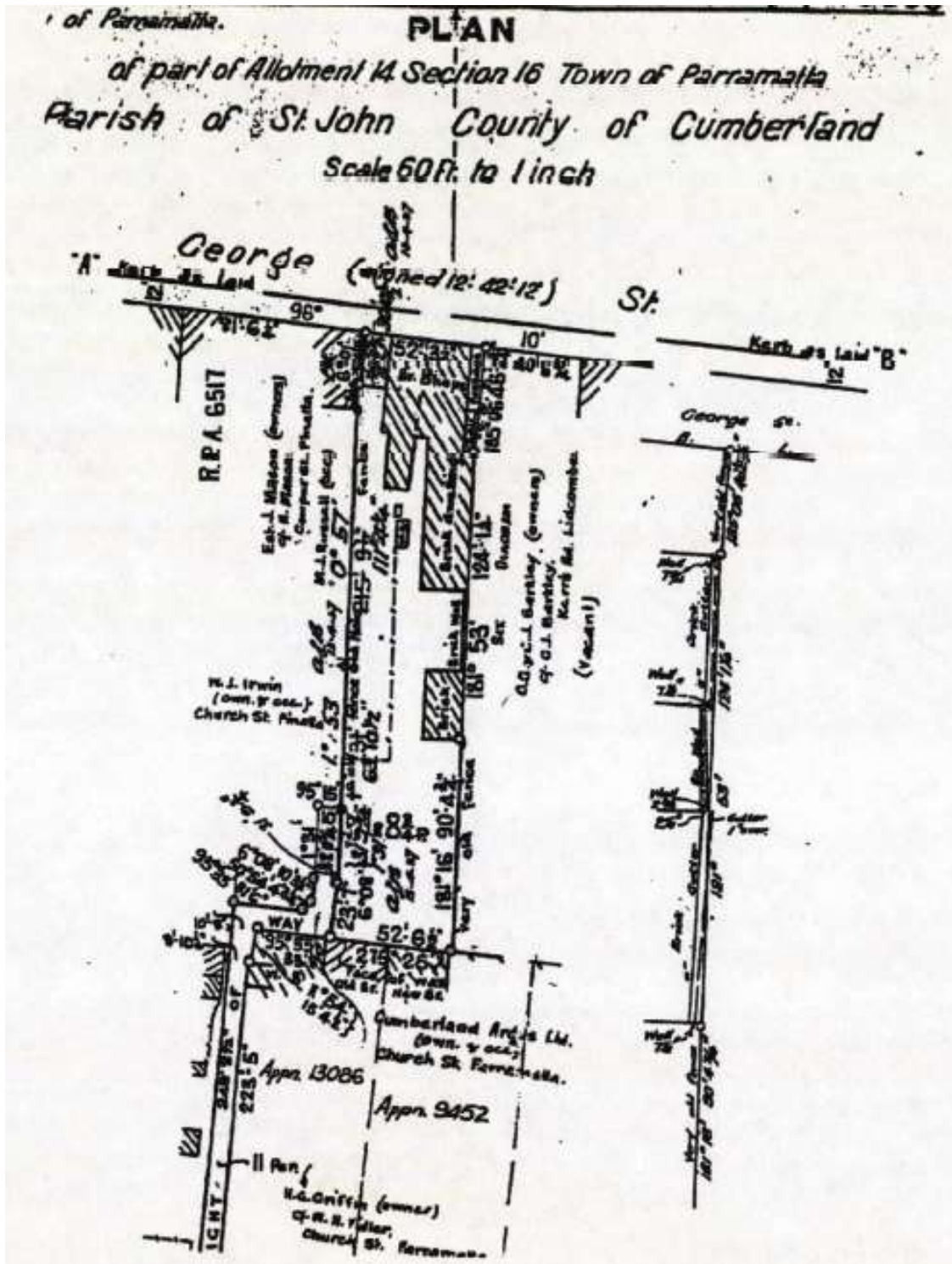


Figure 2.57 Survey plan of Allotment 14, Lot 1, 1926. (Source: NSW Land Registry Services, DP 395076)

2.3.9 Allotment 14—Lot 2

On 22 July 1845 Elizabeth Andrews, formerly the widow of John Montgomery, relinquished her life interest in Allotment 14 to Rev John Bede Polding of the Roman Catholic Church in accordance with her late husband's will. When Allotment 14 was subdivided by the Church in 1848, Lot 2 *contained a cottage in the same position as the building depicted on the 1792, 1804, 1823, 1831, 1839 and 1844 maps. Behind this building is a stable and garden* (Figure 2.53).

According to the advertisement for the sale on 13 October 1848 (Figure 2.54) Lot 2 was described as containing:

a comfortable cottage and premises erected thereon, and a neat garden at the rear.

George Barton of Parramatta, a shopkeeper, was the highest bidder at the auction, purchasing Lot 2 for £100 though the sale was not formally registered until 30 April 1849.¹²² He died in March 1854 at his residence in George Street, Parramatta. He named Andrew Payton trustee of his estate and in his will awarded a life estate of his George Street house and premises to his wife. After her death the property passed to his nephew, George Barton (2). George Barton (2) sold the property in January 1863 to Robert Barton of Dirty Swamp, near Bathurst, for £200.¹²³

Following Robert Barton's death his widow, Sarah, sold Lot 2 to Andrew Payton for £200 on 30 October 1864.¹²⁴ Mary Seward, wife of Charles Seward of Parramatta, purchased the property on 24 June 1854 for £165.¹²⁵ She gifted Lot 2 in February 1887 to her daughter, Annie Goddard, with Hugh Taylor as trustee.¹²⁶ Annie Goddard was married to John Alfred Goddard, a storekeeper of Parramatta. Annie Goddard sold the property on 7 November 1890 to William Kirby of Parramatta, a fruitgrower, for £725.¹²⁷ Kirby appears not to have occupied the property, but rather to have let it to tenants, including James Burns (1892); George Tuck (1892); Sing Choy, fruiterer (1893-1894); 'Sammy' (1896); Ah Yin (1898-1902); and possibly Lee Tai, fancy goods (1895-1896).¹²⁸

The 1870 rate book listed two wooden houses on the property valued at £16 each. By 1891 there was little change in the description, although the annual values were £26 and £16 respectively, suggesting one of the houses had been enlarged and improved. It is possible one or both of the buildings are the structures depicted on the 1848 auction plan.

A more detailed survey plan in 1895 shows a building on the street frontage conjoined to another building at the rear in the same position as the building on the 1848 auction plan. The former stable identified on Lot 2 in 1848 has been demolished (Figure 2.53).

William Kirby mortgaged Lot 2 to the Bank of New South Wales on 11 April 1890 for £450.¹²⁹ By 1913 he had defaulted on the mortgage, leading to a mortgagee sale of Lot 2 on 7 November 1913 for £250, which included the adjoining land containing the Parramatta Assembly Hall/Victoria Theatre on Lot 3 of Allotment 14.

2.3.10 Allotment 14—Lot 3

When Allotment 14 was subdivided in 1848 the auction advertisement did not describe any improvements on Lot 3, which measured 36 feet frontage to George Street by a depth of 253 feet. However, the accompanying plan (Figure 2.53) shows some form of building on the site.

Lot 3 was sold at the auction to Thomas Flynn of Parramatta, a shopkeeper, on 9 December 1848 for £80. He owned the property until 7 March 1855 when it was sold to William Walsh, another Parramatta

shopkeeper, for £300. The increased sale price suggests some improvement to the property between 1848 and 1855.

William Walsh lived at, and ran a shop from, the site. He advertised the property for sale in late June 1859 as follows:

*PARRAMATTA—For SALE, those central business PREMISES, opposite the Red Cow Inn, George-street, now doing a good trade—a commodious shop, suitable for any business, with a four-room cottage and kitchen. In the latter is a pump which supplies and inexhaustible quantity of the most beautiful water, and also Russell’s stove. There are stores and stabling, and a large garden.*¹³⁰

Walsh sold the property on 9 October 1866 to John Golledge (also spelt Gollidge) of Parramatta, a draper, for £300. On 2 November 1876 he raised a mortgage for £1000, which he apparently paid off, and regained full ownership of the land in August 1882. John Golledge & Son General Drapers advertised its business at ‘Parramatta House’, George Sydney, Parramatta,¹³¹ which is likely to be the shop premises located on Lot 3. The business was still at this location in August 1878.¹³²

John Golledge advertised the property for auction in April 1882. The advertisement included a detailed description of the buildings, which were part of the substantial improvements undertaken to the property in about 1876:

The buildings are brick, substantially built, 2 stories and attic, with balcony and verandahs.

The shop is 31 feet by 23 feet, plate-glass fronts, and fitted in a most convenient and excellent order.

The dwelling contains 12 well-arranged and some very spacious rooms, with attached kitchen (fitted with cooking range), servant’s rooms, pantry, bathroom and scullery.

Coach house, stables and loft.

*Water and gas laid on.*¹³³

On 8 August 1882 Golledge conveyed Lot 3 to the Parramatta Friendly Society and Hall Company for the sum of £2350. The purchase was reported in the *Evening News* in April.¹³⁴ Directors of the Friendly Society’s Hall made temporary alterations to the building to accommodate the lodges they planned to hold in the hall.¹³⁵ The following month A Bastert, an architect, invited tenders for the alterations and the erection of the new Friendly Society’s Hall on George Street.¹³⁶ The new hall was officially opened on 24 May 1883 with a grand gala day.¹³⁷



Figure 2.58 Engraving of the Parramatta Friendly Society's Hall. (Source: *Australian Town and Country Journal*, 12 July 1884, p 26)

The Parramatta Friendly Society and Hall Company, a co-operative group of local tradesmen, changed its name to the Parramatta Assembly Hall Company on 14 September 1887. It continued to use the hall until 3 April 1900, when the company was liquidated and its assets released to the Bank of New South Wales. On 5 June 1908 the bank lodged an application to convert the property to Torrens title. Valued at £1550, the site was occupied by James Sands and Agnes Nelson as weekly tenants.¹³⁸ The footprint of the building is shown on the survey lodged with the primary application (Figure 2.61) and the certificate of title (Figure 2.62).

The Bank of New South Wales advertised the property for auction on 18 July 1913, comprising:

All that Parcel of LAND, having a frontage of about 36ft 1 ¾ in to George-street (nearly opposite the Commercial Bank), by a depth of about 259ft, being part of Lot 14, Section 16, area 32 ½ perches. Erected thereon is a substantial two-story [sic] BRICK BUILDING, iron roof, known as the PARRAMATTA ASSEMBLY HALL or VICTORIA THEATRE, with Shop and Corridor, the Main Hall being about 78ft by 32 ft.

ALSO, all that Parcel of LAND, adjoining the above, having a frontage of about 42ft 6in to George-street, by a depth of about 252ft, being part of Allotment 14, Section 16, area 39 1/3 perches, freehold.¹³⁹

The respective owners of Lot 2 and Lot 3 held mortgages with the Bank of New South Wales and, because of default on the loans, the properties were claimed by the Bank. In 1913 the properties were sold in a single line to William Barkley of Rookwood who, according to the *Cumberland Argus*,

intended 'to convert the theatre into a picture show and have a skating rink in the lower part of the building'.¹⁴⁰ The property was transferred to William Barkley on 7 November 1913.¹⁴¹

The following year Barkley lodged an application to erect a new wooden building on the land next door to the old Victoria Theatre (Lot 2), but council rejected the application.¹⁴²

In 1916 the property was advertised to let as 'the Old Victoria Theatre, over the billiard-room, suitable for an American Shooting Saloon, store-room, or other purposes'. The owner was willing to renovate to suit the tenant, the rent was moderate, and there was also a large paddock at the side of the building.¹⁴³

The land described in the 1913 auction advertisement above and the paddock noted in the 1916 to let notice refer to Lot 2 of Allotment 14, indicating that the buildings on the land had been removed.

The building was still occupied in 1924 when Alderman Musto drew council's attention to the unsafe and unclean condition of the building. He believed the old Victoria Theatre had been condemned for 12 years and was unfit for occupation, especially for the storage of furniture (the present use of the upper floor hall).¹⁴⁴ The Council Inspector recommended a closing order as it was in a very dangerous state.¹⁴⁵

William Barkley died in August 1924 and the old Victoria Theatre passed by transmission on 13 October 1925 to Carrington Jubilee Barkley of Lidcombe, a produce merchant, and Clementine Garnett Barkley of Flemington, a butcher.¹⁴⁶ They retained ownership of the property in May 1939 when the building was gutted by a fire, with the damage bill estimated at £4000. The roof collapsed in and the building itself also collapsed. At this date the Old Victoria Theatre was occupied by the shops of Lanyon and Sons (poultry suppliers) and Dean Co (estate agent), as well as the Advertiser newspaper offices and printing works.



Figure 2.59 Detail from EW Searle's oblique aerial of Parramatta, c1939/1940, showing Lots 2 and 3 of Allotment 16 as vacant land. The building material on the site could be debris left over from the fire which destroyed the old Victoria Theatre in May 1939. It could also be site material for the construction of the shops in 1930. (Source: National Library of Australia)



Figure 2.60 Aerial view of Parramatta by Frank Hurley, after 1940, showing the new shops and residences erected on Lots 2 and 3 of Allotment 14 after fire destroyed the old Victoria Theatre in May 1939. (Source: National Library of Australia, <<http://nla.gov.au/nla.obj-160018036>>)

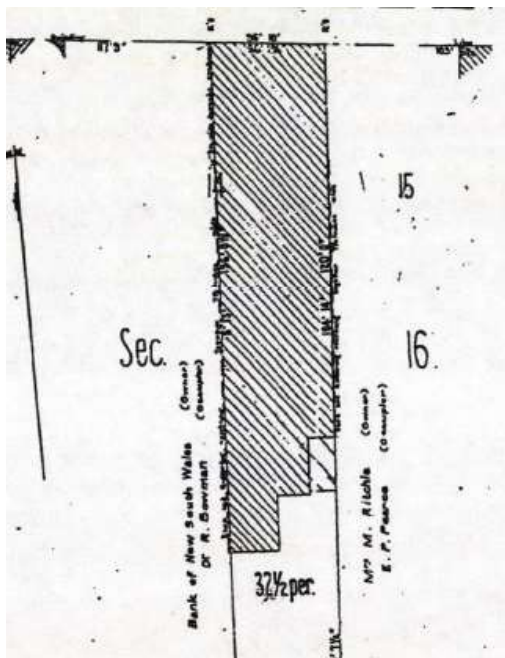


Figure 2.61 Plan of Allotment 14, Lot 3, 1908. (Source: NSW Land Registry Services, DP 65415)

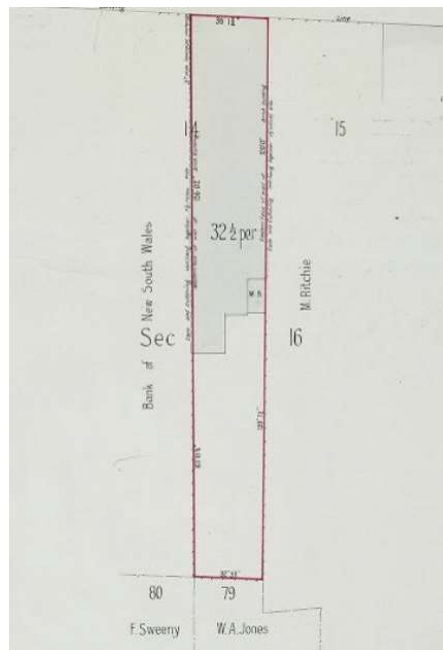


Figure 2.62 Title diagram of Lot 3 of Allotment 14 on CT Vol 1940 Fol 157, 1909. (Source: NSW Land Registry Services)

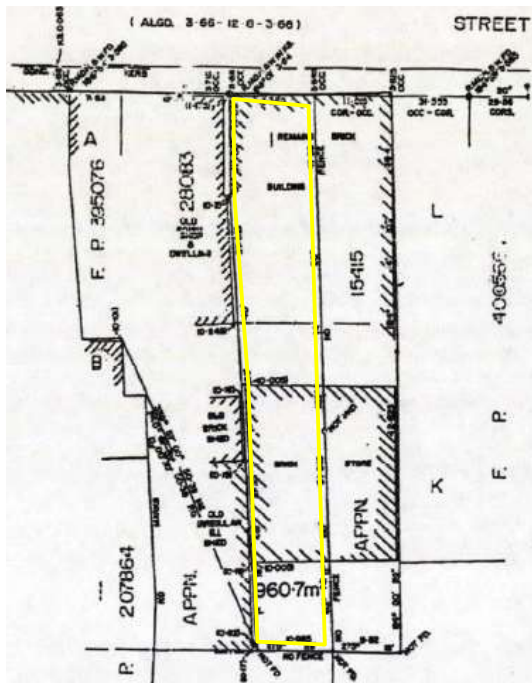


Figure 2.63 Lot 1 DP 571467 (formerly Lot 2 of Allotment 14) adjoining Lot 3 of Allotment 14, 1974. (Source: NSW Land Registry Services, DP 571467)

The executors for Barkley’s estate lodged an application in August 1939 to build six shops and four dwellings on the site of the former theatre building and adjoining land to cost £4500.¹⁴⁷ The new buildings on this site are visible in the 1943 aerial survey. Following the death of Carrington Jubilee Barkley, the property was transferred to Clementine Garnett Barkley on 30 March 1954. Simultaneously Nellie Doreen McOnie and Clementine Garnett Barkley became joint owners of Lot 3. The National Furniture Company Pty Limited purchased Lot 2 of Allotment 14 on 16 December 1954 for £31,179.9.9¹⁴⁸ and purchased the adjoining Lot 3 on 2 July 1956.¹⁴⁹ The property was sold to the Australian Mutual Provident Society on 8 April 1974. Lot 2 was converted to Torrens title in 1975 as Lot 1 DP 571467. The title diagram noted the remains of the brick building (Figure 2.63). DP 701456 was registered on 9 May 1984, comprising the former Lots 2 and 3 of Allotment 14. This forms part of the site of Parramall Shopping Centre.

2.3.11 Allotment 12 Section 16—grant to John Tingcombe

Both the 1792 and the 1804 maps of Parramatta indicate a convict hut, erected central to the frontage of an allotment, measuring 100 feet (30.48 metres) by 200 feet (60.96 metres) (Figure 2.64 and Figure 2.65). The width of George Street was originally 205 feet (62.484 metres) but is now 20 metres, so the original street frontage is now 21.242 metres behind the present frontage.

After 1804 the boundaries of the convict allotments were altered by various means to their configuration in 1823. Allotment 12 is shown as vacant land on the 1823 map of Parramatta (Figure 2.66).

Figure 2.67 comprises a plan of the land that Ann Ewer applied for and leased to Abigail Kelly. Somewhat confusingly, there was a memorial on 6 September 1831 in which Ewer assigned the leasehold premises to Kelly for £40.

All the right title claim and interest to that land ground property and estate to the said Abigail Kelly belonging as held by lease under the seal and signature of Sir Thomas Brisbane late Governor of this colony. ¹⁵⁰

According to the 1825 Muster, Ann Ewer arrived in Australia on the *Isabella* in 1822, sentenced to seven years transportation. She was 60 years of age and the wife of Edward Ewer of Parramatta, a convict. ¹⁵¹

However, according to a separate deed, Allotment 12 Section 16 was leased to Abigail Kelly for a term of 21 years on 30 June 1823. ¹⁵² The land was described as:

Lying and situated on the South Side of George Street, in the Town of Parramatta containing by admeasurement Seventy Six Rods, bounded on the West by a line 3 chains 60 links, on the South by a line 65 links to the East boundary of Allotment 15 Church Street by that Boundary 36 links, and by a line 70 links, on the East by a line to George Street 3 chains 93 links, and on the North by that street 1 chain 9 links. ¹⁵³

Abigail Kelly may have occupied the hut on the allotment. Under the name of Margaret Kelly, she was transported on the *Tellicherry* and arrived in Sydney on 15 January 1806. She had been sentenced in the City of Dublin in October 1803. She kept the name Margaret or Margret Kelly until at least 1822, for she was described in the 1822 General Muster as residing in Parramatta, having completed her sentence of seven years. Living with her was a 13-year-old child born in the colony (born in 1809). Margaret had changed her name to Abigail Kelly by 1823 when she received the lease of Allotment 12 Section 16 at Parramatta.

In the 1828 Census Abigail Kelly is described as a householder in Parramatta. She was a Roman Catholic, by then aged 50 (born 1778). Her daughter, Maria Raine (Kelly), cannot be positively identified in the census. Abigail Kelly sold the allotment in three parts to various people. One portion of the leasehold was conveyed on 5 September 1831 to her daughter, Maria Raine. ¹⁵⁴

The whole of Allotment 12 was granted on 19 June 1841 to Francis Watkins of Parramatta in trust of John Tingcombe, Henry Whitaker and Mary Barley, all of Parramatta. Court of Claims Case No. 8859 was investigated in December 1840. The land measured 76 perches on the south side of George Street. The summary indicates Ann Ewer had a claim on the allotment. ¹⁵⁵



Figure 2.64 Detail from 1792 plan showing part of one structure within Lot 12. (Source: The National Archives UK)



Figure 2.65 Detail Evan's 1804 plan showing one structure within Lot 12. (Source: The National Archives UK)

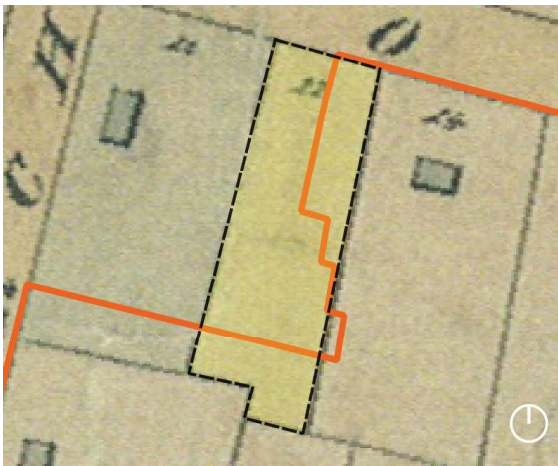


Figure 2.66 Detail from Stewart's 1823 plan showing no structures within Lot 12. (Source: SLNSW)

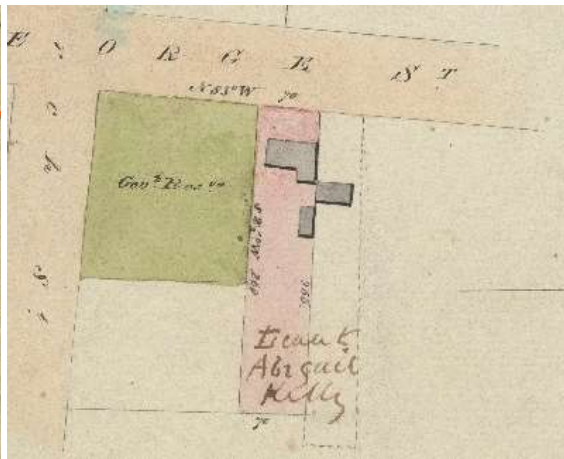


Figure 2.67 Parramatta Town Allotment lease applied for by Ann Ewer opposite Mrs Walker's Red Cow Inn, c1829. (Source: State Records & Archives, NRS 13886-1 [X751] – Volume 1-193, Sketch book 1 folio 27)

2.3.12 Allotment 12 eastern part—41–43 George Street

The 1831 map of Parramatta indicates a building on the original frontage, approximately in the same position as the previous convict hut. This building is also shown on the same site on the 1836 and 1844 maps of Parramatta (Figure 2.68 and Figure 2.69). Brownrigg's 1844 map indicates that it is of wooden construction.

Maria Raine's portion of Allotment 12 was assigned to her husband, Henry Whitaker, a chemist and druggist of Parramatta. Tingcombe transferred Maria's portion to her husband on 18 August 1845 for five shillings.¹⁵⁶ A survey plan produced for the subdivision of the land on 12 July 1845 indicates a similar building to the one depicted on the 1844 map, but with some variations (Figure 2.70).

It appears the Whitakers were living on the lot in 1831 when Henry Whitaker announced his intention of selling his business on account of ill health. But one month later he notified the public that he had moved his business farther up George Street, opposite Mrs Walker's Hotel (Red Cow Inn), and 'hopes by supplying genuine articles at moderate prices, to merit a continuance of their kind support'.¹⁵⁷ This location matches Allotment 12, which was opposite the hotel.

The Whitakers owned and occupied the property until 26 April 1853 when it was sold to Edmund Mason of Parramatta, a bookseller.¹⁵⁸ Mason erected a new building, called Stationers Hall, on the land in 1857.



Figure 2.68 Detail from Johnstone's 1836 plan showing at least one structure on within the site on Lot 12.



Figure 2.69 Detail from Brownrigg's 1844 plan showing a timber structure on Lot 12 within the site. A composite masonry and timber building is also shown on Lot 12 but outside the site boundary.

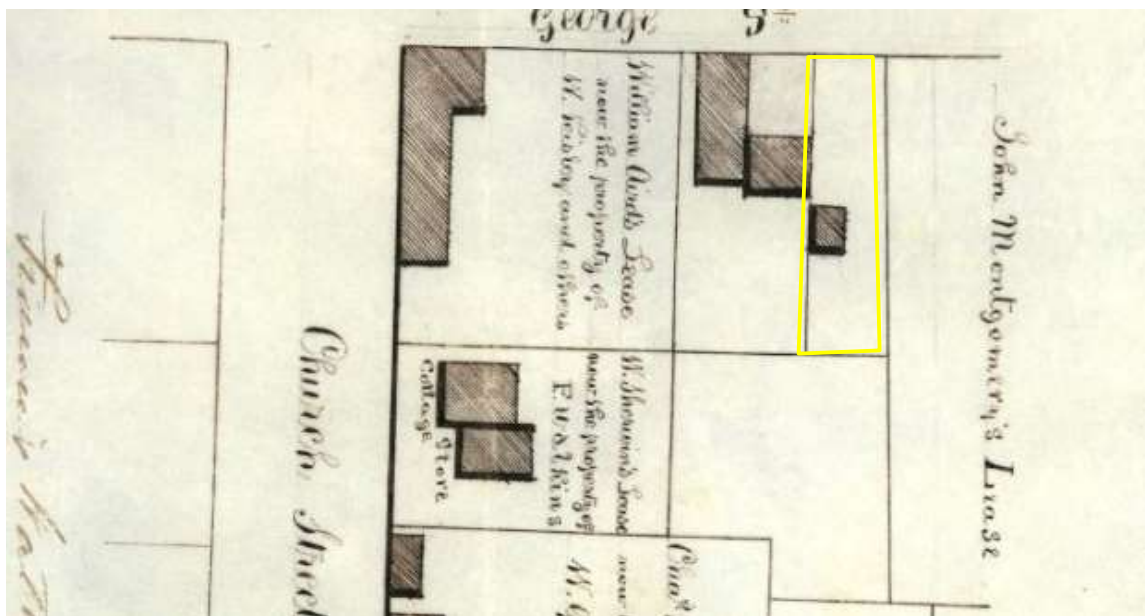


Figure 2.70 Detail from a title diagram on OST Deed Bk 28 No. 622 in July 1845, showing the partition of Allotment 12 into three parcels. Henry Whitaker's land, the eastern portion of the allotment, is outlined in yellow. (Source: NSW LRS)

William Mason was occupying Stationers Hall by 1870 and on 22 July 1871 advertised his services as a general printer at George Street, Parramatta.¹⁵⁹ On 24 February 1875, Edmund Mason leased the property to Cyrus E Fuller of George Street, Parramatta, a stationer, bookseller and printer, at a rental of £56 per annum payable quarterly, term indefinite, until death of either party.¹⁶⁰ The lease was renewed to Cyrus Fuller on 24 January 1882, and the premises were described as a 'Stationers Shop and Newspaper and Printing Office'.

Fuller's lease had ended by September 1885, as on a survey plan of neighbouring property Edmund Mason and William A Brodie were listed as the owners/occupiers of Allotment 12. Edmund's son, William Mason, took over the newspaper's production before selling it to Cyrus Fuller, his brother-in-law.

According to the 1870 rate book the eastern part of Allotment 12 contained a brick house valued at £55. In the 1882 book there were two brick houses respectively valued at £52 and £80, with the latter located closer to the eastern boundary of Allotment 12. By 1891 the two buildings are respectively described as a brick house and a brick shop valued at £34 and £26. It is possible that the single brick house of 1870 was subdivided and let as two residences, with each separately listed in the 1882 and 1891 assessments. The 1895 detail survey supports this interpretation as it shows a roughly L-shaped brick building, two wooden structures to the rear to service each house, and enclosed land allotted to each tenancy (as shown by the dotted lines on the plan). The outbuildings are constructed of wood.



Figure 2.71 Detail from an 1855 survey plan of the street alignments that only shows buildings along the street frontage. (Source: City of Parramatta Research and Collections)

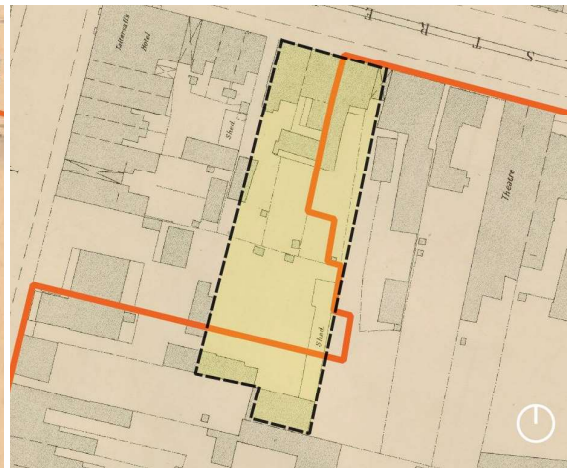


Figure 2.72 Extract from Parramatta detail survey, sheet 18, 1895. (Source: SLNSW)

Edmund Mason conveyed the land to Henry Mason and Sylvia Mason on 16 December 1896 for five shillings.¹⁶¹

On 28 March 1900 Henry and Sylvia Mason, executor and executrix of the will of Edward Mason, conveyed the property to Henry Alexander Richardson, solicitor in trust for themselves.¹⁶²

Edmund Mason had migrated to Australia in 1841. He began publication of the short-lived *Parramatta Chronicle* in 1843. After the paper failed, he became a job printer in Sydney. He had returned to Parramatta by 1857 and built the Stationers Hall on the eastern portion of Allotment 12. Mason acquired the *Parramatta Mercury*, later known as the *Cumberland Mercury*. He re-established the

Parramatta Chronicle between 1865 and 1867 and also returned to his printing and bookselling business. Mason died at Parramatta in 1899. His daughter Sarah married Cyrus Fuller, a school-teacher turned printer and general storekeeper.

Following Edward Mason's death 41 and 43 George Street, described as a 'Brick Shop and Dwelling, containing, Shop, Office, and 9 living-rooms', was advertised for auction sale on 19 August 1927.¹⁶³ The property was sold to Louis Jack of Parramatta, a furrier and dyer, for £1500.¹⁶⁴ The following year he lodged an application to convert the property to Torrens title. At this date the land (including all improvements) was valued at £900 and was in his own occupation.¹⁶⁵

Louis Jack was registered on certificate of title Vol 4229 Fol 65 on 17 December 1928 as the owner of the 14¼ perches forming part of Allotment 12 Section 17. On 22 December 1930 Jack leased 41 George Street, 'shop and premises of 2 storeys and the land enclosed with same at the rear', to McEwans Ltd. McEwans Ltd occupied the property continuously until the lease expired in 1956.

Following Louis Jack's death in 1954, 41–43 George Street was advertised for auction sale on Tuesday 20 May 1958 under the instructions from the Perpetual Trustee Company (Limited) and Maxwell Louis Jack, esq. and Edward Jack, esq., executors of Louis Jack's estate. The property did not apparently change hands at this date as the next owner registered for the property in September 1959 was June Millinery (Properties) Pty Ltd.

On 18 September 1959 the property was conveyed to June Millinery (Properties) Pty Limited. It changed hands on 18 October 1972 to Penn & Gerard Pty Limited. Two years later it was conveyed to the Australian Mutual Provident Society on 8 April 1974.

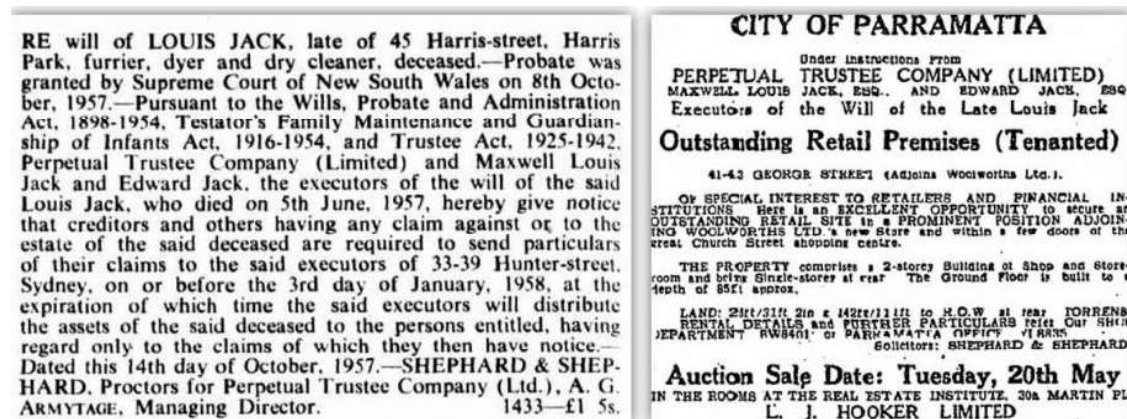


Figure 2.73 On left: Probate notice for estate of the late Louis Jack. On right: Auction sale notice. (Source: *Government Gazette of New South Wales*, 1 November 1957, p 3488; *Sydney Morning Herald*, 10 May 1958, p 38)

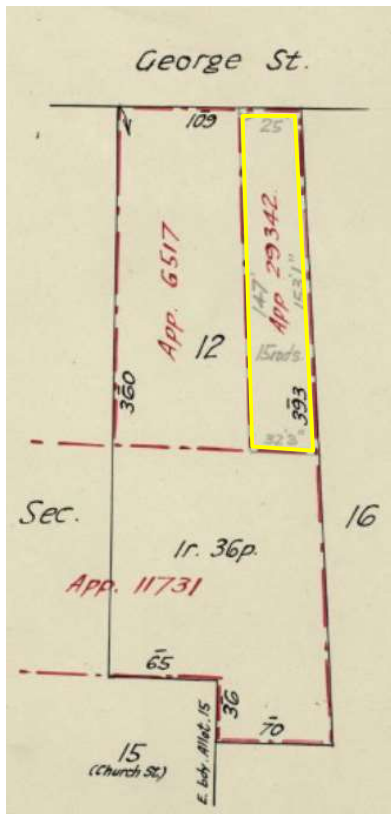


Figure 2.74 Search sketch for Primary Application 29342, comprising the eastern portion of Allotment 12, being 41 and 43 George Street, 1928. (Source: NSW Land Registry Services)

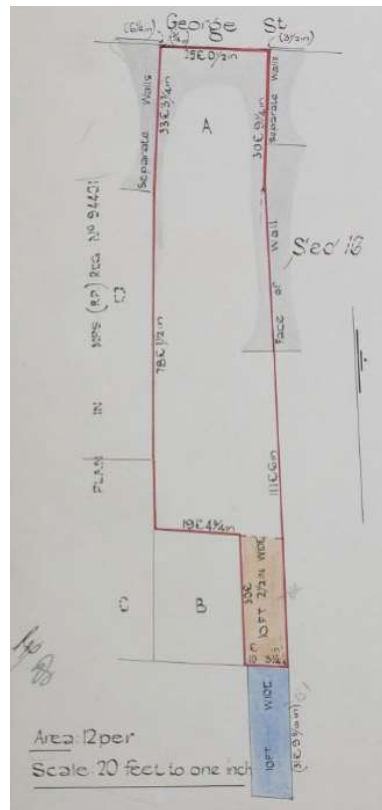


Figure 2.75 Title diagram, Lot A, comprising the eastern part of Allotment 12, 1956. (Source: NSW Land Registry Services, CT Vol 7186 Fol 88)

Section 2

2.3.13 Allotment 10 Section 16—grant to John Tingcombe

No. 238 Church Street is located on the southern portion of Allotment 10 and part of Allotment 12 of Section 16. It was granted to John Tingcombe in separate grants dated 8 April 1840 and 30 June 1841.

Allotment 10 of Section 16 of the Town of Parramatta was leased to William Sherwin for 21 years by Governor Brisbane on 30 June 1823. The 1823 map suggests there was a building on the allotment. However, another plan of Parramatta from possibly about the same date or earlier, shows no development on the site and indeed no Allotment 10.

In any case Sherwin requested the land be granted to Tingcombe. The grant deed indicates Tingcombe had expended over £1000 erecting buildings on the allotment in accordance with the lease conditions.¹⁶⁶ Tingcombe appears to have occupied Allotment 10 as early as December 1830 as he advertised that he had opened a warehouse in Church Street, formerly occupied by Mr Walker.

Tingcombe announced in June 1834 that he was taking Francis Watkins as his partner and the business would be renamed Tingcombe & Watkins.¹⁶⁷

Coinciding with the grant of Allotment 12 in 1841, Tingcombe conveyed a parcel of land, presumably part or all of this second grant, to several individuals including Francis Netterville Watkins, Mary

Barley, Henry Whittaker, Maria Whittaker, John Armistead and RH Pearson. This group then conveyed a portion of Allotment 12 to Tingcombe's business partner, Francis Netterville Watkins. Tingcombe mortgaged his land in November 1841 to Hastings Elwin, Alexander Macleay, Thomas Barker, Richard Jones and John Lamb to secure £1500.¹⁶⁸ This land then appears to have been mortgaged to and reconveyed from these gentlemen in 1845.

From subsequent evidence, including an advertisement in August 1843, the stores of Tingcombe and Watkins was located in Church Street adjoining land at the corner of Church and George Streets advertised for auction sale subdivided into four lots.¹⁶⁹

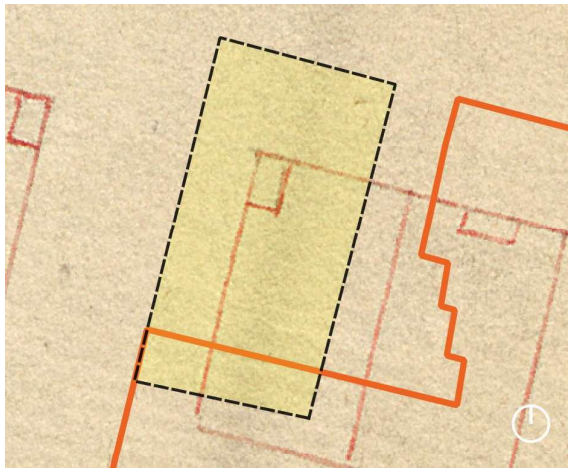


Figure 2.76 Detail from 1792 plan showing a single structure in the northwest corner of Lot 10 outside the site boundary. (Source: The National Archives UK)

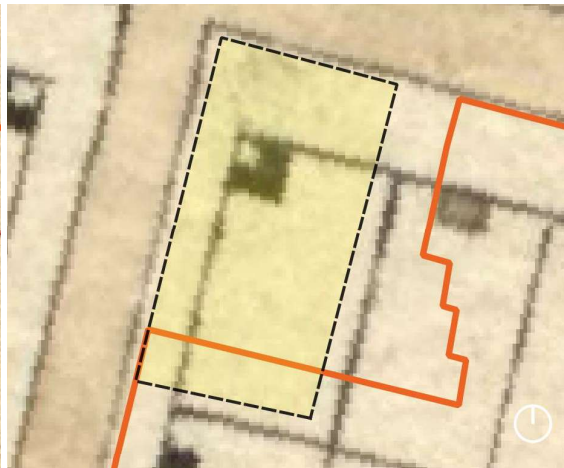


Figure 2.77 Detail from Evan's 1804 plan showing a single structure in the northwest corner of Lot 10 outside the site boundary. (Source: The National Archives UK)

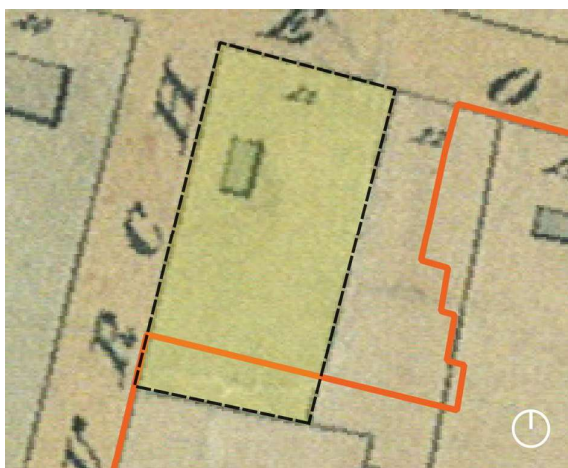


Figure 2.78 Detail from Stewart's 1823 plan showing a single structure in the northwest corner of Lot 10 outside the site boundary. (Source: SLNSW)



Figure 2.79 Detail from Brownrigg's 1844 plan showing a single masonry structure within the site, part of the site occupied by Tingcombe and Watkins.



Figure 2.80 Subdivision plan showing the corner of Church and George Streets, 1840s. No cottage is shown on Allotment 10. (Source: State Library of NSW)

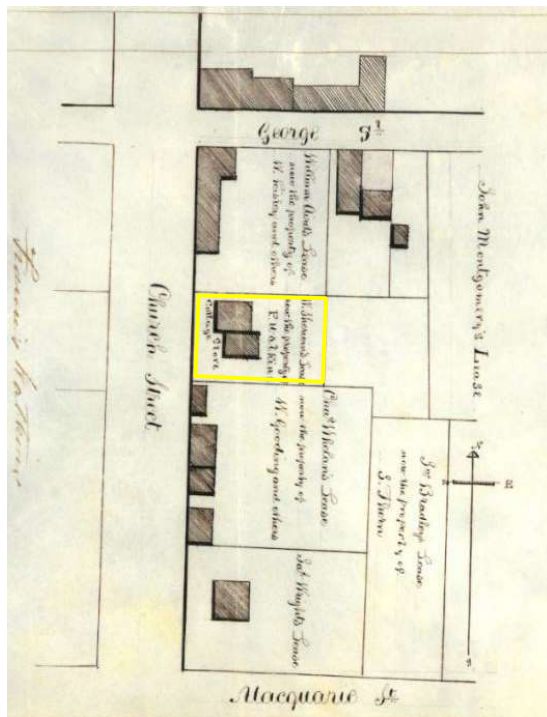


Figure 2.81 Block plan accompanying OST Deed Bk 28 No. 622 in July 1845 showing the two conjoined buildings on Allotment 10, comprising a cottage and store. This was the allotment leased in 1823 to William Sherwin, now in the occupation of FN Watkins. (Source: NSW LRS, with GML overlay)

According to Brownrigg's 1844 plan (Figure 2.79), Allotment 10 contains two masonry buildings with one structure set back from the Church Street frontage. Annotations on this plan indicate Sherwin was the lessee and Tingcombe and Watkins the grantee(s).

By March 1845 Tingcombe and Watkins had expanded their business with stores at Sydney, Parramatta and Bathurst and mutually dissolved the partnership. At the same date (February 1845) Tingcombe agreed to sell Watkins his share and interest in the live and dead stock, stock in trade goods, wares, merchandise, debts and effects of the later co-partnership for the sum of six thousand pounds and also to convey to Watkins Allotment 10, comprising 1 rood 1 perch of land.¹⁷⁰ Tingcombe also agreed with Watkins for the transfer of part of Allotment 12 abutting the eastern boundary of Allotment 10.

In July 1845 Watkins and Tingcombe, with the agreement of Mary Barley and Maria Whittaker, formalised the transfer of Allotment 10 to Watkins in pursuit of their contract in February 1845 and a share of Allotment 12. At the same time John Tingcombe retained 37 perches, Mary Barley 27 perches and Maria Whittaker 15 perches, forming part of Lot 12. Two buildings are also shown on the block plan accompanying this release and are described as a cottage and a store (Figure 2.81). The 1845 block plan also confirms the allotment was originally leased to William Sherwin.

Francis Netterville Watkins was born in October 1802 and was baptised at Bristol in Gloucestershire, England, on 2 August 1821. He arrived in Australia in 1828. He may be the Francis Watkins who, with Mr Hartley of Minchinbury, was robbed at gunpoint while travelling by coach to Parramatta on 19 December 1831.¹⁷¹ In his evidence before the court, Watkins stated he was a clerk to Mr Hindson. Francis Watkins married Hannah E Thomson in 1837. The following year he was one of five men who were appointed as trustees to receive deposits at Parramatta for 'Savings Bank in New South Wales'.¹⁷²

Hastings Elwin, Alexander Macleay, Thomas Barker, Richard Jones and John Lamb assigned Tingcombe's mortgage to the Australian Trust Company in 1847. In July 1853, Francis Watkins repaid the mortgage and the Australian Trust Company reconveyed the property to him.¹⁷³

Francis Watkins continued to operate the Parramatta store until his death in November 1860. He was survived by his widow, Hannah Eliza Watkins. The death and funeral notice state his residence was in Church Street, Parramatta.¹⁷⁴ This indicates that he lived in the cottage alongside the store in Church Street located on Allotment 10.

Following the death of Francis Watkins, the residence and cottage were let to local businessman Hugh Taylor, retail and wholesale butcher. He took over the premises sometime in the 1860s.

The property, then occupied by Hugh Taylor, was advertised for auction sale on 26 April 1870. It was described as comprising a:

*handsome family cottage residence, adjoining a 2-storied brick-built store or warehouse, originally used by the merchant who erected it for his large wholesale and retail business; subsequently by the Commercial Bank, and since then by the present tenant. The out-offices are also extensive, comprising brick-built stables, coach-house, with hayloft over; also, a brick-built store, large kitchen and servant's room, with minor conveniences; a spacious yard, good supply of water.*¹⁷⁵

Hannah Eliza Watkins sold the property at auction to Hugh Taylor for the sum of £1200.¹⁷⁶ Soon after, Beaufoy Merlin of the American and Australasian Photographic Company visited Parramatta and took

two photographs, one depicting Hugh Taylor in front of his shop, and the other with his wife and son on the front verandah of the residence.

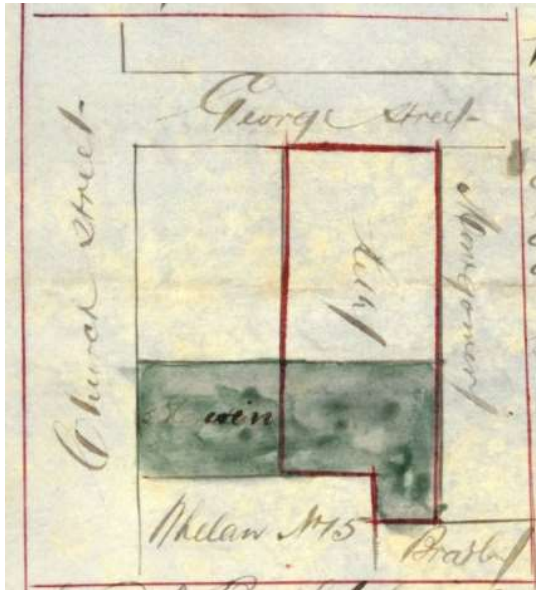


Figure 2.82 Plan of Taylor's land, shown on OST Deed Bk 298 No. 998, 1870. (Source: NSW LRS)



Figure 2.83 Hugh Taylor in front of his butcher shop in Church Street, photographed by the American and Australasian Photographic Company, about July 1870. (Source: Caroline Simpson Library & Reserve Collection, Sydney Living Museums, Record Number 37808)



Figure 2.84 Hugh Taylor with his family on the front verandah of his house in Church Street, photographed by the American and Australasian Photographic Company, about July 1870. (Source: Caroline Simpson Library & Reserve Collection, Sydney Living Museums, Record Number 35533)

Hugh Taylor was born on 19 March 1823 at Parramatta. He was educated by Daniel Thurston and at The King's School before taking up the trade of a butcher. He also became an agent for many of the Sydney newspapers and wrote for the *Sydney Morning Herald*. Hugh married Frances Eliza Conner on 29 December 1846 at St Patrick's Church, Parramatta.

In the 1860s Hugh entered the political arena, winning a seat on the Parramatta Borough Council in 1865 and serving as an alderman until 1897. He was mayor from 1871 to 1874. He also served as the State Member for Parramatta on and off (mostly on) between 1872 and June 1894. During this period

he continued to operate his retail and wholesale butchery business in Church Street. He died at his Church Street residence on 13 December 1897.

The 1894 detail survey indicates the location and footprint of the house, shops and outbuildings on Allotment 10; most structures were built of brick.



Figure 2.85 Extract from Parramatta detail survey, sheet 10, Detail Survey Branch, 1895. The yellow-shaded portion is in the site boundary. (Source: Sydney Water Archives, PWDS1544-S1223, with GML overlay)



Figure 2.86 Extract from Parramatta detail survey, sheet 18, printed in the Lithographic Branch, Department of Lands, 1895. The yellow-shaded portion is in the site boundary. (Source: SLNSW, FL3741226, with GML overlay)

Prior to his death, Hugh Taylor had mortgaged the property to the Perpetual Trustee Company to raise the sum of £5000.¹⁷⁷ This loan was not paid back at the time of his death so in 1900 Hugh Taylor's freehold properties in Church Street were advertised for auction sale by the mortgagees on 29 June. The *Cumberland Argus and Fruitgrowers Advocate* reported that no bids were received for the property opposite the post office but £1500 was received for the three shops to the north of Mr Simpson's dental surgery, which included the medical institute's dispensary.



Figure 2.87 Mortgagee sale of freehold properties of the late Hugh Taylor, June 1900. (Source: *Sydney Morning Herald*, 22 June 1900, p 17)

Thomas Waddell, Frederick Charles Macdonald and George Macdonald contracted with the Perpetual Trustee Company to sell them of the property in Church Street (for £2220):

*having a frontage of about 94 ft to Church Street with a depth of about 209 feet, the dimensions being a little more or less on which are erected shop and dwelling formerly used by the late Hugh Taylor as a butchering establishment.*¹⁷⁸

Following the sale, Messrs Waddell and Frederick and George Macdonald lodged an application to convert the property to Torrens title.¹⁷⁹ The land, measuring 1 rood 37 ¾ perches, was registered as a tenancy in common on Certificates of Title Vol 1350 Fols 221, 222 and 223. The block plan of this land is shown at Figure 2.88. It indicates some of the outbuildings on the southeastern boundary, comprising brick stables and brick outbuildings.

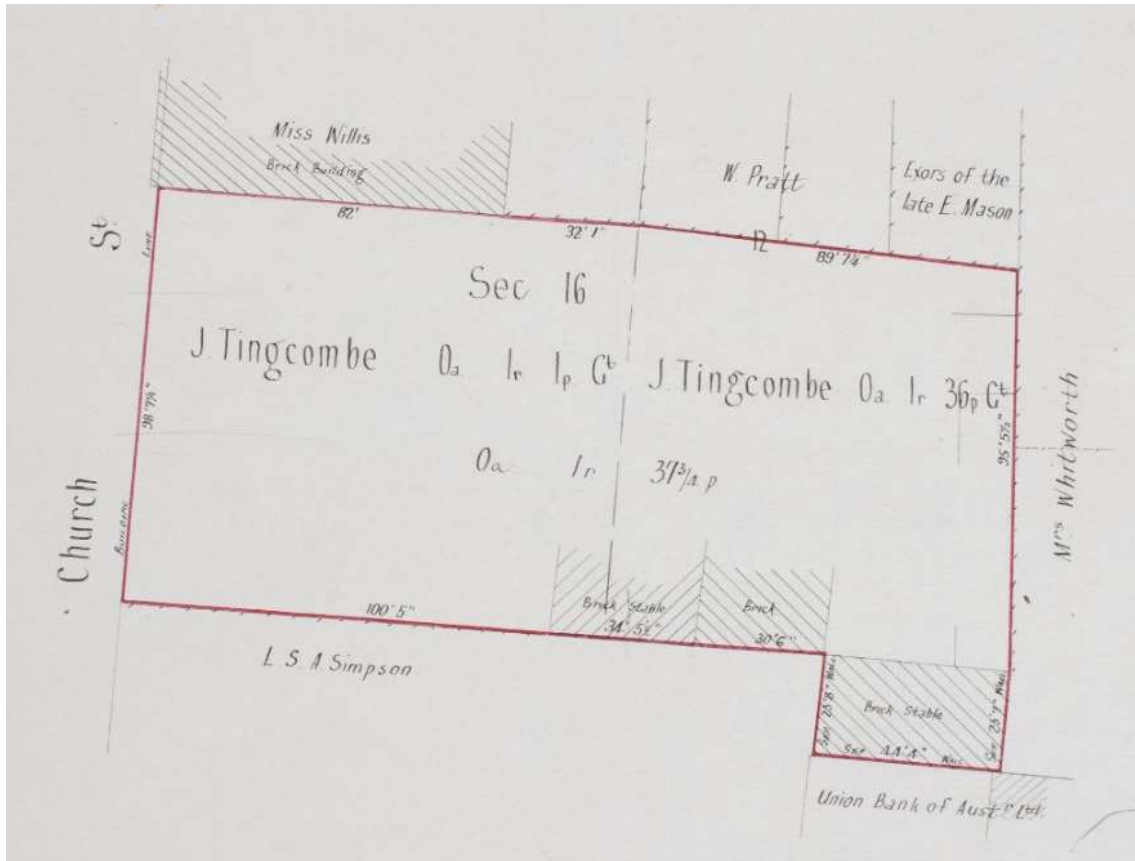


Figure 2.88 Plan of Tingcombe’s lot in 1900 showing brick stables, outbuildings and wooden sheds in the southeast part of the property on Certificate of Title Vol 1350 Fol 221–223. The portion of the property within the site is shaded yellow. (Source: NSW LRS)

The *Cumberland Argus and Fruitgrowers Advocate* reported in February 1901 that construction of new shops was soon to commence on the site. JW Hill was the architect. The newspaper also reported that ‘Messrs Rawlinson Bros will occupy two of the new shops, the premises now used by them having been found too small for their business’.¹⁸⁰

The land was transferred to a new CT in May 1901 and the block plan again shows the location of the outbuildings in the eastern and southern parts of the land. Following construction of the group of shops, the three owners subdivided the land into three allotments, with each gaining ownership of a separate portion. Thomas Waddell became the owner of the southernmost lot, comprising 24 ½ perches subject to a right of way over the property.¹⁸¹

2.3.14 Subdivision of southernmost portion of Allotment 10 and Part Allotment 16—238 Church Street

Waddell’s parcel was registered on a new certificate of title in July. The block plan indicates the new shops were constructed on the Church Street alignment of the three allotments, with Waddell retaining on his portion one of the brick stables buildings in the southeastern corner of his land. In June 1909 Thomas Waddell conveyed the allotment to George Washington Waddell.¹⁸²

Thomas Waddell was an important figure in local and state history. For two months in 1904, he served as the premier of NSW. He was also a pastoralist, businessman and prolific writer on public finance, as well as a member of the NSW Legislative Assembly between 1887 and 1917, and a member of the NSW Legislative Council between 1917 and 1934. He also served terms as colonial secretary and colonial treasurer.¹⁸³

The new shops in Church Street were either wholly or partly occupied by Rawlinson Bros grocers as shown in the photographic spread from the *Jubilee History of Parramatta* published in 1911.¹⁸⁴ George Rawlinson and John Percy Rawlinson purchased Waddell's (and the Macdonalds') allotments in January 1912 as tenants in common.¹⁸⁵

At the end of 1916 the firm of Rawlinson Bros closed after 23 years in business¹⁸⁶ and the business was taken over by T Ryland and Co.¹⁸⁷

Consequently the Rawlinsons conveyed a lease of the property in January 1917 to Thomas McDowall Hyland, who had taken over the grocery business. The Rawlinsons sold the property to Herbert George Griffin of Granville, a master butcher,¹⁸⁸ in August 1918. T Hyland & Co advertised the business at 196 Church Street as 'importers and retailers of the World's Best Groceries' in 1917.

From 1924 the property was leased to a series of tenants including:

- March 1924—Samuel Dunlop Richardson (wine and spirit merchant)
- later in 1924—George Silcock (wine and spirit merchant), 196A Church Street
- 1932—Lewis Segal (clothing manufacturer)
- 1933—George Charles Pearson (wine and spirit merchant), 196A George Street
- 1933, 1940, 1944, 1947 and 1950—Penfold's Wines (wine and spirit merchant), 196A Church Street (later renumbered 238 Church Street)
- 1937—Selfridge's (Australasia) Ltd.

Griffin owned the property until November 1954 when it was sold to GJ Coles & Company Ltd.¹⁸⁹

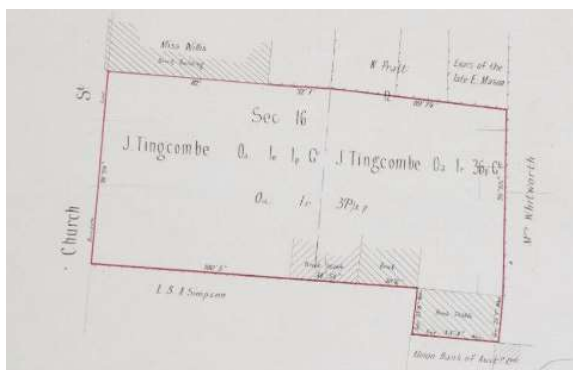


Figure 2.89 Vol 1350 Fols 221/22/223, April 1901. (Source: NSW Land Registry Services)

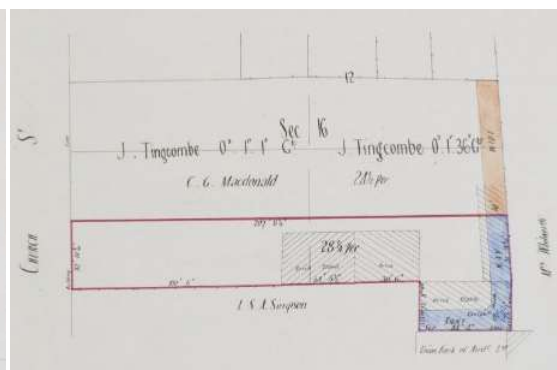


Figure 2.90 Vol 1354 Fol 178, May 1901. (Source: NSW Land Registry Services)

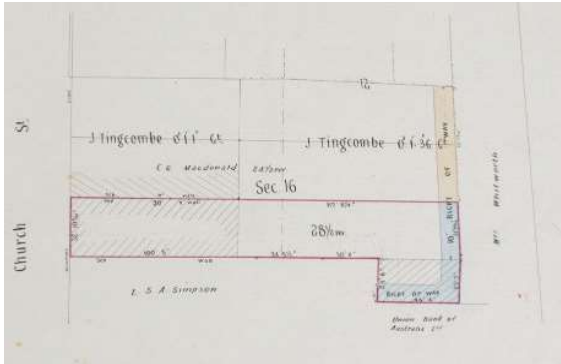


Figure 2.91 Vol 1362 Fol 159, July 1901. (Source: NSW Land Registry Services)

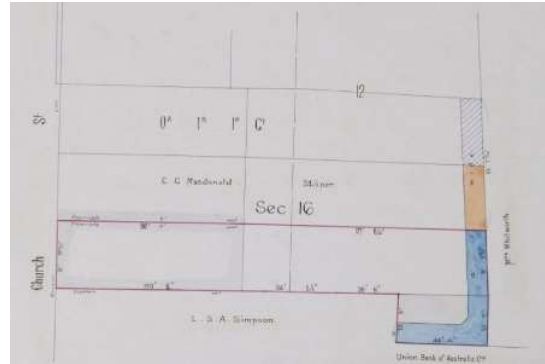


Figure 2.92 Vol 2240 Fols 37/38, 1912. (Source: NSW Land Registry Services)



Figure 2.93 Detail from photograph, looking north along Church Street, 1898. Hugh Taylor's shop and residence are partly visible (outlined in yellow). (Source: State Library of NSW, Standish G Goodin Presentation Album of Parramatta views, a62207h)



Figure 2.94 Church Street, Parramatta, by Charles Kerry & Co, c1901. (Source: Powerhouse Museum, 125327, with GML overlay)



Figure 2.95 Rawlinson Bros store, Church Street, 1901. (Source: *Cumberland Argus and Fruitgrowers Advocate*, 19 December 1901, p 25)



Figure 2.96 Detail from 1907 view of Church Street Parramatta. The Rawlinson Bros sign is shown on the group of shops. (Source: National Museum of Australia)

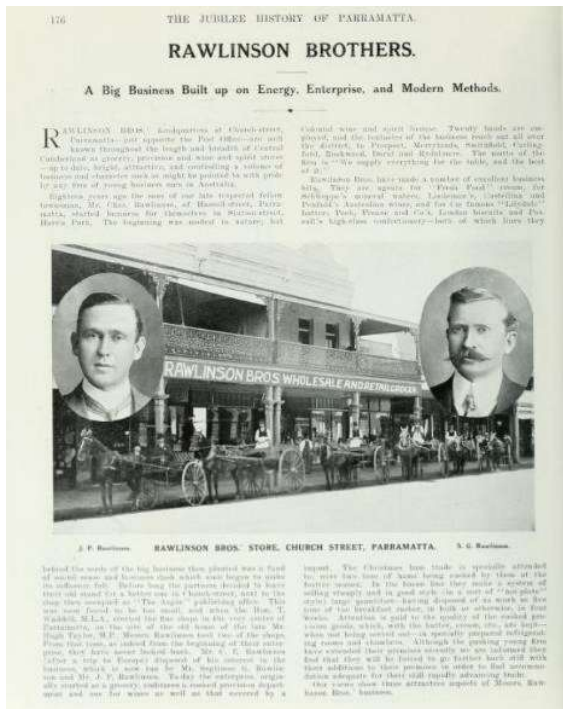


Figure 2.97 Rawlinson Brothers store in Church Street, Parramatta. (Source: *Jubilee History of Parramatta*, 1911, pp 176–177)



GJ Coles & Co Pty Ltd owned 238 Church Street until 1961 when it sold the property to Eric Anderson Radio Television Pty Limited. The site at this date measured 11¼ perches. An advertisement in October 1968 names the business at 238 Church Street as Eric Anderson’s Homemakers.¹⁹⁰

The building was extended to the rear boundary sometime after 1954.

In 1972, 238 Church Street was conveyed to the Hospitals Contribution Fund (HCF).¹⁹¹ This name appears on the awning in the photograph below.

Polken Pty Limited purchased Lot 2 DP 591454 (238 Church Street) in 1980. The property was leased the following year to Gordon & Gotch (Australasia) Limited from April 1981. Christopher Economos and Voilà Economos leased 238 Church Street from April 1986.¹⁹²



Figure 2.98 Extract from detail survey sheet 2711 Parramatta, 1954, showing footprint of 236 and 238 Church Street. (Source: Sydney Water Archives, DS 2711)

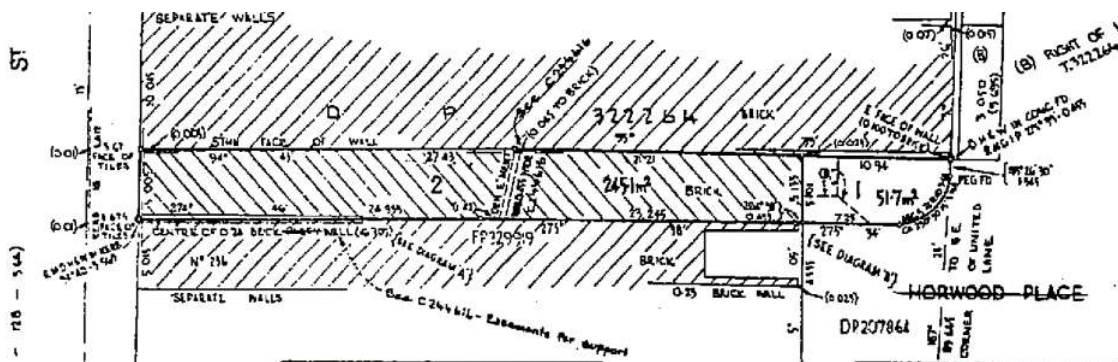


Figure 2.99 Outline of Lot 2 in DP 591454, comprising 238 Church Street, 1978. (Source: NSW Land Registry Services, CT Vol 13571 No 94)



Figure 2.100 Shoppers thronging the pavements, showing 236 and 238 Church Street and adjoining shops, about 1977. (Source: City of Parramatta Collections and Research)

2.3.15 Subdivision of southernmost portion of Allotment 10 and Part Allotment 12—236 Church Street

In March 1934 Herbert George Griffin sold 9½ perches of his allotment to William John Irwin, a prominent businessman and hardware merchant.¹⁹³ He was active in town life and served on the City of Parramatta Council as an alderman. He was the mayor when Parramatta was declared a city in 1938.

Irwin promptly granted an easement, comprising 9½ inches, over his land to Herbert Griffin in respect to the southern half of the brick wall of the property to the north of 236 Church Street. He also raised a mortgage with the Commercial Bank of Australia Limited, which was discharged later in the same year. Irwin leased the property to Cash's Great Western Butchery Limited.¹⁹⁴

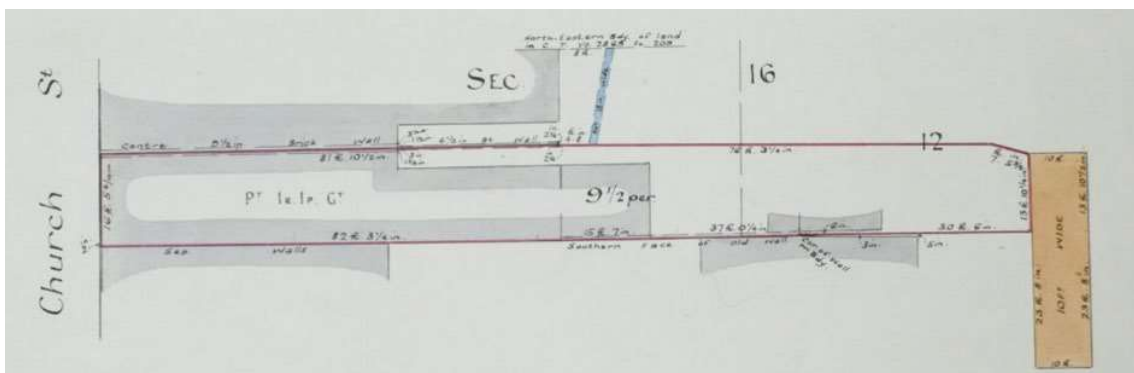


Figure 2.101 Block plan of Irwin's allotment. (Source: NSW Land Registry Services, Vol 4642 Fol 217)

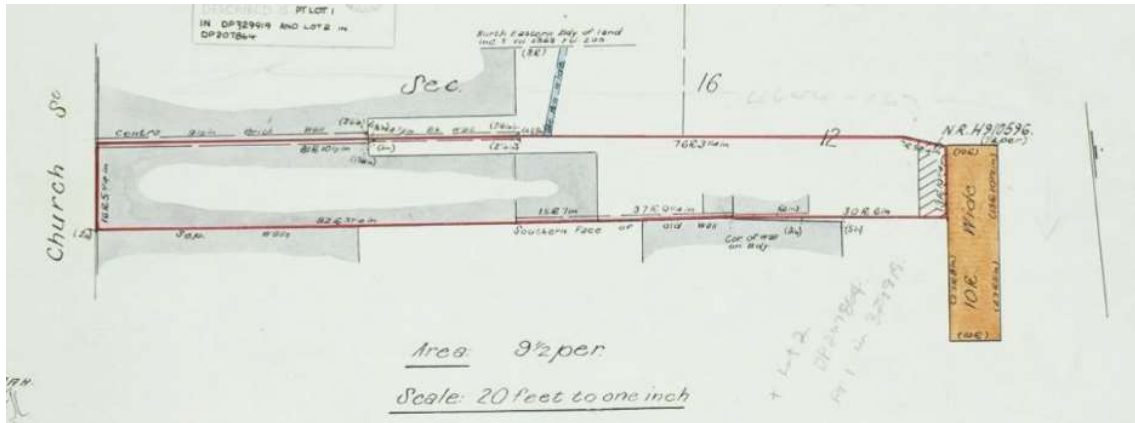


Figure 2.102 Block plan of Boulton's allotment. (Source: NSW Land Registry Services, Vol 6991 Fol 178 1955)

Irwin sold the property in August 1934 to George Warren Boulton and George Cyrus Boulton, printers, of Sydney. The following month they raised a mortgage on the property with the Commercial Bank of Australia Limited. George Warren Boulton became sole owner in August 1937; he discharged the mortgage in 1945. The following year he conveyed the property to George Cyrus Boulton. Boulton mortgaged the property to the Commercial Bank of Australia, which was discharged in 1949. He promptly sold the property to Robert James Carson of Strathfield, a master butcher, in late 1949, who simultaneously mortgaged it to the Commercial Bank of Australia.¹⁹⁵

Carson discharged the mortgage in early 1953 and two years later conveyed the site to a former lessee, Cash's Great Western Butchery Pty Ltd. In 1964 the Council of the City of Parramatta resumed a slice of land at the rear of the property, being a little over 7 feet deep, to facilitate widening of the laneway.¹⁹⁶

Cash's Great Western Butchery Pty Ltd sold the property in 1972 to McNamara Permanent Investment Pty Ltd. The following year that firm sold the parcel to G & B Investments Pty Ltd. From 1976 to 1984 the property was leased to Aston Holdings Pty Ltd, and thereafter from 1987 to 1990 it was leased by Peter and Mario Valensise.¹⁹⁷

Between 1990 and 1994 the premises were leased to Legeme Pty Limited, whilst from 1992 to 1995 Showfame Pty Limited also leased at least part of the property. In September 2001, S. R. & C. Konstantopoulos purchased the property from G & B Investments Pty Ltd.¹⁹⁸

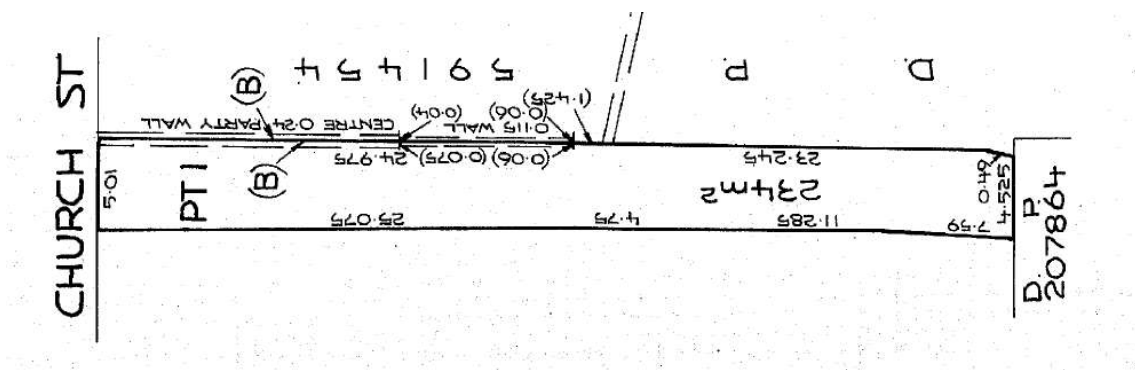


Figure 2.103 Block plan of Lot 1 DP 329919 (136 Church Street), 1980. (Source: NSW Land Registry Services, Vol 14062 Fol 229)

2.3.16 Allotment 15A Section 16—grant to James Whalan

Casey & Lowe researched the history of this allotment in 2017 while preparing the archaeological assessment for 48 Macquarie & 220–230 Church Streets, Parramatta. The site history does not, however, detail the development of that portion of the study site comprising 232 Church Street (Lot 1 DP 651992) after 1844. The following history of the allotment to 1844 is based upon that report. Verbatim text is in italics.

Between c1791 and 1792 the line of Macquarie Street was extended along the frontage of the study area. In 1791 the study area was described as 'ground in cultivation' which extend south and eastwards. The building on the 1792 and 1804 plans would have been a convict hut. It is likely that the building shown on the 1823 plan was the original convict hut present in 1792 and 1804.

The 1823 Return of Allotments listed Lot 15 as measuring 93" perches held by Charles Whalan. The 1823 map showed a building on the site.

Sergeant Charles Whalan was a long-time resident of the colony having arrived on the Albemarle in 1791. He had served with the 102nd regiment (New South Wales Corps aka 'Rum Corps'), 73rd and 46th Regiments. He had fulfilled a significant role as the Sergeant commanding the Governor's Bodyguard. Sergeant Whalan's son, also named Charles, had become a beloved playmate of Lachlan and Elizabeth Macquarie's son, Lachlan, born in the colony. Despite young Charles Whalan's humble origins, he accompanied the Macquarie family on a number of their tours. As Sergeant Charles Whalan and his son Charlie rowed away from the ship taking the Macquarie family back to England, young Lachlan was in tears at leaving his friend, Charlie Whalan. Sergeant Charles Whalan successfully accumulated land over the years.

The 1828 census showed Charles Whalan, aged 65, was a pensioner living at Prospect with his wife Elizabeth, aged 50. Both had arrived as convicts. Living with them were their children Campbell, aged 8 and John aged 6. Charles held a total of 750 acres, of which some acres were cleared and 60 cultivated, plus 2 horses and 2 cattle. Johnstone's 1836 copy of Richards' map showed a building on Allotment 15A.

Charles Whalan mortgaged the Parramatta lease measuring 93" rods to Charles Abraham Wilson, on 13 August 1838 for £350 for one year at 15%. Charles Whalan devised his property to his wife Elizabeth as a life estate with the remainder to his son Charles Whalan. Charles Whalan [senior] died on 17 April 1839. On 12 May 1840, Elizabeth Whalan, widow of Charles Whalan [senior] sold her life estate to her son James for £100.

A Memorial by James Whalan dated 28 March 1821, stated that he was then 16 years old and born in the colony and was the son of Sergeant Charles Whalan. On 15 August 1840, Charles Whalan [junior] sold his title to the lands inherited from his father to his brother James Whalan for £550, along with the life estate of Elizabeth Whalan. Elizabeth Whalan had previously transferred her right to her son James.

On the basis of the evidence presented to it, the Court of Claims report of 2 February 1843 recommended that a grant be made to James Whalan of Fish River on payment of 21 years quit rent for Allotment 15, Section 16, Town of Parramatta.

James Whalan, Fish River was granted 2 roods 13" perches on 28 March 1843. The land was bounded on the north 2 chains 52 links, on the east 2 chains 31 links and on the south by 2 chains 52 links and on the west by Church Street 2 chains 33 links. It had been leased to Charles Whalan on 30

June 1823 and was granted to James Whalan on the basis of Case 1155 and for the quit rent of £49/1/9.

James Whalan instructed James Byrne to sell the property by auction on 31 August 1843. It was advertised as follows:

The whole of that valuable property in Church-street, Parramatta, adjoining the Stores of Messrs Tingcombe and Watkins, and in then occupancy of Mr Urquhart, in four lots, having each a frontage in Church-street varying from thirty-six to forty-one feet, and running the whole depth of one hundred and sixty-three feet. 199

For unknown reasons the allotments did not sell at that date and the property was readvertised for auction sale on 20 January 1844 (Figure 2.107). The property was then in the occupation of Mr Urquhart, who was a coach manufacturer.²⁰⁰ The *Sydney Monitor* reported in 1833 that Urquhart had moved his coach manufactory to Church Street in May 1833,²⁰¹ but the newspaper had to publish a retraction soon after, as it was Mr Urquhart's brother (James Urquhart) who had taken the property in Church Street. He was a coachbuilder as well. *Though there does not appear to be a surviving plan of the subdivision, a sketch of the lots was included on some of the deeds when the land was conveyed* (Figure 2.108).



Figure 2.104 Detail from 1792 plan showing one structure within Lot 15a. (Source: The National Archives UK)

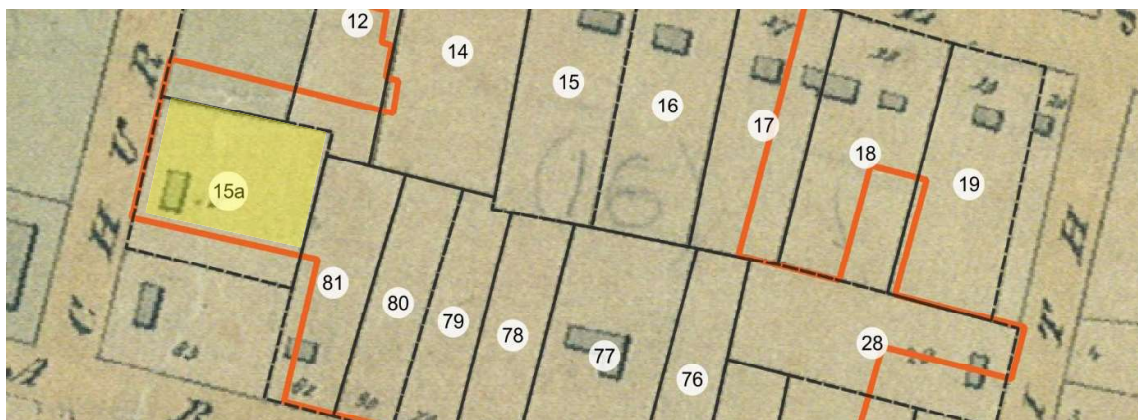


Figure 2.105 Detail from Stewart's 1823 plan showing one structure within Lot 15a. (Source: SLNSW)



Figure 2.106 Detail from Brownrigg's 1844 plan showing two masonry and a timber structure within Lot 15a. (Source: SLNSW)

POSITIVE SALE.
JAMES BYRNES will sell by public auction, upon the Premises, in Church-street, Parramatta, ON SATURDAY, THE 20TH INSTANT, at Twelve o'clock precisely, All that piece or parcel of land known as Whalan's Allotment, at present occupied by Mr. Urquhart, situate on the east side of Church-street, and adjoining the premises of Messrs. Tingcombe and Watkins.
 In order to suit purchasers the whole will be divided into four lots of the following dimensions:—
 Lot 1.—22 perches, bounded by a line in Church-street, 36 feet, with a depth of 163 feet 8 inches, adjoining the stores of Tingcombe and Watkins. There is a neat weather-boarded cottage on this lot, rented at 10s. per week.
 Lot 2.—22 perches, and same dimensions as Lot 1.
 Lot 3.—29 perches, bounded by a line in Church-street, 41 feet, depth as above, with a good brick cottage (the residence of Mr. Urquhart) and detached kitchen.
 Lot 4.—29 perches, same dimensions as lot 3, with a good well of water.
 Title—A Grant from the Crown.
 Terms—One-half at the fall of the hammer,—the residue at three months; security upon the premises if required.
 N.B.—A plan lies at the Office of the Auctioneer.
 ALSO,
 At the same time and place will be submitted to public competition a FARM situated at Seven Hills, containing about 27 acres, being part of Mr. Robert Best's estate, bounded on one side by the Seven-hills Road, 27½ chains; by another portion of R. Best's land on the east, 19 chains; on the north by M'Dougall's grant; and on the north west by Pierce's grant.
 Title—A Grant from the Crown.
 TERMS.—One-half on the fall of the hammer,—the residue at three months; security on the property if required.

Figure 2.107 Advertisement for the auction sale of Whalan's land grant, subdivided in four lots. (Source: Parramatta Chronicle, 13 January 1844, p 1)

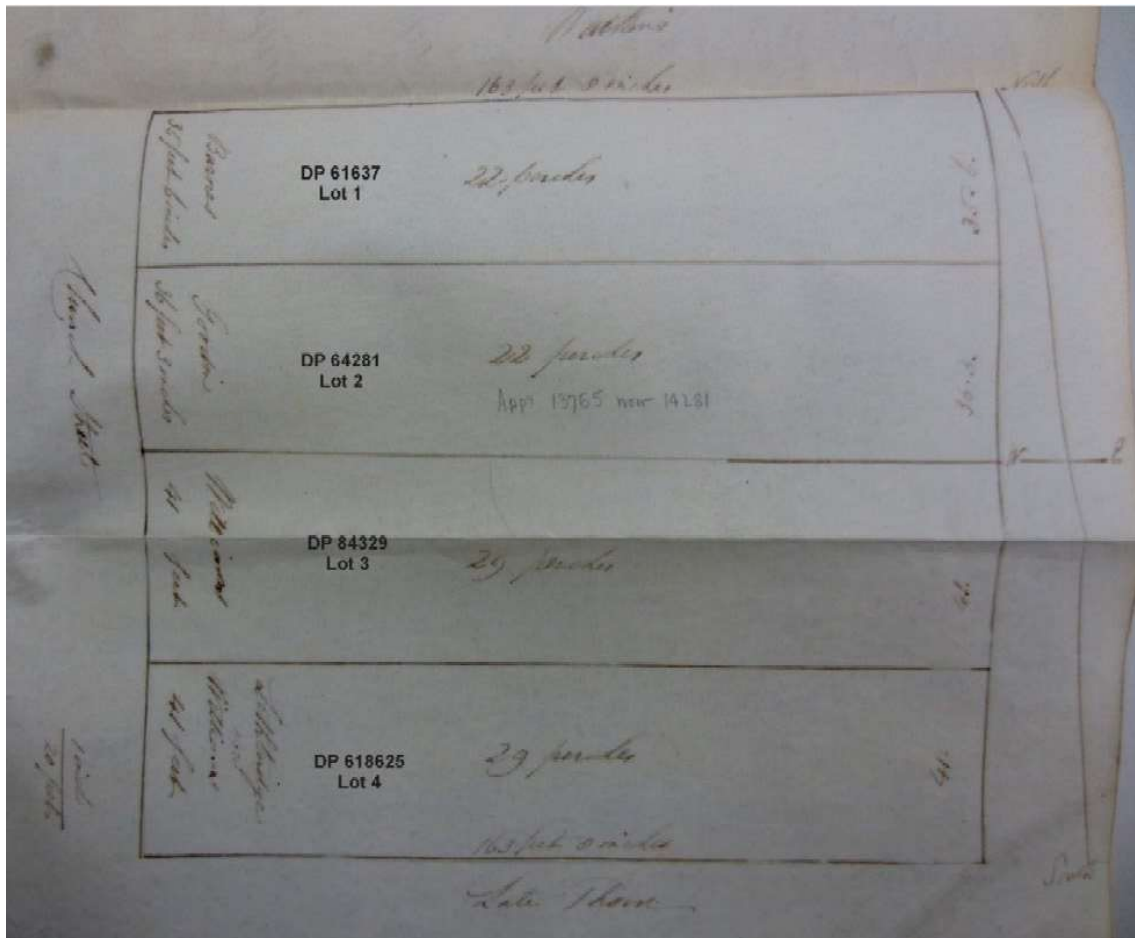


Figure 2.108 Sketch of subdivision of Whalan’s Allotment 15A into four lots. (Source: NSW Land Registry Services, OST Deed Bk 6 No 754)

Further development of the four lots subdivided from Whalan’s Allotment 15A are detailed below, with each parcel identified by its cadastral plan number.

2.3.17 DP 61637—Lot 1—232 Church Street

Lot 1 of Whalan’s allotment—the northernmost of the four lots—was described as comprising a weatherboard cottage let at 10 shillings per week. On 13 April 1844, James Whalan and his wife Lydia sold Lot 1 to Joseph Barnes of Parramatta, a landholder, for £160.²⁰² The lot measured 22 perches in area.

Joseph Barnes died in November 1891, aged 53 years, and was survived by his widow and five children.²⁰³ His widow instructed John Taylor and Co to sell the property by auction on 29 March 1900. The property was described as follows:

*A most valuable Block of Land, situate [sic] in the very business centre of Parramatta, opposite the Post and Telegraph Offices, and AJC Bank, and within a few yards from the other banks. The ground frontage to east side of Church Street, is 35 feet by a depth of 163 feet.*²⁰⁴

In 1900, long-term Parramatta resident and auctioneer John Taylor stated that Barnes had ‘improved’ the land soon after the purchase.²⁰⁵ Brownrigg’s 1844 map showed a single building in approximately this position owned by J Barnes. Improvements on this lot occurred after the plan was compiled.

By his will of 24 April 1862, Joseph Barnes, of Parramatta, licensed victualler, left the house and premises in Church Street, then occupied by Peter Cardiff, to his wife Elizabeth as a life estate with the remainder to his daughters Elizabeth Barnes (later Ellison) and Ann Barnes. Joseph Barnes died the same day. His wife Elizabeth also later died.

Later evidence cited in 1900 claimed that Peter Cardiff occupied the property for over 22 years. The 1841 Census showed Peter Cardiff living in Parramatta. A Peter Cardiff, aged 46, shoemaker, arrived on the North Briton on 14 December 1839, with his wife aged 42 and two daughters and two sons. It is unclear when Cardiff vacated the property.

Joseph Barnes’ daughter Ann Barnes died unmarried and childless on 11 September 1870. By her will of 17 January 1885, Harriett Jane Barnes left her property to her sister Isabel Alice Maud Barnes. Harriett Jane Barnes died on 17 January 1885. By her will of 21 June 1882 Elizabeth Ellison (formerly Barnes) left property but it did not vest in any way to trustees and created no claim on the estate of her father. Elizabeth Ellison died on 22 June 1886. Albert Barnes died unmarried and childless on 7 February 1885. Elizabeth Barnes signed her will on 3 September 1898. She died on 9 September 1898. On 7 August 1900, the property was recorded as occupied by John Adams.

The 1895 detail survey (Figure 2.110) shows a small square building facing Church Street, possibly a remnant cottage.

On 7 September 1900, Isabel Alice Maud Barnes of Petersham, a ‘spinster’, and others conveyed the property to Leicester Stuart Anderson Simpson, a surgeon dentist of Parramatta, for £900. This included all the shares of the Barnes children.²⁰⁶ Simpson promptly lodged an application to convert the land to Torrens title. The accompanying survey plan, dated 8 August 1900 (Figure 2.111), outlines the buildings as they pertain to the boundaries of the site. Simpson mortgaged the property to James Cock, a ‘gentleman’ from Seven Hills, for £1,250 at 7%.²⁰⁷

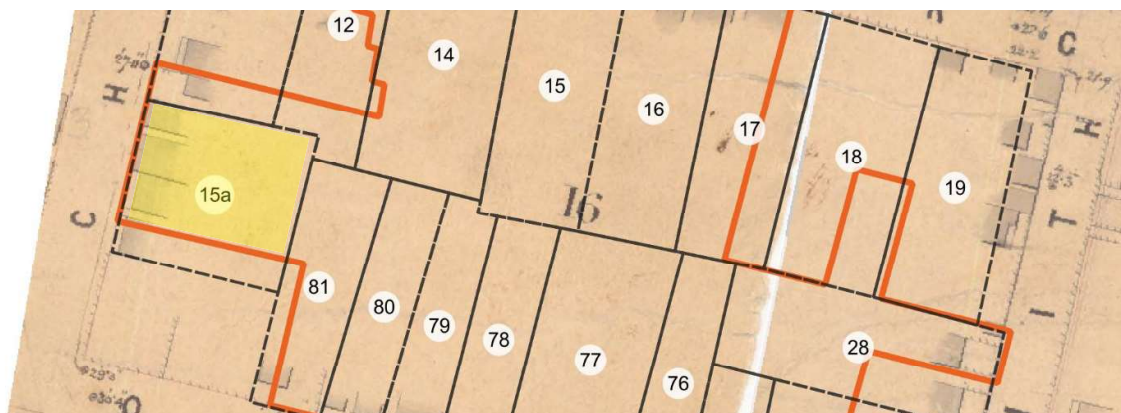


Figure 2.109 Detail from an 1855 survey plan of the street alignments that only shows the fronts of buildings. (Source: City of Parramatta Research and Collections)



Figure 2.110 Extract from Parramatta detail survey, sheet 18, 1895. (Source: SLNSW)

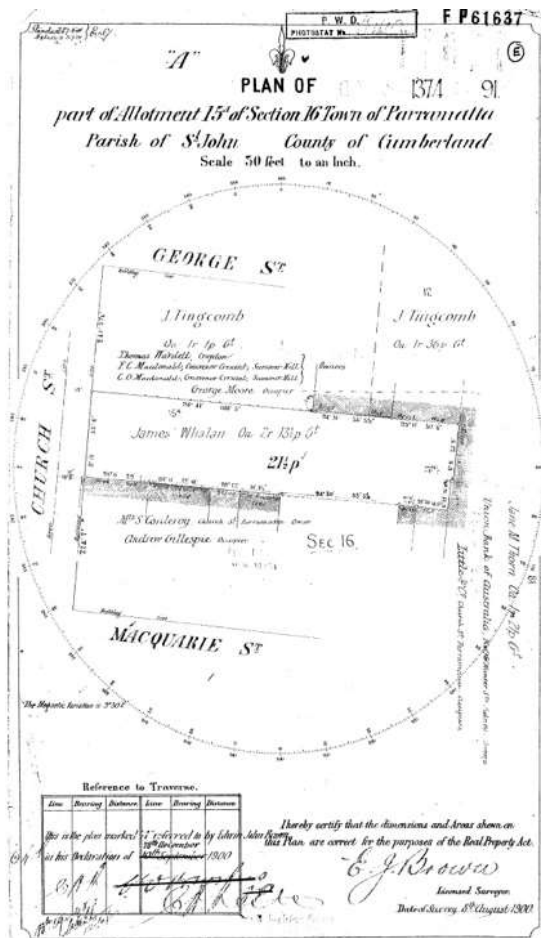


Figure 2.111 Plan of survey of Simpson's land, forming part of Allotment 15A of Section 16, 1900. (Source: NSW Land Registry Services, DP 61637)

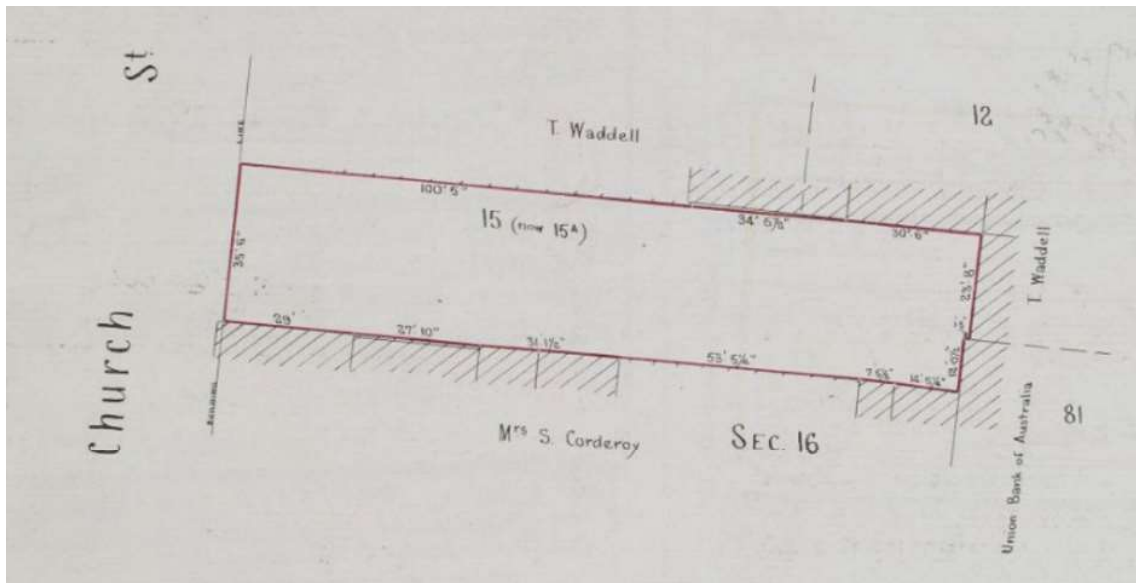


Figure 2.112 Plan of Simpson's land, 1900. (Source: NSW Land Registry Services, CT Vol 1374 Fol 91)

Simpson's land, being part of Lot 15A, with a frontage to Church Street of 35 feet 6 inches, was registered on certificate of title Vol 1374 Fol 91 on 24 September 1900 (Figure 2.112). *The value of property, including improvements, was £900. Solicitors Bowden and Bowden reported on 20 December 1900 that all buildings on the site had been demolished since the application had been made and new buildings were under construction. Simpson was anxious for the application to be finalised since he wished to borrow more money to complete the construction.*

A second mortgage was made to George Henry Mobbs on 2 September 1903. Both mortgages were discharged on 13 December 1906; Simpson simultaneously raised a new mortgage to Laura Cock and Herbert Alexander Dare. The mortgage was apparently raised to fund building of a new shop on the site 'on the land in front of his present surgery'.²⁰⁸ Construction of the new building was underway in November 1906.



Figure 2.113 Advertisement for John Hunter & Son Ltd, 1905. (Source: Hillier, RS c1905, *Beautiful Parramatta: Descriptive and Illustrative*, unpaginated)

On 29 December 1906 Simpson notified the public via the *Cumberland Argus and Fruitgrowers Advocate* that he had leased his premises to John Hunter and Sons and was moving his surgery to the other side of Church Street opposite the AJS Bank.²⁰⁹ The lease was recorded on the certificate of title on 9 February 1907 to John Hunter and Son Ltd.²¹⁰ John Hunter and Son Ltd was a firm of boot retailers which opened the Parramatta Boot Palace at this location in Church Street. The new building was completed in March 1907 and was described in detail as follows.

The handsome premises of which John Hunter and Son have just gone into occupation, have added greatly to the appearance of that portion of the business area from an architectural standpoint and also by the fact that a pavement has been laid in front of the building totally different to any other in the whole municipality It was laid by Messrs Hughes and Co of Sydney.

The new shop of John Hunter and Son has a double front and occupies the site where Mr LA Simpson carried on for some years his dentistry business. The premises have been built for Mr Simpson who leases them to the firm named. Mr JW Hill was the architect, and Mr W Nicholls of Leichhardt, the builder. The ceiling of the interior of the shop is all steel with a large lantern light in the middle of the roof. The front windows are supported by nickel columns, and have marble sills and tiled dados of bright emerald colour. The verandah, which is of an entirely modern type, is built of embossed steel in cave form and supported on cast-iron columns. The whole is chastely picked out in cream, green and gold. The dwelling at the back is gained by a side entrance, which is entirely independent of the shop. The large plate-glass windows are lit from the outside by lamps placed under the verandah ... Altogether, the structure is thoroughly up-to-date, and for its size compares very favourably with any of the City shops.²¹¹

John Hunter and Son Ltd of 194 Church Street (232 Church Street) continued to lease the property for many years, until as late as 1967. Leicester Stuart Anderson Simpson died on 9 July 1936 aged 61. He served as the mayor of Parramatta (1918–1922) and an alderman (1914–1918 and 1923–1936).

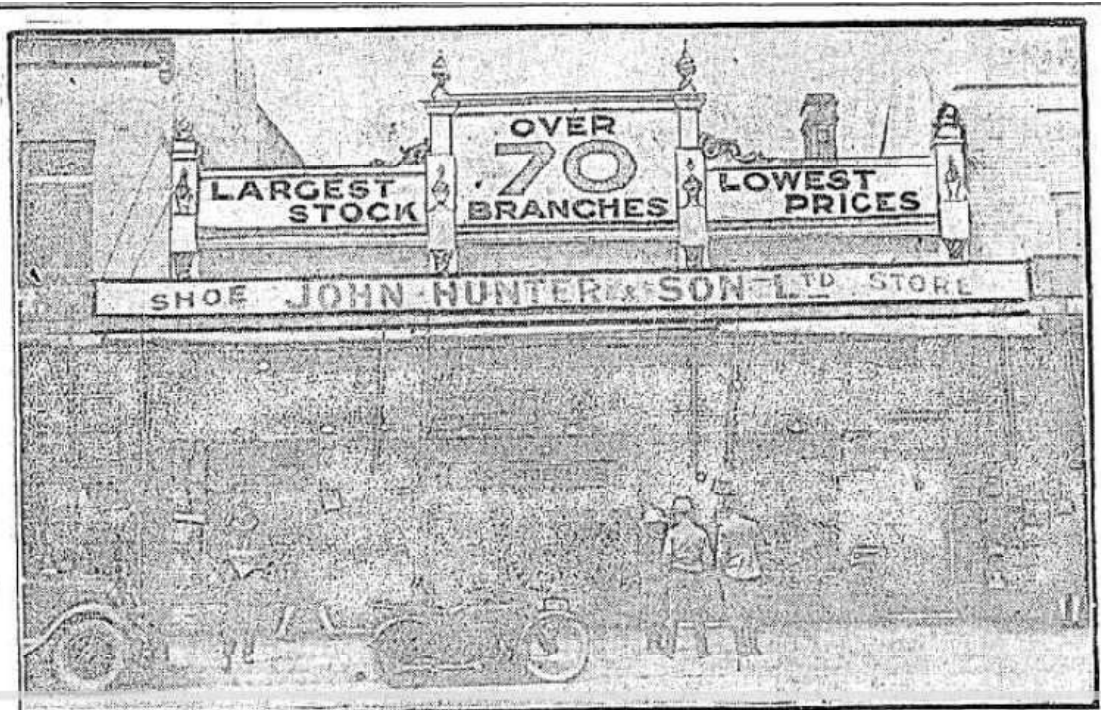


Figure 2.114 Photograph of the John Hunter & Son Ltd store in Church Street. (Source: *Sunday Times*, 29 September 1929, p 23)

Following Simpson's death the property passed by transmission on 17 June 1937 to the Union Trustee Co of Australia Ltd.²¹² Part of the site was resumed in 1964 and the residue was registered on certificate of title Vol 10557 Fol 164 with the correct name of the owner now being the Union Fidelity Trustee Company of Australia Ltd. The site measured 21 perches. The property changed hands in November 1973 to John Greenfield and Toba Greenfield, investors, of Double Bay. It then changed ownership in January 1976 to St George Permanent Building Society Ltd, which changed its name to St George Building Society Ltd in 1984. John Hunter & Son Pty Ltd's lease expired in 1970. Various leases were registered between 1973 and 1984.

2.3.18 DP 64281—Lot 2

Lot 2 in Whalan's subdivision was conveyed on 13 April 1844 to William Goodin of Parramatta, cooper, for £115. It measured 22 perches and was bounded on the north by lot 1 sold to Joseph Barnes, 163 feet 8 inches, on the east by J M Thorn 36 feet 3 inches, on the south by lot 3 163 feet 8 inches, and on the west by Church Street 36 feet 3 inches.

Goodin held the property until his death. It was devised by William Goodin to his daughter Georgina Kate Goodin and was described as 'Two houses and shop and premises ... now leased to C W Fuller conveyed to me by deed bearing date the 13th of April 1844'. William Goodin died on 26 December 1886. A valuation of William Goodin's estate on 3 February 1887 described this land as:

Allotment of land having frontage of 36 feet 3 inches to Church Street Parramatta by a depth of 163 feet 8 inches to a Right of Way upon which is erected 1 Brick Shop and Dwelling containing Bakers Shop, 2 Rooms Kitchen on the Ground floor & 3 Rooms on the first floor slate roof – Front verandah with Galvanised Iron roof extending the full width of the Footpath Church St. At the rear is erected a Galvanised Iron Bake House with Bakers Oven – also Brick Stable Coach House and Hay loft.

Also 1 Brick two storey Shop & Dwelling contg Tobacconist & Hairdresser's shops 2 Rooms & Kitchen on the Ground floor and 4 Rooms on the first floor – Slate roof Front Verandah with Galvanised Iron roof extending the full width of the footpath on Church Street. At the rear is erected a Galvanised Iron shed Leased to Mr C E Fuller for 10 years from November 1st 1882 at a rental of £162 per annum Value £2500.

By a settlement dated 21 October 1887, Georgina Kate Corderoy, Parramatta, spinster (daughter of William Goodin), vested this property of two houses and shops in Church Street to William Drew, Parramatta, gentleman, as trustee.

By a marriage settlement of 18 October 1889 with the following parties, 1st, Sydney Ernest Corderoy, Glenmore Road, Paddington, commercial traveller, 2nd Georgina Kate Goodin, Western Road, Parramatta, spinster, 3rd Henry Frederick Barratt, Burwood, accountant (trustee), this land was vested in Barratt as trustee for Georgina Kate Goodin. The Church Street land had been left to her in her father's will, and was situated north of A C Willis, with two shops and dwellings and a small shop leased by Henry Mason. Land on the western side of Church Street was also included. On 2 December 1889, Georgina Kate Corderoy, wife of Sydney Ernest Corderoy of Kangaloon, storekeeper, mortgaged it to the Bank of New South Wales for £600 cash credit. It had been leased to Cyrus Edgar Fuller for 10 years from 1 September 1882.

Henry Frederick Barratt died on 20 May 1895 and James Heber Hitchcock was later appointed in his stead on 25 September 1896. The 1895 detail survey showed two buildings facing Church Street, on this site. Georgina Kate Corderoy leased part of the property on 24 November 1897 to F W Brown for 5 years from 1 September 1897.

The mortgage was discharged on 28 June 1904. On 2 July 1904, the property was conveyed by James Heber Hitchcock, Petersham, estate agent (as trustee), and Georgina Kate Goodin (now Corderoy, Parramatta, married woman) to Andrew Gillespie of Parramatta, pastry cook, for £850. On 9 July 1904, a deed with similar parties sold the property to Andrew Gillespie, Parramatta, pastry cook, for £1,650. E J Brown prepared a Real Property Application plan on 18 January 1905 (Figure 2.115).

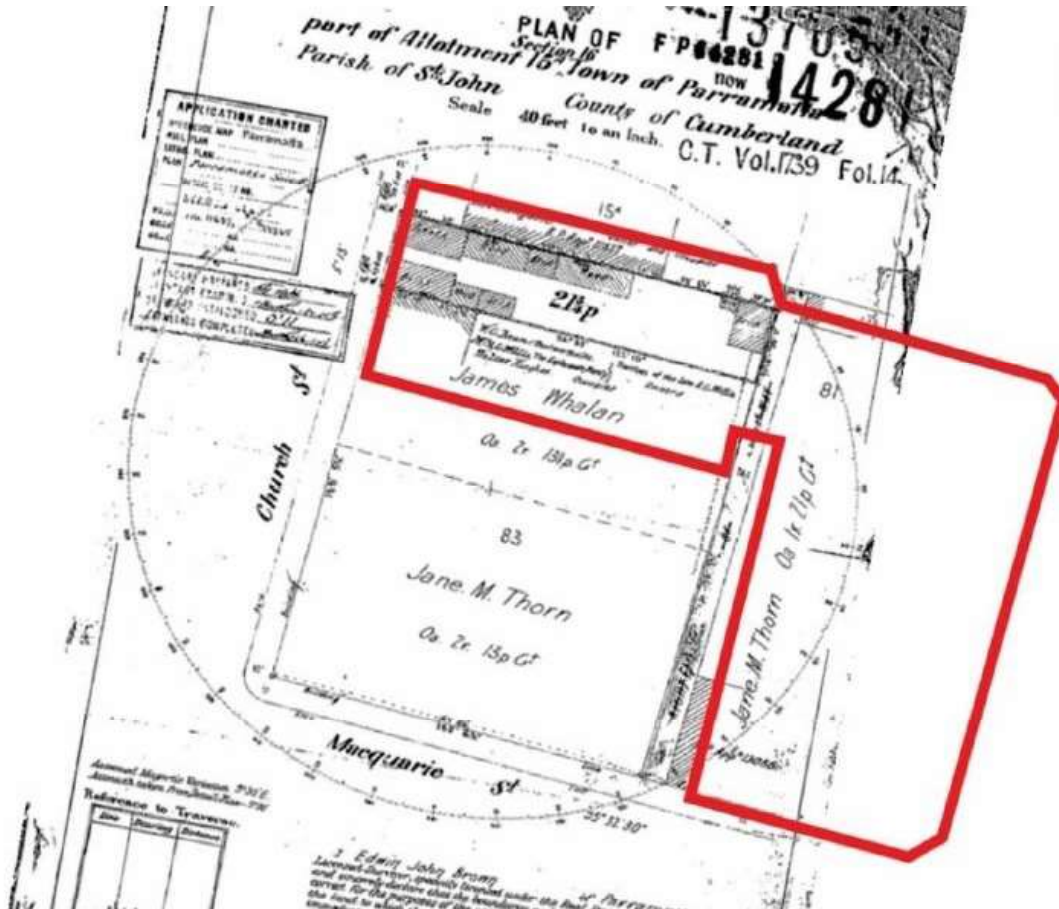


Figure 2.115 Real Property Application 17355, DP 63755, registered on CT Vol 1739 Fol 14, 27 November 1906. (Source: NSW Land Registry Services, annotated by Casey & Lowe 2017, 48 Macquarie & 220–230 Church Streets, Parramatta, Archaeological Assessment, p 47)

On 10 March 1906, James Heber Hitchcock of Petersham, agent, and Andrew Gillespie of Parramatta, pastry cook, signed a Real Property Application for the property valued at £1,500. It was occupied by Andrew Gillespie. Hitchcock specified that the title should be issued to Gillespie. On 4 December 1906, a Certificate of Title was issued to Andrew Gillespie of Parramatta, pastry cook. Gillespie had occupied one of the shops as early as 1893.

Gillespie held it for many years and leased the shops while continuing to occupy one as a bakery. On 25 January 1913, part was leased to Joseph Benedict Walker, Parramatta, tobacconist. On 25 January 1913, part was leased to Nicholas Stephen Austin, Parramatta, jeweller. On 16 July 1917, part was leased to Edward Strangward Adcock, Parramatta, mercer. Their leases were regularly renewed. Andrew Gillespie died on 11 June 1938.

On 11 October 1938, his daughter, Nellie Doris Kingham of Cronulla, widow, submitted a transmission application, which was implemented.

On 9 January 1941, she transferred the property to Burns Philip and Co Ltd. On 14 March 1957, it was transferred to G J Coles and Co Ltd. The resumption of part of the land by the Council of the City of Parramatta was recorded on the title on 22 June 1964.

2.3.19 Parcel 1 rood 9 perches—Lots 3 and 4—Church Street

Lots 3 and 4 of Whalan's subdivision merged into the same ownership for some years. The auction of 20 January 1844 described Lot 3 as having a good brick cottage and detached kitchen occupied by Mr Urquhart on it. This was almost certainly James Urquhart, of Church Street, Parramatta, coachbuilder, listed in the 1839 Directory. There were various advertisements for James Urquhart's coach building works at Parramatta throughout the 1840s. There is also a notice in June 1845 that W F Hulle, pork butcher, had moved his shop in Church Street 'opposite Mr Urquhart's the Coach Builder'.

On 13 April 1834, James Whalan, of Fish River, County King, freeholder, and his wife Lydia conveyed Lot 3 to John Williams of Baulkham Hills, landholder, for £225. On the same day, another conveyance was signed with the following parties for Lot 4, 1st James Whalan, Fish River, County King, freeholder, and his wife Lydia 2nd Robert Copeland Lethbridge, Penrith, esquire 3rd John Williams, Baulkham Hills, landholder. It had been sold to Lethbridge for £120 who then sold it to Williams for additional £17/10/0 making a total cost to Williams of £137/10/0. According to the auction sale notice, there was a well on this lot.

Williams held it until his death on 9 February 1875 intestate. The sale by Whalan to John Williams should have recorded the correct name of the purchaser as John Williams Foster. Letters of administration were granted to his son, also named John Williams Foster. On 22 September 1880, a conveyance was signed with the following parties, 1st John Williams Foster, Dural, gentleman 2nd Elizabeth Foster, Dural, widow 3rd Thomas Flynn, Parramatta, grocer. Together the two lots measured 1 rood 9 perches, and were bounded on the west by Church Street, 81 feet 6 inches, on the north 163 feet 8 inches, on the east 81 feet 8 inches and on the south land owned by Artlett 163 feet 8 inches. Flynn paid £1,571 for the land.

He mortgaged it to the Permanent Mutual Benefit Building and Investment Society for £600 on 24 September 1880. The loan was discharged on 12 December 1881, and he sold it the following day. The purchaser was Cyrus Edgar Fuller, of Parramatta, stationer who paid £3,000. It was part of the land that was developed as part of the Mercury Buildings, to the south of the current site. On 12 August 1882, it was mortgaged to Federal Building Society for £5,000. Other transactions and loans financed construction.

On 18 February 1888, Cyrus Edgar Fuller, of Manly, bookseller and stationer, sold the land to Alfred Charles Willis, of Parramatta, tailor. After losing a small area on the east for United Lane, the land measured 1 rood 8" perches. It began 105 feet 8" inches north of Macquarie Street and was bounded on the west by Church Street 82 feet 8 inches, on the north 159 feet 2 inches, on the east by the right of way 81 feet 7 inches and on the south by Artlett 160 feet 8 inches. The sale also gave use of the right of way. On 21 February 1888, Willis mortgaged it to the Australian Mutual Provident Society for £5,000 for 4 years. The 1895 detail survey showed two or possibly three buildings facing Church Street on the site (Figure 2.110).

After the loan was discharged on 1 December 1897, another was taken out. The mortgagees were David Moss Myers, Sydney, solicitor, Alfred Hort Emanuel, Parramatta, brewer, and Maurice Myer Emanuel, Sydney, gentleman, who provided a loan for £4,525 for 5 years at 8%. Alfred Charles Willis died on 18 August 1903. The valuation of Alfred Charles Willis' property by Richardson and Wrench 29 August 1903 dated described the property as:

PARRAMATTA:

Land having 86½ feet frontage to Church Street with a depth of 160 feet back to a lane – On it are Four Shops and Dwellings combined, built of brick, on stone, iron roof: Two contain each Shop, 5 rooms, kitchen and bathroom – Stabling of brick at rear with loft

ONE has an extra bedroom and wooden stable at rear ONE has a larger shop & Gallery, 4 rooms etc Estimated present market value £6,000.

The loan was repaid and the title was reconveyed to his devisees on 19 April 1908. The shops were then sold individually (see below).

2.3.20 DP 84329

Parramatta chemist Leslie Walter Pye had agreed to purchase the land but then sold a number of the individual shops to different owners. The northernmost shop was sold as 10" perches. On 21 April 1908, a conveyance was signed with the following parties, 1st Hannah Willis, Manly, widow, and William George Bean, Parramatta, gentleman (executors of the will of Alfred Charles Willis) 2nd Leslie Walter Pye, pharmaceutical chemist 3rd Thomas Davies Little and Richard Stewart Richardson, Parramatta, master printers. The 10" perches commenced 169 feet 7" inches north of Macquarie Street, and was bounded on the west by Church Street 18 feet 10" inches, on the north 42 feet 2" inches and 117 feet, on the east by the right of way 10 feet wide, 18 feet 5" inches. The shop was sold for £1,900.

On 24 August 1914, Thomas Davis Little and Richard Stewart Richardson conveyed the property to their company The Cumberland Argus Ltd.

On 3 May 1921, Cumberland Argus Ltd leased part of the land to Ebenezer Charles Dibley, Parramatta, stationer, with a frontage of 14 feet 1" inches and 41 feet 6 inches deep, with an upstairs skylight room from 1 May 1921 for 10 years at £6 per week. On 27 November 1936, The Cumberland Argus Ltd conveyed the land to John McAuslan Ritchie of Campbell Street, Parramatta, gentleman, for £9,500.

Ritchie redeveloped the site known as 188 Church Street with a new building known as the Post Office Chambers (Figure 2.116) designed by architect Leslie J Buckland and built by FS Stephens, builder, of 23 George Street, Parramatta. To maximise floor space, concrete walls were used rather than brick. The chambers included 26 rooms available as office suites.

Suite 8, first floor, of the Post Office Chambers was leased for 5 years from 6 March 1939 to Olga Florence Israel, Newtown, on 3 March 1939. A Real Property Application plan was prepared on 5 January 1940 (Figure 2.117).

John McAuslan Ritchie, of Parramatta, gentleman, signed his Real Property Application for the premises known as 188 Church Street, consisting of a ground floor and suites on the upper levels with a total value of £14,000 on 15 January 1940. The Certificate of Title for 10" perches was issued to John McAuslan Ritchie, Parramatta, gentleman, on 3 December 1940.

Previously, on 28 February 1940, the ground floor and shop known as 188 Church Street with frontage of 14 feet and depth of 63 to 65 feet were leased to Joe Gardiner, shoe retailer, for 4 years and 3 days from 2 March 1940. Cumberland Newspapers Ltd leased Suite 7, first floor on 30 June 1941.

The property was transferred to Joe Gardiner Ltd on 27 June 1952. On 5 June 1957, it was transferred to G J Coles and Co Ltd. Finally, on 6 March 1981, a transfer to Lewis Development Pty Ltd, the developer of the Greenway complex, was recorded on the title.

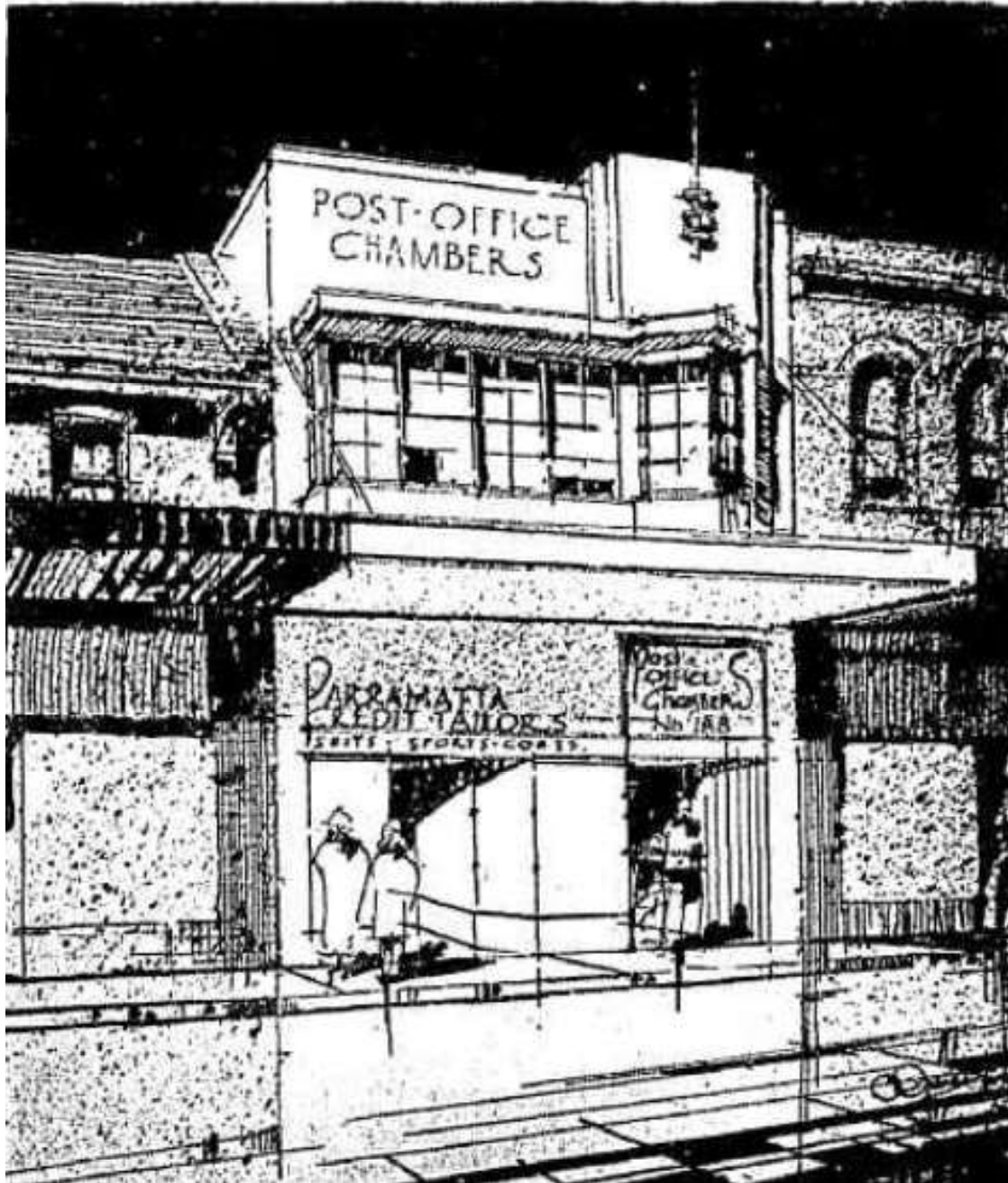


Figure 2.116 Architectural render of new Post Office Chambers, Church Street. (Source: *Cumberland Argus and Fruitgrowers Advocate*, 3 February 1938, p 4)

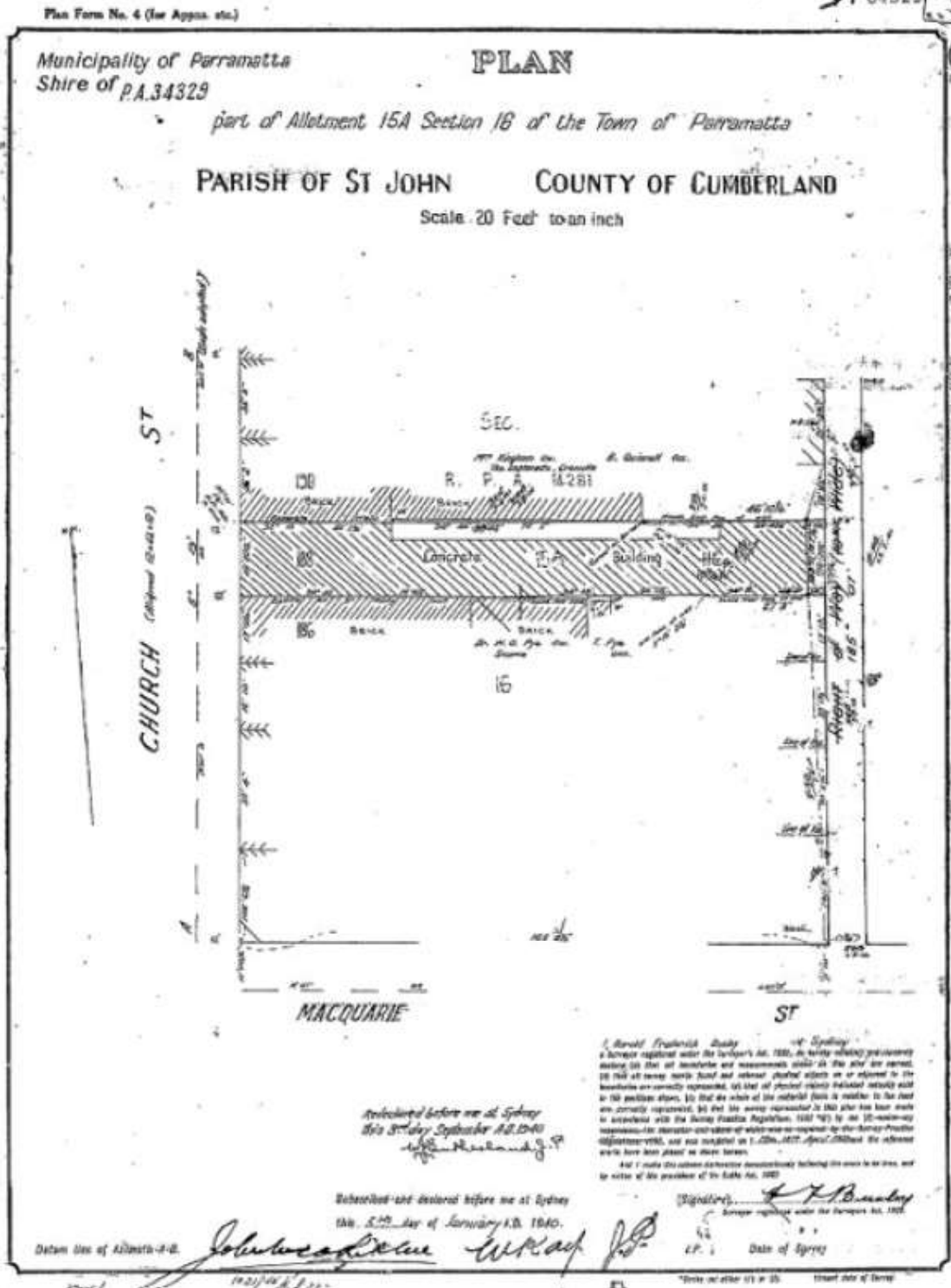


Figure 2.117 Survey plan of part of Allotment 15A accompanying Real Property Application 34329, 1940, showing the Post Office Chambers built in concrete extending across most of the site. (Source: NSW Land Registry Services)

2.3.21 DP 618625—Lot 4

The next parcel of land measured 9" perches. On 21 April 1908, a Conveyance with same vendors, Hannah Willis, Manly, widow, and William George Bean, Parramatta, gentleman (executors will of Alfred Charles Willis), and Leslie Walter Pye, pharmaceutical chemist, sold the property to Richard Straub of Parramatta, jeweller, for £1,900. The 9" perches, began 152 feet 8" inches north of Macquarie Street, and was bounded on the west by Church Street 16 feet 11 inches, on the north by the centre of a party wall 9 inches thick 78 feet" inch, then a line along a wooden building and fence and then the centre of a party wall 4" inches wide 54 feet 10" inches then 2" inches running south then along the centre of party walls 26 feet 10" inches, on the east by a right of way 10 feet wide to Macquarie Street 17 feet, and on the south by a fence 117 feet 7" inches and then along the centre of a party wall 9 inches thick 42 feet 5" inches plus the right to use the right of way.

Straub mortgaged it to Charles Ernest Byrnes of Parramatta, solicitor, on 23 April 1908 for £1,700 at 6% for 3 years. The loan was discharged on 3 February 1916 when he sold it the same day. The purchaser, Herbert James Watts of Parramatta, grazier, paid £2,350.

Herbert James Watts died on 4 June 1917 aged 64. A valuation of his real estate by Tobin and Lyne of Parramatta on 26 June 1917 described the property as:

PARRAMATTA

No 186 Church Street ALL that piece of land ... containing an area of 9¼ perches ... on which is erected a Brick Shop & Dwelling of 6 rooms & Offices, at present occupied by Mr R Straub (Jeweller) under lease at £4.15.0 Per week. £2,400.

On 31 January 1921, his devisees, William Australia Watts of Pilliga, grazier, and Arnold Hamilton Peter Watts of Tumut sold the property to Ettie Douglas, wife of James Douglas of Parramatta, boot merchant, for £2,900. She mortgaged it the same day to Frank David Muller of Sydney, gentleman, and John Edgar Terry of Sydney, accountant, for £2,000 for three years at 8%. Another mortgage was signed the same day with the same mortgagees for an additional £300 for three years at 8%. Both mortgages were discharged on 24 February 1922. It was then conveyed on 27 February 1922 to Leslie Walter Pye of Parramatta, chemist, for £3,600. He conveyed the property to his son Walter Osmond Pye of Harris Park, medical student, for 10 shillings on 20 May 1927. On 15 December 1955, Walter Osmond Pye, of Scone but originally of Harris Park, medical practitioner, conveyed it to Darrell Lea Chocolate Co Pty Ltd for £43,600.

Darrell Lea Chocolate Co Pty Ltd conveyed the land to G J Coles & Co Ltd for £84,661 on 13 October 1958. On 16 February 1981, G J Coles & Co Ltd conveyed the land and other adjacent parcels of land to Lewis Development Pty Ltd for \$3,600,000.

A plan prepared by surveyor Timothy Alfred Rolles on 10 June 1981 showed that land as well as the land in RPA 34329 (CT 5195 f 166) to the north that was being consolidated into one parcel.

Lewis Development Pty Ltd signed a Real Property Application for the 9" perches on 30 June 1981 and a title was subsequently issued.

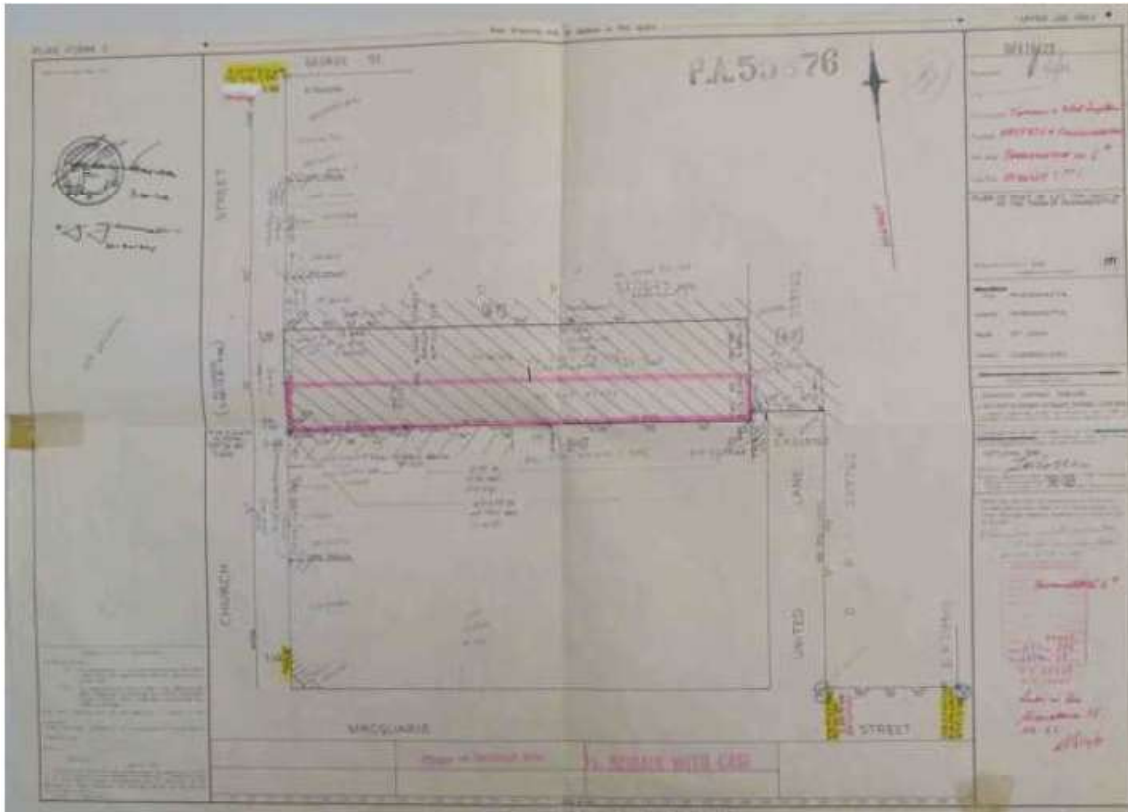


Figure 2.118 Survey plan accompanying Real Property Application 55876, 1981. (Source: State Archives & Records, Primary Application Packet 55876, reproduced from Casey & Lowe 2017, 48 Macquarie & 220–230 Church Streets, Parramatta, Archaeological Assessment, p 53)

2.3.22 DP 1041242

The southernmost parcel of land on the site measured 8" perches. When the land was conveyed on 21 April 1908 by Hannah Willis, Manly, widow, and William George Bean, Parramatta, gentleman (executors will of Alfred Charles Willis), it was the parcel that Leslie Walter Pye, pharmaceutical chemist, retained in his ownership. The 8" perches began 135 feet 10" inches north of Macquarie Street, and was bounded on the west by Church Street 16 feet 10 inches, on the north, on the east by the right of way 10 feet wide to Macquarie Street 15 feet 10" inches. The sale price was £1,900.

On 20 May 1927, Leslie Walter Pye of Parramatta, chemist, conveyed it to his other son Leslie Tudor Pye, Harris Park, chemist, for 10 shillings. On 13 December 1960, Leslie Tudor Pye of Parramatta, chemist, conveyed it to Elty Pty Ltd, of 35 Ainslie Avenue, Canberra, ACT, for £75,000. The property returned to the hands of the Pye family on 18 July 1975, when Elty Pty Ltd, c/- 220 Church Street, Parramatta, conveyed it to Martin David Tudor Pye, of Flat 20, 2 Albert Street, North Parramatta, for \$180,000. On 24 December 1980, Martin David Tudor Pye, now of 30 Bettington Road, Dundas, pharmacist, conveyed it to the Premier Permanent Building Society Ltd, 400 Chapel Road, Bankstown, for \$560,000. On 1 December 1981, the owner of 220 Church Street was recorded as RSL Permanent Building Society Ltd.

2.3.23 Allotment 81 Section 16—grant to Jane M Thorn

Allotment 81 measuring 1 rood 27 perches was granted to Jane Matilda Thorn. The 1823 Return of Allotments listed Lot 81 measuring 67 perches in the name of R Tomlinson.

Robert Tomlinson was shown as the claimant of this land on the 1823 map (Figure 2.119). According to the 1811 Muster, Robert Tomlinson was tried at the Old Bailey in March 1795, receiving a sentence of 7 years. He arrived in 1801 on the Minorca/Canada. He was listed as a 'smith' (blacksmith) in 1801. The 1805–06 Musters listed him as a labourer at Parramatta. The 1814 Muster showed he was a file cutter for the government at Parramatta (a maker of files, also involved the cutting of grooves on the file surface). He was still a file cutter at Parramatta in 1822. The 1828 census listed Robert Tomlinson, aged 67, as free by servitude, who had arrived on the Canada in 1800 [sic], with a 7 year sentence who was a file cutter at Parramatta. His wife Sarah, aged 44, free by servitude, had arrived on the Glatton in 1803, with a 7 year sentence.

An area of 27" rods, in Back Row [Macquarie Street], Parramatta, bounded on the south by the line of the Houses E 6° S 42 feet on the east by N 6 E 201 feet on the north by W 6° N 33 feet and on the west by S 9° W 202 feet was leased for 14 years to Robert Tomlinson on 24 November 1809. This 14 year lease was from Lieutenant Govern William Paterson.

James Meehan's 1809 Fieldbook recorded the following entry:

Robert Tomlinson a Lease in Back row Town of Parramatta front 66 ½ S 64 (is S 6 W 83 to the Street) E line N 6 E 318 to present paling from [?] 305 (Eles – cuts Thorn's & Marsden's line of Leases) W 6 N 50 The line S 9½ to Contains 50 - the line S 10 W 306 [NB much of this entry is difficult to decipher due to poor condition of original].

A transfer of a house and premises 'back row, Parramatta', from Robert Tomlinson, Parramatta, to Thomas Abbot, Sydney, for £12/10/0 on 8 July 1811 was recorded in the 'Old Register'. This was probably a mortgage. There were two auction notices regarding Parramatta property held by Tomlinson. The earlier one seems to relate to this lease, whilst the later one may also relate to it. On 8 February 1817, a Provost Marshall's auction notice appeared in the case Thompson v Tomlinson, that an auction would be held on 17 February of the house and premises of the defendant in Back-row, Parramatta, unless the execution was met. A later notice of 17 February 1821 in the case of Freeman v Tomlinson advertised an auction on 24 February of the dwelling house and premises of the defendant in Parramatta unless the execution was met. Neither of these was recorded as sales in the Old Registers, though there was no legal requirement that they be recorded. It is possible that one of these auctions sold the lease of 1809.

On 30 June 1823, a lease of this land for 21 years was granted to James Bradley of 67 rods, bounded on the west by 3 chains 68 links, on the north 1 chain 5 links, on the east 3 chains 70 links and on the south by Macquarie Street 1 chain 5 links. These were the dimensions of this land when granted to Jane Matilda Thorn.

James Bradley was sentenced at Edinburgh in 1812 and arrived on the Fortune in 1813 and was later employed by Rowland Hassall in trustworthy positions. He petitioned for the mitigation of his sentence in 1819 hoping to bring out his family. Rowland Hassall added his recommendation to the application noting that Bradley could support is family by 'opening a Seminary' for which he was amply qualified. Bradley received a Ticket of Leave. On 30 December 1820, James Bradley of Parramatta advertised his private school at Parramatta would continue to take pupils.

In 1821, when Bradley petitioned for an absolute pardon, he stated he had conducted a school in Parramatta since his Ticket of Leave. He still wished to bring out his wife and child in Ireland. He received an absolute pardon. A notice inserted in the Sydney Gazette of 13 March 1823 by F E Forbes advertised that James Bradley who had formerly conducted 'a large School at Parramatta' had taken up a position at the Sydney Academy. The 1823 Map showed a building on this Allotment.

On 30 January 1824, James Bradley wrote to the Colonial Secretary that he had two houses and some cattle. He requested a grant of land. The houses were in Parramatta. On 2 September 1826, the Sheriff advertised that on 6 September 1826 he would sell property to meet the debt in the case Rose v Bradley. That property was described as Bradley's premises in Macquarie Street, Parramatta, consisting of 'A Weather-boarded House, shingled, containing 5 rooms; and standing on an allotment of 60 rods', plus another house in Airds Street (Figure 2.119).

According to the report for the Court of Claims case when an application for grant had been submitted, the lease was sold by the Sheriff under a deed of execution to Thomas Ross [Rose??] on 30 December 1826. This transaction was not registered. The identity of Thomas Ross/Rose is unclear. On 3 March 1828, a man named Thomas Ross issued a caution to trespassers against entering his land at Appin.

The Census of November 1828 listed two men named Thomas Ross, both of them assigned convicts at Bathurst. The land was sold by Ross's or Rose's agent, Andrew Nash, to Thomas Wilson on 4 November 1829. That transaction was also not registered. Wilson sold it the same day to Samuel Gilbert in another transaction that was not registered. The November 1828 census listed Samuel Gilbert, aged 40, had arrived on the Mariner in 1816, as free by servitude with a 14 year sentence, employed as a baker at Parramatta with 8 children, of which 3 arrived on the Lord Melville, free, in 1817. Samuel Gilbert was one of the residents of Parramatta who signed a petition on 14 August 1829 requesting that Dr William Sherwin settle in the town.

By a deed of lease and release dated 20 and 21 October 1835, Samuel Gilbert of Parramatta sold this land to John Thorn of Parramatta for £160. John Thorn's will of 19 November 1836 left this property to his daughter Jane Matilda Thorn.

Johnstone's 1836 copy of Richards map showed a building on this land. On 14 June 1837, the Court of Claims recommended a grant of this land to John Thorn on payment of 21 years quit rent. However, John Thorn died on 10 August 1838 before the grant could be issued. A superseded report by the Court of Claims on 20 November 1839 recommended a grant to Jane Matilda Thorn on payment of 21 years quit rent.

On 29 January 1844, Jane Matilda Thorn of Parramatta was granted 1 rood 27 perches bounded on the west 3 chains 68 links, on the north 1 chain 5 links, on the east 3 chains 70 links and on the south by Macquarie Street 1 chain 5 links. It had originally been leased to James Bradley on 30 June 1823 and was granted to Jane Matilda Thorn, daughter of John Thorn, on the basis of Case 497 and for the quit rent of £35/3/6 on behalf of the executors of the estate of John Thorn. Brownrigg's 1844 map showed one building on this grant granted to J Thorn (Figure 2.120). The Street alignment plan completed by Surveyor E J H Knapp in 1855 showed buildings on the site (Figure 2.121).

On 10 March 1860, Jane Matilda Thorn of Brisbane Grove near Goulburn, spinster, conveyed the grant to William Goodin of Parramatta, gentleman, for £262/10/0. Goodin conveyed it to Cyrus Edgar Fuller of Parramatta, stationer, for £1,385 on 24 December 1881. Fuller used the site to construct a new printing works, financing it and the construction of the Mercury buildings at the corner of

Macquarie and Church Streets with a series of mortgages. On 16 January 1882, he borrowed money by an equitable deposit to the Sydney and Country Bank Ltd. It was discharged on 4 May 1882.

A significant sum was borrowed on 16 April 1884 by Cyrus Edgar Fuller, of Parramatta, stationer and printer, from the NSW Mortgage Loan and Agency Co Ltd amounting to £7,500 for one year at 8% and covering various parcels of land including this grant.

Another mortgage of 6 July 1885 was made to the Union Bank of Australia Ltd. In the 1885 edition of Fuller's Cumberland Directory he boasted that in Macquarie Street, 'the completion of the CUMBERLAND MERCURY "LIGHTNING PRINTING" OFFICE with its eyrie-like tower of observation, symbolising the wide-awake MERCURY'S watchfulness over local interests'. Despite Fuller's rhetoric and confidence, he had seriously over extended himself.

A conveyance dated 2 February 1888 with the following parties, 1st NSW Mortgage Loan and Agency Co Ltd, 2nd Cyrus Edgar Fuller, Sydney, bookseller and stationer 3rd various parties 4th Union Bank of Australia Ltd, was part of the scheme to redeem his position. It allowed for a bank loan of £7,843/2/9 so Fuller could repay his 1884 mortgage.

On 23 February 1888, a right of way was created on land later shown as brown in CT Vol 1592 Fol 196. The 1895 detail survey (Figure 2.122) showed two buildings facing Macquarie Street and a large building at the rear, which was the printing works. The 1911 Jubilee History of Parramatta included a photograph of the printing works (Figure 2.123).



Figure 2.119 Detail from Stewart's 1823 plan showing a single structure partially within Lot 81. (Source: SLNSW)

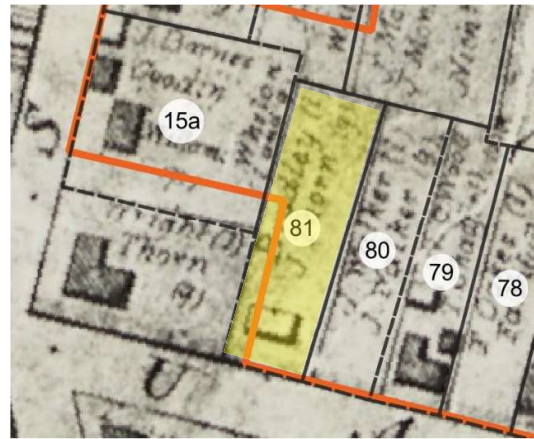


Figure 2.120 Detail from Brownrigg's 1844 plan showing a timber structure partially within Lot 81. (Source: SLNSW)

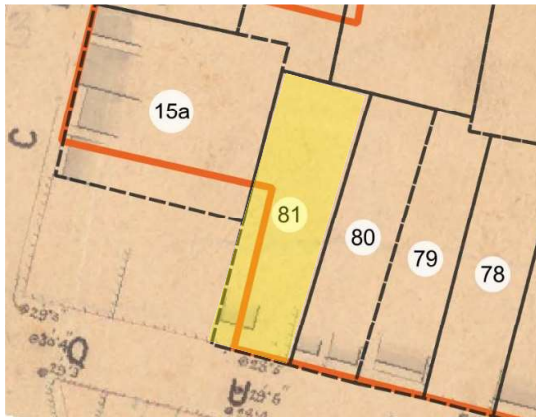


Figure 2.121 Detail from an 1855 survey plan of the street alignments that only shows the fronts of buildings. Part of at least one structure is within Lot 81 (Source: City of Parramatta Research and Collections)



Figure 2.122 Extract from Parramatta detail survey, sheet 18, 1895. (Source: SLNSW)



Figure 2.123 The Cumberland Argus Printing Works, Parramatta, on land at the rear of Macquarie Street (Allotment 81). (Source: Wharton, JC 1911, *The Jubilee History of Parramatta*, Cumberland Argus, Parramatta, p 146)

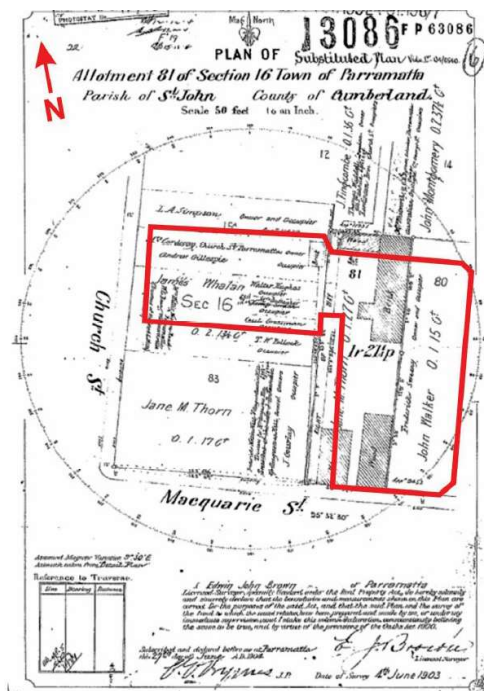


Figure 2.124 Survey plan accompanying Real Property Application 13086, 1903, showing the buildings located on Allotment 81, including the Cumberland Argus Printing Works at the rear. (Source: NSW Land Registry Services, DP 63086 annotated by Casey & Lowe 2017, 48 Macquarie & 220–230 Church Streets, Parramatta, Archaeological Assessment, p 36)

On 12 August 1903, the Union Bank of Australia Ltd conveyed this land to Thomas Davies Little and Richard Stewart Richardson of Parramatta, printers and publishers, for £1,200 which can be seen in (Figure 2.124).

On 11 November 1903, they signed a Real Property Application for the land whose area was now 1 rood 22" perches after land along its western boundary had been used by Fuller to create United Lane. The land was valued at £1,200. It was then occupied by Frederick Sweeny as a weekly tenant. On 4 March 1905, two Certificates of Title were issued to Thomas Davies Little of Parramatta, printer and publisher, and Richard Stewart Richardson, Parramatta, printer and publisher, for their individual half shares. Title was transferred to their newly formed company Cumberland Argus Ltd on 24 August 1914. On 24 August 1914, part of the land was transferred to Frederick Sweeny, Parramatta, coachbuilder.

2.3.24 Southern Part of Allotment 81, 29 Perches

A Certificate of Title was issued for the 29 perches to Frederick Sweeny, Parramatta, coachbuilder, on 19 October 1914. Like the rest of his property that passed by transmission to Sarah Sweeny, Parramatta, his widow submitted her application dated 29 January 1942 for the transfer of the title. She transferred it to the United Insurance Co Ltd on 10 March 1950. The United Insurance Co Ltd erected new offices on this site (Figure 2.125), which were officially opened in 1955. The building is also visible in a view of Macquarie Street in 1958 (Figure 2.126).

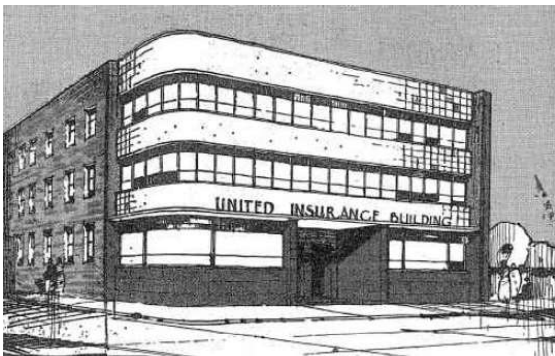


Figure 2.125 Architect's rendering of the United Insurance Co offices, Macquarie Street. (Source: *Cumberland Argus*, 27 April 1955, p 1)



Figure 2.126 View of Macquarie Street from Council Chambers, 1958, showing the United Insurance Co building adjoining the Coles Store. The distinctive tower of the Cumberland Argus Printing Works is no longer extant. (Source: City of Parramatta Research & Collections)

2.3.25 Northern Part of Allotment 81, 32¼ Perches

A Certificate of Title was issued to Cumberland Argus Ltd on 19 October 1914 for the northern part of Allotment 81 measuring 32" perches. A right-of-way had previously been created by Cyrus Fuller in 1888 and by the Union Bank in 1902, which was shown in brown and blue on the title diagram (Figure 2.127).

Title was transferred on 19 June 1936 to a new company formed to take over the Cumberland Argus named Cumberland Newspapers Ltd. The land was transferred to Marcus Clark and Co Ltd on 31 July 1952. Part of the land was transferred to the Council of the City of Parramatta on 10 February 1955 to widen United Lane. The rest of the land was transferred to GJ Coles and Co Ltd on 24 October 1956 to become part of the store constructed by the firm. The Coles Store is visible in the 1958 photograph (Figure 2.126).

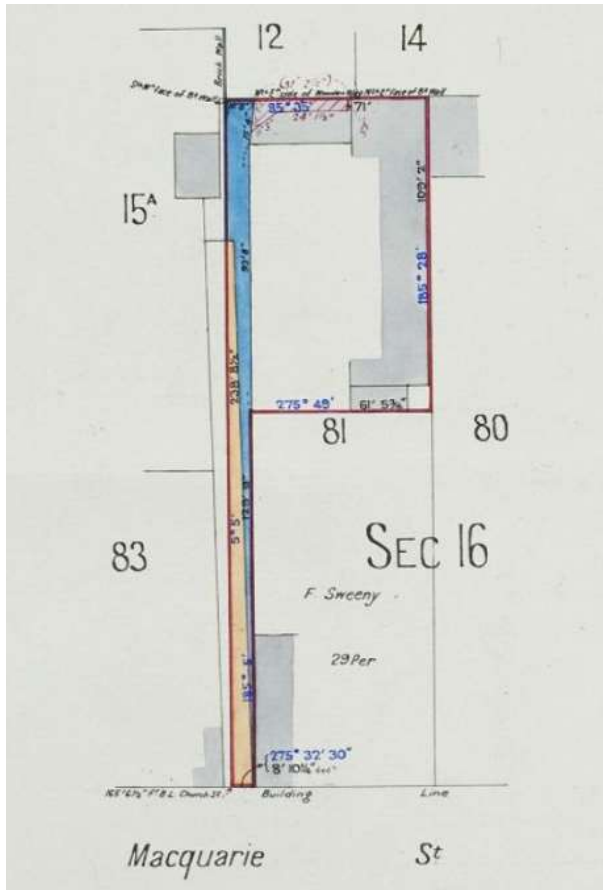


Figure 2.127 1914 title diagram showing the right of way created by CE Fuller, now known as United Lane. (Source: NSW Land Registry Services, CT Vol 2524 Fol 201)

2.3.26 Allotment 80 Section 16—grant to John Walker

Allotment 80, granted as 1 rood 15 perches to John Walker, was recorded in the 1823 Return of Allotments as 55 perches held by William Davis. This appears to relate back to a lease for 14 years to William Davis dated 9 June 1809. The lease was described as being bounded on the east by Marsden's lease north 7° east 198 feet, on the north or front by the line of houses west 6° north 100 feet, on the west south 6° west 198 feet, on the south by east 6° south 99 feet, 72 rods. It is notable that the description does not match the grant as it was later measured. The 1823 map (Figure 2.129) showed the site as vacant while nearby lots had early buildings.

Despite the allotment being listed in the name of William Davis, it was leased on 30 June 1823 for 21 years to John Walker as 55 rods (ie perches), bounded on the west by 3 chains 70 links, on the north 91 links, on the east 3 chains 70 links and on the south by Macquarie Street 92 links.

John Walker was born at Parramatta in May 1799 to Jane Walker. On 18 May 1820, when he was 21 years old he signed a Memorial to the Governor stating that he was John Walker who lived in Parramatta and was freeborn. Since he had five cattle but no land for them, he requested a grant. His request was minuted, stating that he would receive '60 acres'. On 31 July 1821, he married Mary Elizabeth Humm at St John's Church, Parramatta. According to one source, Walker was a wheelwright employed by Hugh Taylor. He eventually employed five men in his own business.

The Muster of September 1822 listed a John Walker, born in the colony, as a miller at Parramatta. A John Walker was also shown with a grant, with the number of acres unspecified, on which he resided in the District of Parramatta, plus five cattle, two hogs and 35 bushels of wheat.

On 9 August 1827, John Walker of Parramatta presented another memorial stating that he was a native and was married to a native and had three children. He wanted to build in Parramatta, but no land had been granted to him. He stated that he would prefer land on the Windsor Road. J Harris recommended him and stated that, 'The Memorialist is perfectly capable of Building a Good House'. This certainly appears to be the same John Walker who held the land in Section 16. The Census of November 1828 showed John Walker, aged 29, born in the colony and a Protestant. He was a wheelwright at Parramatta and had three horses. His wife Eliza aged 25 was also colonial born. Their children were all colonial born and they were William John, 6; Henry, 5; Mary Elizabeth 2; and Jane Matilda, 2 months.

There was probably more than one man named John Walker in Parramatta at that time. If not, he could have been the same John Walker who advertised goods for sale at Hassall's store in George Street, Parramatta, on 24 October 1827. On 21 February 1829, this John Walker issued a notice that he was taking over the business in Church Street formerly run by James Hassall. A John Walker was in business as an auctioneer in Church Street, Parramatta, in September 1829. In June 1831, a John Walker bought the Parramatta Market dues for £12.

However, on 2 September 1833, after the resignation of William Barnes, S Wright, JP, recommended that John Walker, a native of the colony, be considered for appointment as Inspector of Slaughterhouses at Parramatta. The suggestion was accepted and he was appointed by a Government Notice of 23 September 1833. He held that position until his death.

Johnstone's 1836 copy of Richards' map is damaged in this section so no details of buildings can be determined (Figure 2.130). In 1839, John Walker, wheelwright, was listed in the Post Office Directory as living in Macquarie Street, Parramatta. John Walker of Parramatta was granted the land in his lease of 30 June 1823 measuring 1 rood 15 perches for the quit rent of £28/17/6 on 14 December 1841. The 1831 field book survey by Richards shows the lot 80 as vacant, which indicates that there were no early buildings on this lot.

John Walker of Parramatta, wheelwright, signed his will on 5 February 1842, leaving his estate to his wife, Mary Elizabeth Walker, for the term of her natural life and to trustees with the power to sell. One of the witnesses to a later codicil dated 25 June 1846 was James Urquhart (who was involved with land within the study site facing Church Street).

John Walker died on 1 July 1846. On 8 July 1846, Gilbert Elliott, the police magistrate for Parramatta, informed the Colonial Secretary that John Walker had died and recommended his son, also known as John Walker, in his place as inspector of slaughterhouses at Parramatta. The suggestion was accepted and his appointment was gazetted on 17 July 1846.

Brownrigg's map of 1844 showed no buildings on the grant owned by J Walker. John Walker held other land in Parramatta. The absence of buildings on the 1844 map suggests that one of the other parcels of land he owned in Parramatta was the site of his business.

The land remained in trust for some years until the youngest child was 21 years old. On 2 May 1861, a mortgage of this land was signed with the following parties, 1st Mary Elizabeth Walker, Parramatta,

widow, 2nd Eliza and Henrietta Walker, Parramatta, spinsters (now both over 21), 3rd John Neale, Parramatta, gentleman. The loan was for £62 for 3 years.

When the loan was discharged on 7 September 1864, part of the land was sold. Mary Elizabeth Walker of Parramatta, widow, had become Mary Elizabeth Robertson of Parramatta, wife of Thomas Robertson, by then. Along with her children and their spouses, she sold the western part of Lot 80 to William Goodin, Parramatta, gentleman, for £90. It was bounded on the west by William Goodin's Lot 81, 244 feet, and on the east by a 'Stone Cottage containing two Rooms now in the tenure and occupation of Mary Elizabeth Robertson', 244 feet, and on the south by Macquarie Street, 31 feet.

On 25 August 1864, Mary Elizabeth Walker, Parramatta, widow, and her children and spouses conveyed the eastern part of Lot 80 to James Byrnes, Parramatta, esquire, as trustee to sell the land. It was bounded on the west by the western part of Lot 80, 3 chains 20 links, on the north 45" links, on the east 3 chains 70 links, and on the south by Macquarie Street 46 links. The eastern part of Lot 80 was auctioned at Taylor's Auction Mart, Parramatta, on 19 December 1864. On 21 January 1865, James Byrnes, Parramatta, conveyed the eastern part of Lot 80 to William Goodin, of Parramatta, gentleman, for £140. Additionally, on 21 January 1865, James Galloway, Parramatta, acknowledged that he had received £122/13/6 from the Walkers as agreed as part of the sale of this land.



Figure 2.128 Detail from Evan's 1804 plan showing Lot 80 as undeveloped. (Source: The National Archives UK)



Figure 2.129 Detail from Stewart's 1823 plan showing Lot 80 as undeveloped. (Source: SLNSW)



Figure 2.130 Detail from Johnstone's 1836 map. Although partly damaged on the part of the plan showing Walker's lease, it does show two of the structures present on the 1823 plan. (Source: State Archives & Records, SA Map 4799 – originally P714a- annotated by Casey & Lowe 2017, 48 Macquarie & 220–230 Church Streets, Parramatta, Archaeological Assessment, p 19)

William Goodin died on 26 December 1886. A valuation of William Goodin's estate on 3 February 1887 described this land as:

Allotment of land having frontage of 61 feet 4 inches to Macquarie Street Parramatta by a depth of 244 feet on one side and 248 feet on the other: upon which is erected 2 Brick Cottages each containing 4 Rooms with Front Verandah – The Cottage situated nearest to Church Street has a weatherboard Kitchen and the other a Brick Kitchen Value £1726.

A marriage settlement was signed on 28 March 1890, with the following parties 1st Silas George Sheather, Parramatta, gentleman 2nd Edith Alice Goodin, Parramatta, spinster [a daughter of William Goodin] 3rd George Edward Herbert Black, Parramatta, conveyancer (trustee). The land affected was the eastern half of Lot 80 Section 16. Silas George Sheather, of Camellia Grove, Parramatta, married Edith Alice Goodin, daughter of the late William Goodin at All Saint's, Parramatta, on 29 March 1890. Edith Alice Sheather mortgaged the land to the Bank of New South Wales on 4 March 1892. On 16 June 1894, Edith Alice Sheather, wife of Silas George Sheather, Parramatta, draper signed a Real Property Application for the whole grant. It was valued at £500. It was occupied partly by Robert Horwood of Macquarie Street and partly by Fuller's Lightning Printing Works (manager J Black). It was bounded on the west by land owned by the Union Bank of Australia and occupied by F Sweeny, Macquarie Street, Parramatta, and by Fuller's Lightning Printing Works (Figure 2). Robert Horwood was a publican and later an auctioneer. It is notable that the Sands Directory did not list him at this address. A Certificate of Title was issued to Edith Alice Sheather, wife of Silas George Sheather, Parramatta, draper, on 9 March 1895. It was mortgaged to the Bank of New South Wales on 8 September 1894. The 1895 detail survey showed two cottages facing Macquarie Street on this site (Figure 2.132).

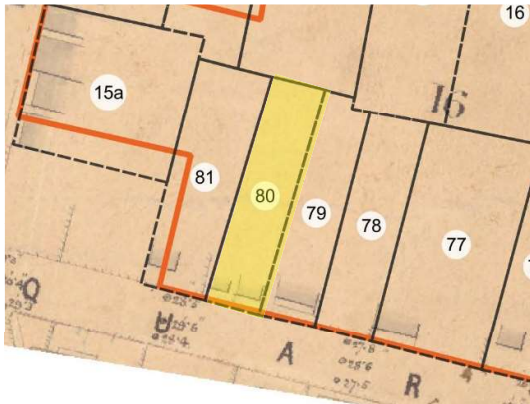


Figure 2.131 Detail from an 1855 survey plan of the street alignments that only shows the fronts of buildings. Part of at least one structure is within Lot 81 (Source: City of Parramatta Research and Collections)



Figure 2.132 Extract from Parramatta detail survey, sheet 18, 1895. (Source: SLNSW)

The mortgage was discharged on 29 May 1896. A mortgage to Kelso King, Sydney, gentleman, dated 5 June 1896 replaced it. That mortgage was discharged on 23 November 1899 and land was transferred to Frederick Sweeny, of Parramatta, coachbuilder on 30 November 1899. Frederick Sweeny operated a carriage works on this site, formerly occupied by WO Ward, from 1879 and for many years. Frederick Sweeny lived in Macquarie Street until his death on 20 October 1941. His two sons took over the family business. He also appears to have used Allotment 81 to the west for his works as well. He was previously listed at this approximate location in Sands Directories.

Frederick Sweeny mortgaged the land to Harrington Crichton McCulloch, Sydney, gentleman, on 23 November 1899 finally paying off the loan and receiving a discharge on 23 November 1904. On 24 August 1914, part of the land was transferred to the Cumberland Argus Ltd. At this stage, this allotment was cut into two parcels which shall be treated separately below.

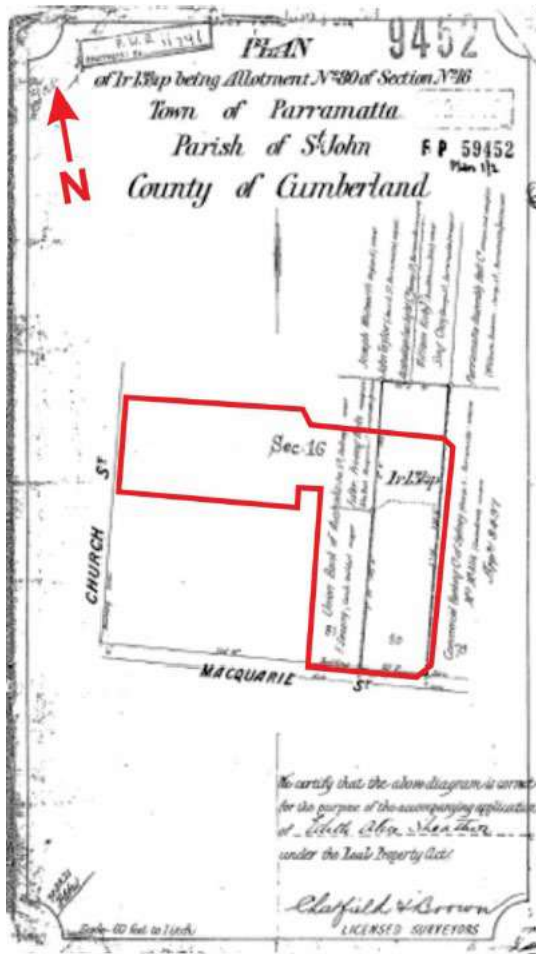


Figure 2.133 Survey plan accompanying Real Property Application 9452, 1895. (Source: NSW Land Registry Services, DP 59452, annotated by Casey & Lowe 2017, 48 Macquarie & 220–230 Church Streets, Parramatta, Archaeological Assessment, p 22)

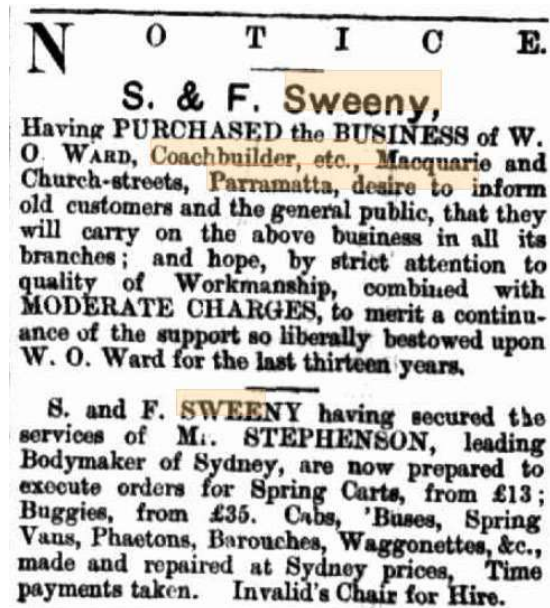


Figure 2.134 Advertisement stating that S and F Sweeny had purchased WO Ward’s coach building business at Macquarie and Church Streets. (Source: *Cumberland Mercury*, 12 April 1879, p 1)



Figure 2.137 Extract from the 1954 Parramatta detail survey, sheet 2711 (Lot 80 is highlighted yellow). (Source: Sydney Water Archives)

2.3.28 Northern part of Allotment 80

A new Certificate of Title for the northern part of Allotment 80, measuring 22½ perches, was issued to Cumberland Argus Ltd on 6 October 1914; the title diagram can be seen in Figure 2.134. On 19 June 1936, title was transferred to the new company named Cumberland Newspapers Ltd.

On 31 July 1952, it was transferred to Marcus Clark and Co Ltd. On 10 February 1955, part of the land was transferred to the Council of the City of Parramatta for Horwood Place. The title was transferred to GJ Coles and Co Ltd on 24 October 1956. Like the southern half of Allotment 80, it became the site of a Coles store.

Prior to construction of the Coles store, the site is shown in the 1954 detail survey (Figure 2.135) as comprising four structures constructed in brick, wood and galvanised iron, connected to the land to the west.



Figure 2.138 Coles Store and United Insurance Building, Macquarie Street, 1968. (Source: City of Parramatta Research & Collections, ACC209/016)

2.3.29 Allotment 79 Section 16—grant to Thomas Shadforth

A Crown Grant was made to Thomas Shadforth on 17 February 1841 of land that was originally leased to Charles Wood on 30 June 1823. It is not possible to identify this person as there were several Charles Woods in the colony at the time.

The 1836 map of Parramatta does not show any building on the subject allotment (Figure 2.137). However, there is a reference to a James Pike possibly associated with Macquarie Street, and presumably the same James Pike advertised in 1834 that he had opened a shop in Macquarie Street ‘opposite the Chapel’ (Wesleyan Chapel) and was selling ‘an assortment of well-selected goods’ including men’s, women’s and children’s clothing articles ‘and a variety of other articles too numerous to mention’.²¹³ There were no further newspaper advertisements for this shop. Pike appears to have been associated with Allotment 79, as he was listed in a memorial dated 21 January 1840, when Pike transferred the property via mortgage by demise to Thomas Shadforth for the sum of £300.²¹⁴

Pike’s name also appears in the following to let advertisement in the *Sydney Gazette*, which matches the land dimensions and location of Allotment 79:

*A brick-built cottage, in Macquarie-street, Parramatta containing a Drawing, Dining, and Four Bed Rooms; a Pantry, Cellar, and detached Kitchen, Coach House, and Two Stalled Stable; a well always containing water; a Piece of Ground in rear, well adapted for a Garden; the whole containing Fifty-Four Rods—Rent moderate.*²¹⁵

On 17 February 1841 Allotment 79 was granted to Thomas Shadforth for the sum of £78 and 7 shillings. The grant of this town allotment was advertised in the *Sydney Monitor* on 28 November 1840.²¹⁶

Thomas Shadforth was born in England in 1771(?) and became a career soldier, initially a lieutenant in the 47th Regiment (September 1798) then captain of the 57th Regiment (May 1802). Military service in Spain saw him promoted to major. In August 1819 he was promoted to lieutenant-colonel with the 57th Regiment. He arrived in Sydney in the *Mangles* in February 1826 with his wife and

daughter Frances. His two sons arrived separately in 1825 and 1835. Shadforth settled in New South Wales in 1831 at Raveswood at Mulgoa. After leaving the military he became a company director and a prominent businessman.²¹⁷

Shadforth conveyed the allotment (and other parcels of land) by lease and release on 1 and 2 November 1843 to his daughter, Frances Esther Stephen (formerly Frances Esther Shadforth), in trust, with Henry John Tudor Shadforth and Robert William Shadforth (trustees). Allotment 79 was described as being that 'piece or parcel of land lying and situate[d] on the north side of Macquarie Street in the Town of Parramatta' measuring 54 rods.²¹⁸

Brownrigg's map of 1844 shows two masonry buildings on the site and a wooden structure in the southern half of the allotment (Figure 2.138). In comparison, the 1840 to let advertisement comprises four structures—the house, coach house, detached kitchen and stable.



Figure 2.139 Detail from Johnstone's 1836 map—no structures are shown within Lot 79 on this plan. (Source: State Archives & Records, SA Map 4799 – originally P714a)

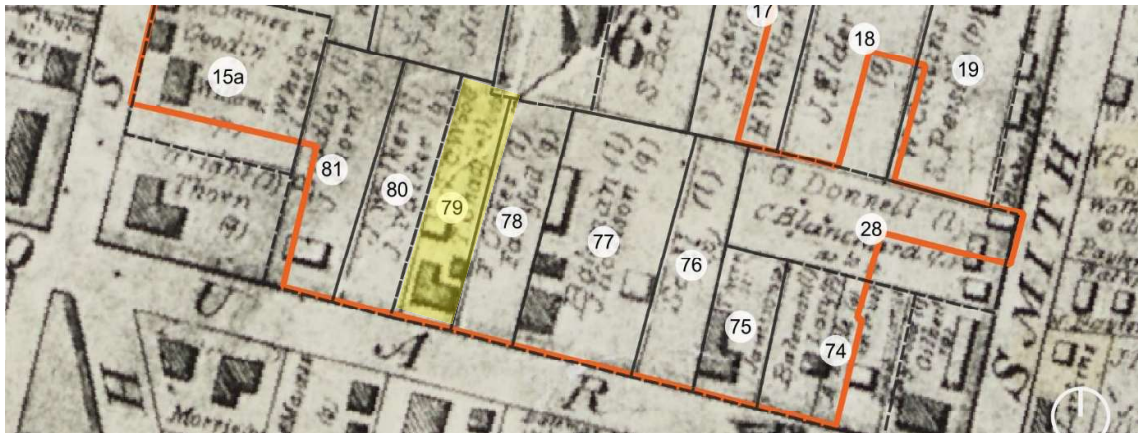


Figure 2.140 Detail from Brownrigg's 1844 plan showing a timber and two masonry structures within Lot 79.

From 1863 to 1875 the allotment was the subject of a change of trustees and more than one mortgage. On 3 April 1875 Edward Milner Stephen and Michael Metcalfe (trustees), with the concurrence of George Dunstan Huthwaite, Sophia Frances Huthwaite and Clara Stephens, conveyed the allotment on 3 April 1875 to John James Taylor of Parramatta, a butcher, for the sum of £260.²¹⁹ By this date the land was described as measuring 1 rood 14 perches.

Taylor conveyed the property on 21 April 1875 to Nicholas Weekes of Parramatta, a chemist, for £300.²²⁰ John Parsons junior, a telegraphic clerk of Parramatta, purchased the allotment on 15 March 1879 for the sum of £550.²²¹ Simultaneously Parsons mortgaged the land to Weekes.²²²

Nicholas Weekes transferred the mortgage on 3 August 1880 to Edward Terry on 3 August 1880. The following year John Parsons junior conveyed equity of redemption in the property on 30 July 1881 to his father, John Parsons senior.²²³ The mortgage was discharged and reconveyed to John Parsons junior on 13 March 1882.

In November 1882 LT Lloyd was named the official assignee of the insolvent estate of 'John Parsons, the younger, of Macquarie Street, carrier'.²²⁴ John Parsons senior, care of 'Martha Cottage (opposite Wesleyan Chapel, Macquarie-street)', notified the public in April 1883 that he authorised his son John Parsons junior to transact his business as a railway carrier and to collect and receive any moneys owing to him.²²⁵ John Parsons senior died three months later and the funeral moved from his home in Macquarie Street. In both of these references the subject home in Macquarie Street is likely to be the house and outbuildings on Allotment 79 purchased by John Parsons junior in 1879.

John Parsons junior continued to live in the residence after his father's death. The property was advertised for auction sale on 13 February 1884 and was described as:

That very desirable Town Property (adjoining RA Ritchie's Railway Carriage Manufactory, and in close proximity to Cumberland Mercury Office), having a frontage of 59 feet ¼ inches to Macquarie-street by an exceptional depth of 250 feet, upon which is erected a large substantial Brick Residence, containing Six Rooms, Kitchen, Pantry, etc, together with Six-Stall Stable, and other out buildings, large U.G. Tank, etc, etc.

*The property is securely fenced, and divided into several compartments, and is at present occupied by Mr John Parsons, railway carrier, and is in good repair.*²²⁶

Parsons appears to have continued to live in the house even though he and Stephen John Pearson sold the property to John Pratt of Parramatta, a produce dealer, on 9 September 1884 for the sum of £1250. The conveyance was registered on old system deed Bk 295 No 425. John Parsons of 'Macquarie-street, Parramatta' stated in a public notice in the *Cumberland Mercury* on 4 October 1884 that, contrary to rumours, he had not given up the railway carrying business and it was business as usual.²²⁷ John Parsons sold his business to J Paul and R Smiles by January the following year.

John Pratt conveyed the property as security on 26 September 1884 to Thomas Allwright Dibbs and Commercial Banking Company of Sydney to secure £1250.²²⁸ The 1885 Sands Directory listed 'J Parsons, carrier' in Macquarie Street adjoining the railway carriage works of RA Ritchie, which corresponds to Allotment 81. The following year John Pratt, a carrier, was listed at this location. The next occupant of the property was John Paul, a carrier and fuel merchant, who was listed between 1887 and 1890. It is not clear who occupied the site during the next decade, though the house and outbuildings are depicted on the 1895 detail survey (Figure 2.140). It is likely the property was leased to Thomas Jones, whose death was recorded in October 1897, the obituary stating 'Mr Thomas Jones (of the well-known firm of Jones Bros wood merchants, etc) of Macquarie Street, Parramatta'.²²⁹ Thomas Jones was in business with three or four of his brothers.

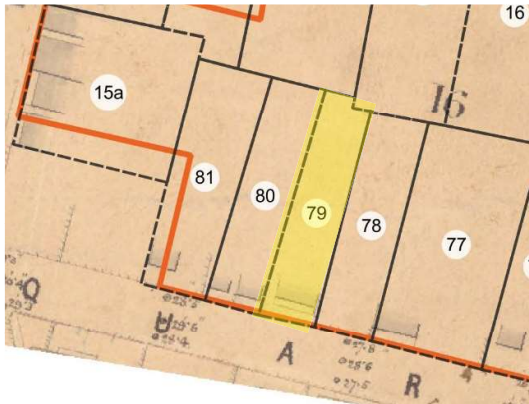


Figure 2.141 Detail from an 1855 survey plan of the street alignments showing buildings fronting the street. (Source: City of Parramatta Research and Collections)

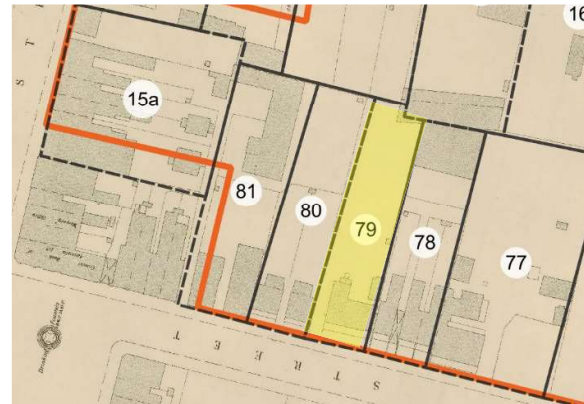


Figure 2.142 Extract from Parramatta detail survey, sheet 18, 1895. (Source: SLNSW)

On 11 July 1905, part Lot 79 Section 16, comprising 1 rood 10¼ perches, was conveyed to William Albert Jones of Parramatta, a merchant. It is possible he occupied the property by 1898 as he was listed at Macquarie Street when he injured his finger and hand using a saw.²³⁰ The 13 November 1901 edition of the *Sydney Morning Herald* reported that there had been two attempts to break into the home of ‘Mr Jones’ of Macquarie Street. Although not numbered, it is possible this was the house on Allotment 79.²³¹

The 1903 electoral roll lists William Albert Jones in Macquarie Street, describing him as a wood and coal merchant. The same year there is a business registration for Jones Brothers, wood and coal merchants at Macquarie Street, Parramatta, run by Edward James Jones and David Jones. Although Albert is not named, the shared surname and occupation suggests they were connected in trade.

The *Cumberland Argus and Fruitgrowers Advocate* reported on 6 December 1905 that the council assessed the brick house in Macquarie Street owned by Jones Bros at £316.²³² The house was apparently removed by 1906, as the rate book for that year describes Allotment 79 as ‘enclosed’ land leased to Albert Jones and owned by the Commercial Bank of Sydney. This entry does not accord with the land title, which indicates Jones was the owner. The Commercial Bank was probably the mortgagee.

William Albert Jones lodged a primary application to convert the site to Torrens title. The application did not proceed and was abandoned. Jones lodged a new application in July 1926, which was approved and registered on certificate of title Vol 3883 Fol 46. Sometime between 1884 and 1926 a small portion of land was excised, leaving the allotment measuring 1 rood 10¼ perches as shown in the title diagram (Figure 2.142). Coinciding with the real property application, the council approved an application for additions to the shed on Macquarie Street for Jones Bros.²³³

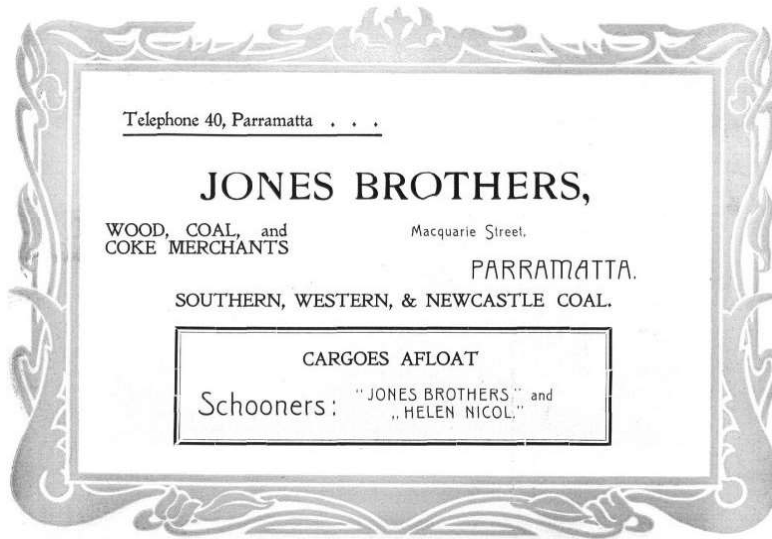


Figure 2.143 Advertisement for Jones Brothers, wood, coal and coke merchants, Macquarie Street, Parramatta. (Source: Hillier, RS c1905, *Beautiful Parramatta: Descriptive and Illustrative*, unpaginated)

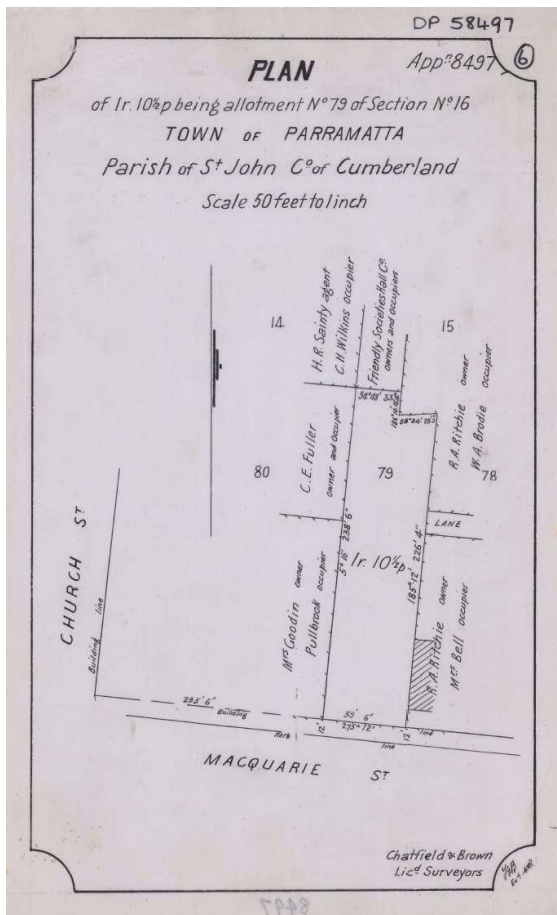


Figure 2.144 Survey plan of land accompanying primary application, originally designated 8497 but completed and approved as 13171 in 1926. (Source: NSW Land Registry Services, DP58497)



Figure 2.145 Detail from EW Searle's aerial view of Parramatta, c1935, showing sheds on the land formerly occupied by Jones Bros, a coal, wood and coke merchant, on Allotment 79. (Source: NLA, <http://nla.gov.au/nla.obj-141919607>)

Jones conveyed the property on 6 February 1937 to Broughton Barnabas O'Connor (1/3 share), John Shorter (1/3 share) and Stanley Thomas Moxham and Mary Agnes Moxham (1/3 share) as tenants in common.²³⁴

On 1 March 1945 the property was transferred to Cumberland Newspapers Ltd.²³⁵ In conjunction with adjoining land owned by the same company, Allotment 79 was conveyed to Marcus Clark and Company Limited.²³⁶ The site is depicted as vacant land in the 1954 survey plan (Figure 2.144). The following year Marcus Clark and Company Limited conveyed the land to the Council of the City of Parramatta to implement the 'New Street Proposal in the Parramatta Shopping Centre'.²³⁷



Figure 2.146 Extract from the 1954 Parramatta detail survey, sheet 2711 (Lot 79 is highlighted yellow). (Source: Sydney Water Archives)

2.3.30 Allotment 78 Section 16—grant to William Faithfull

Lot 78 Section 16, measuring 53 perches, was leased to Francis Oakes on 13 June 1823.²³⁸ According to Stewart's 1823 map (Figure 2.145) the allotment was vacant land. It was not yet built upon in 1836 (Figure 2.146).

Francis Oakes came free on the *Nautilus* in 1798. He was born in Foleshill, Warwickshire, in April 1770 and was a shoemaker by trade. As a member of the Congregational Church, he volunteered as an artisan missionary to go to the South Seas in the *Duff* in 1796. After two years stationed at Tahiti, he left the mission and abandoned his missionary work, arriving in Sydney in 1798. He accepted a grant of 100 acres (40 hectares) at Dundas. In September 1805 he was appointed chief constable for the district of Parramatta but was relieved of his duties when Governor Bligh was overthrown. He returned to England with Bligh to give evidence at Lieutenant Colonel Johnston's court martial. He returned to New South Wales in 1812 on the *Mary*.

On his return he was re-appointed chief constable to 1820, inspector of slaughtering houses (1812), clerk of the public market (1812), auctioneer (1814) and superintendent of the Female Factory (1814–22). He was also a farmer and baker. He married Rebecca Small in January 1806 and they had 14 children, seven sons and seven daughters.

He died at Parramatta on 5 February 1844, aged 74 years. His widow died there on 13 February 1883.²³⁹

Upon the payment of the quit rent of 20 years (£27 16 shillings and 6 pence), Town Allotment 78 was granted to William Faithfull of Richmond on 19 July 1838.²⁴⁰ The allotment was described as:

*Bounded on the West by a line three chains forth five links; on the North by a line ninety five links; on the East by a line to Macquarie Street three chains fifty by two links; and on the south by that Street ninety two links. Being the Allotment leased to Francis Oakes by His Excellency Sir Thomas Brisbane on 30th June 1823.*²⁴¹

This was the parcel of land transferred on 17 December 1831 from Samuel Leigh and George Erskine to William Faithfull [sic].²⁴² The description of the land matches the one in the 1838 grant. It is not known when Francis Oakes conveyed the lease to Leigh and Erskine, both of Parramatta, who were respectively a minister of the Wesleyan Church and active in the Wesleyan Branch Missionary Society. As Oakes was formerly a Congregational missionary, he may have become involved with the Wesleyans at Parramatta, who had their chapel opposite Allotment 81 in Macquarie Street.

William Faithfull was born in Hampshire, England, in 1774. He joined or was seconded to the New South Wales Corps and arrived in New South Wales on 14 February 1792 on the *Pitt*, aged 20 years, as servant to Captain Foveaux. He left the Corps in 1799 and was awarded a 25-acre land grant at Petersham. Foveaux presented him with a flock of sheep, a Bible and a pocket watch. William Faithfull became a farmer and grazier. He married Susannah Pitt at St John's Church, Parramatta, in November 1804 and they had four children; three survived to adulthood. He was later granted 1000 acres at Liberty Plains (Homebush). He sold off some of this land and was given 600 acres near Minto, and also acquired 500 acres near Richmond. His wife died in 1820 and he remarried Margaret Thompson, with whom he had two more children. He was widowed again in 1842, marrying Maria Bell in June 1843.²⁴³ He died on 16 April 1847 at his residence Lake Villa, Richmond, aged 73 years.

The allotment was undeveloped in 1844 when Brownrigg surveyed the town of Parramatta. The plan names F Oakes as the lessee and Faithful [sic] as grantee. Probate of his estate was granted to

William Pitt Faithfull of Springfield, Goulburn (his eldest son), George Matcham Pitt of Richmond and George Faithfull of Wongaratta (his third son).

William Faithfull of Richmond died on 16 April 1847 and devised the property to Helen Eliza Wilshire, wife of Thomas Matcham Pitt Wilshire. Accordingly, the land was conveyed to Helen Eliza Wilshire. Thomas Matcham Pitt Wilshire and Thomas William Faithful Wilshire were party to the conveyance. Helen died intestate in 1850. Her husband died two years later on 3 March 1852. Their eldest son and heir at law, Thomas William Faithfull Wilshire, survived his parents, dying on 4 September 1877 aged 31 years at his residence, Westgate Waverley.

In accordance with the late Thomas William Faithfull Wilshire's will, on 11 September 1877 the land was conveyed to Patrick James Clark and Eugene Croft, trustees of the will. Thomas's widow, Jane Brabazen Wilshire, following her marriage to Randolph Want, appointed John Lowry Ruthven in place of Patrick James Clark, who had resigned from the position. Probate of the will was granted on 5 October 1878 to Eugene Croft. Following his resignation, Jane Brabazen Want appointed Frederick Thomas Humphery in his place.²⁴⁴

On 9 December 1880 the trustees of the estate of the late Thomas William Faithfull Wilshire sold Allotment 78, with the agreement of Randolph Charles Want and Jane Brabazen Want, to Robert Adam Ritchie of Parramatta for the sum of £280.²⁴⁵ This parcel of land was consolidated with Lot 15 in George Street to form an allotment with two frontages. For further discussion of the development of the site see Section 2.2.8.

About the time Ritchie vacated the property (Lots 15 and 78), a terrace of three two-storey houses was erected on the Macquarie Street frontage. These houses are visible in a 1931 photograph (Figure 2.150), Frank Hurley's photograph from about 1940 (Figure 2.151) and a c1940s aerial photograph (Figure 2.152).

On 2 November 1920 the trustees of the estate of the late Robert Adam Ritchie conveyed Lots 15 and 78 to Karl William Huenerbein for £2050.²⁴⁶ Huenerbein conveyed part of Lot 78 comprising the three terrace houses on 13 September 1922 to his wife, Maria Atherton Huenerbein.²⁴⁷ She owned the property until 8 February 1950 when it was conveyed to Southern Produce and Livestock Company Pty Ltd.²⁴⁸ Four years later, on 15 December 1954, the land was transferred to the Council of the City of Parramatta. One rood 21¾ perches was conveyed as Lot 1 to Manufacturers Mutual Insurance Ltd on 17 December 1956 and registered 25 July 1957.²⁴⁹ The title diagram associated with the transfer of Lot 1 indicates the three terrace houses were still present on the land fronting Macquarie Street (Figure 2.154). By 1958 the houses on the site were demolished and the land was turned into a parking area (as shown in Figure 2.155).

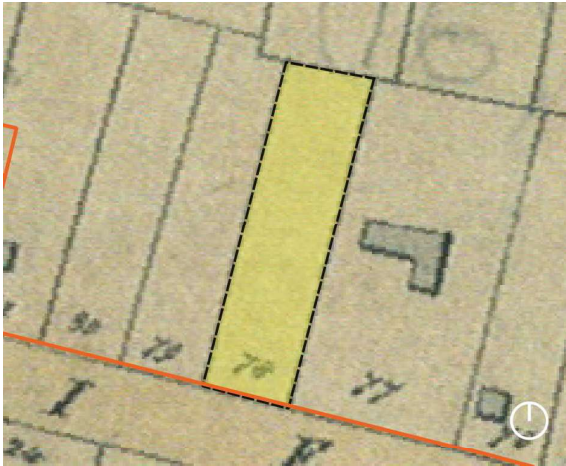


Figure 2.147 Detail from Stewart's 1823 plan that shows Lot 78 (shaded yellow) as undeveloped land. (Source: SLNSW)



Figure 2.148 Detail from Johnstone's 1836 map that shows Lot 78 (shaded yellow) as undeveloped land. (Source: State Archives & Records, SA Map 4799 – originally P714a- annotated by Casey & Lowe 2017, 48 Macquarie & 220–230 Church Streets, Parramatta, Historical Archaeological Assessment, p 19)



Figure 2.149 Detail from Brownrigg's 1844 plan showing Lot 78 (shaded yellow) as undeveloped land. (Source: SLNSW)

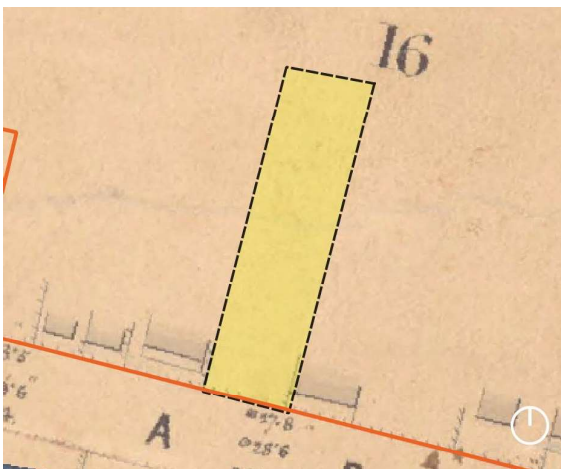


Figure 2.150 Detail from 1855 plan of street alignments showing Lot 78 (shaded yellow). This plan only recorded the building frontages along the street alignment. (Source: City of Parramatta Research and Collections)



Figure 2.151 Extract from Parramatta detail survey, sheet 18, 1895. (Source: SLNSW)



Figure 2.152 Terrace houses adjoining Margaret Houison's home, Macquarie Street, by EG Shaw, 1931. (Source: State Library of NSW, a779001h)



Figure 2.153 Detail from aerial photograph of Parramatta, looking south over the rear of properties in Macquarie Street, c1940. (Source: National Library of Australia)



Figure 2.154 Detail from aerial view over Section 16 showing three terrace houses on Lot 78 fronting Macquarie Street, c1940. (Source: National Library of Australia)



Figure 2.155 Title diagram of part of Allotment 78, September 1922. (Source: NSW Land Registry Services)

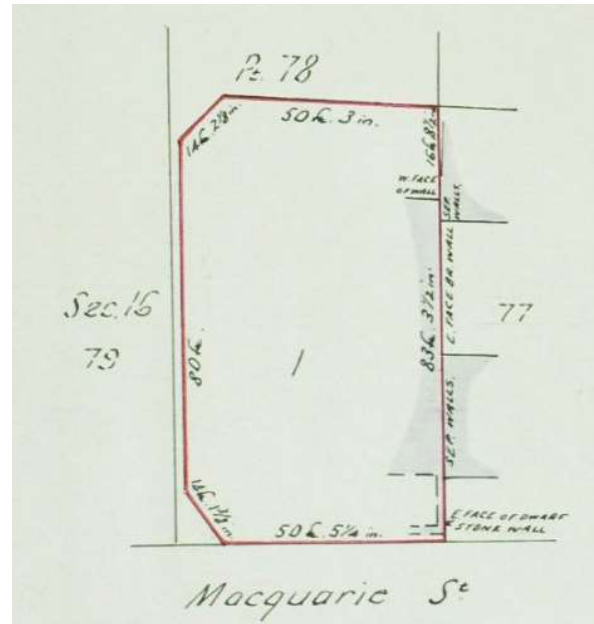


Figure 2.156 Title diagram of Lot 1, formerly part of Allotment 78, July 1957. (Source: NSW Land Registry Services, CT Vol 7329 Fol 150)



Figure 2.157 Horwood Place between Macquarie and George Streets, 1958. Kia Ora (James Houison's home) is at the far right. Part Allotment 78, in centre, is occupied as a car park. (Source: City of Parramatta Research & Collections)

2.3.31 Allotment 77 Section 16—grant to James Houison

Allotment 77 Section 16 was leased to William Batman (Bateman) on 30 June 1823. According to the 1823 Stewart map, there was an L-shaped building on the centre of Lot 77 on a large block. This matches a draft plan of this section from about the same date. The land was described as:

All that piece or parcel of land, lying and situate[d] on the North Side of Macquarie Street in the town of Parramatta containing...One Hundred and three and one half rods bounded on the west by a line 8 chains 52 links, on the north by a line 1 chain 79 links, on the east by a line to Macquarie Street 3 chains 61 links and the south by that street 1 chain 70 links.²⁵⁰

William Batman was sentenced on 17 February 1796 to 14 years and arrived in the colony on the *Ganges* in 1797. He was married to Mary Mobbs in London in 1794 with the first of their children, Maria, born in London on 29 June 1796. Their first son, Robert, was born on 1 March 1798. By 1801 the family were living in a wattle and daub cottage on what was to become Allotment 77 Section 16 on the site of 64 Macquarie Street, Parramatta. On 21 January 1801 their second son John was born at Parramatta. The family lived in Macquarie Street for many years.

By 1810 the cottage in Macquarie Street housed a large family comprising William (44) and Mary (39), Maria (14), Robert (12), John (9), Henry (7), William (4) and Charles (2). William was granted his ticket-of-leave in 1810 and established a timber yard at Parramatta. Mary and William's five sons and daughter were brought up at Parramatta and baptised at St John's in 1810, the year William's sentence expired.²⁵¹

On 8 August 1822 William Batman was named in the Colonial Secretary's Papers on a list of persons receiving an assigned convict.²⁵² The following year he was listed on the return of Parramatta allotments, with his allotment measuring 103½ square perches.²⁵³

The 1828 Census named William Batman as a householder at Parramatta who owned a total of 70 acres of land. He was described as a 63-year-old timber merchant and Protestant, free of servitude, who came on the *Ganges* in 1797. His wife Mary was 62 years old and recorded as having come with her husband on the *Ganges* in 1797. A son, also named William, was 22 years old and born in the colony. The household also included James Gillman, 45 years old, who was transported for life and came on the *Atlas* in 1816; he was a butcher by trade and described as Protestant. Also listed in the household was convict labourer John Davis, 45 years old, who came on the *Active* in 1791; he was also described as Protestant.

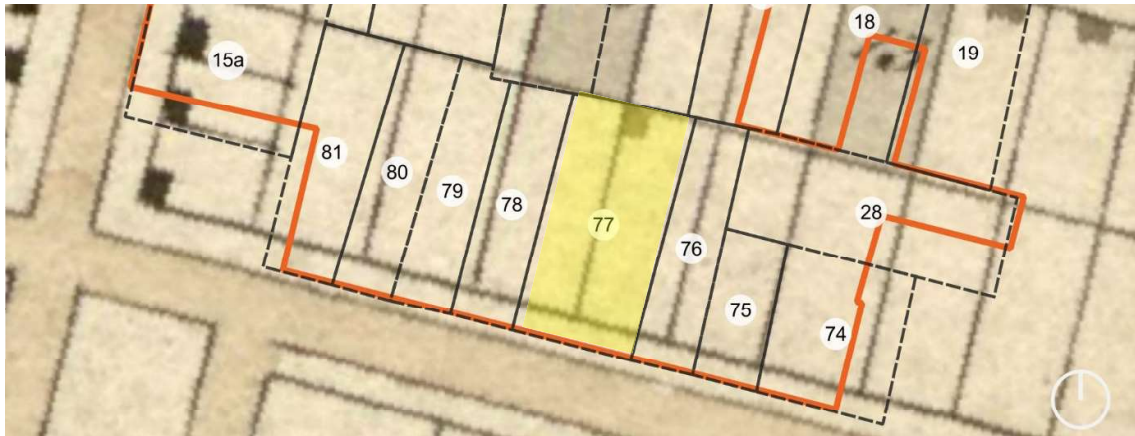


Figure 2.158 Detail from Evan's 1804 plan showing a structure at the northern edge of Lot 77. (Source: The National Archives UK)

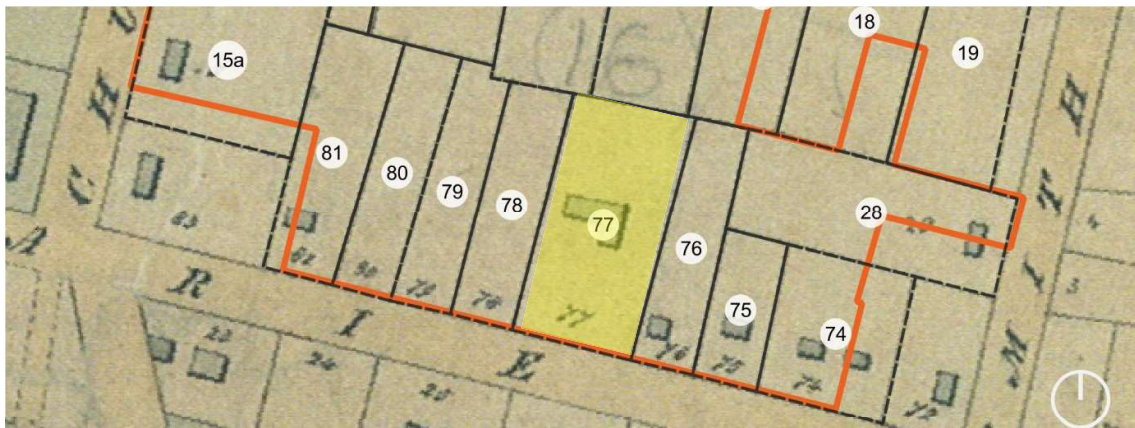


Figure 2.159 Detail from Stewart's 1823 plan showing an L-shaped building in the centre of Lot 77. (Source: SLNW)

William Batman died on 30 December 1833 aged 68 years. He gave to his wife Mary:

*my dwelling house and all the ground and all the outhouses and all other offices appertaining there, to with all my goods and chattels, my horses and all my horned cattle and all bonds together with every kind of property whatsoever to me appertaining only what I have bequeathed to my son Robert Batman aforesaid.*²⁵⁴

According to old system deed Bk E No 960 dated 29 April 1835, the lease was assigned by mortgage to James Wright of Sydney, a brewer, for £55/12. The allotment was described as:

*All that piece of parcel of land lying and situate[d] on the North side of Macquarie Street in the Town of Parramatta in the Colony of New South Wales containing by admeasurement 103 and one half Rods bounded on the West by a line three chains fifty two links on the North by a line one chain 79 links on the East by a line to Macquarie Street three chains 61 links and on the South by that Street one hundred and seventy links as the same is comprised in a certain Demise or lease mentioned and all erections etc.*²⁵⁵

The following year, on 16 March, Mary Batman conveyed the leasehold property to James Wright, Mary Bateman, James Houison, Hugh Brodie and Archibald Craig for £320.²⁵⁶ The building shown on

the 1823 map is extant on the partly damaged 1836 map. The leasehold was transferred on 11 February 1839 to James Houison for five shillings.²⁵⁷ Nearing the end of the 21-year lease, James Houison successfully applied to have the allotment granted to him. Allotment 77 Section 16, measuring 2 roods 23½ perches, was granted to James Houison and his heirs on 30 June 1840 for £54/6/9.²⁵⁸ This was the lot originally leased to the late William Bateman by Governor Brisbane on 30 June 1823.

In about 1842 James Houison built a new house on the allotment as his own residence. He lived there for several years. The house was built closer to the street frontage in front of William Batman's cottage. On the 1844 map of Parramatta there are two masonry buildings and two wooden buildings on the allotment (Figure 2.158). The buildings on the 1844 plan do not align with those recorded on the 1823 plan. It is unclear from the records whether Houison demolished the earlier Bateman cottage or not. The family lived in the house until 1865 when James Houison moved to Nairn Cottage on Hawkesbury Road, Westmead. The house on Allotment 77 was occupied by a succession of tenants including Josepha Beames in 1865, George Oakes MLC (1869–70), Dr Robert Kampala Ratter (1871), James Smith (1889) and James S Gribbin (1895). Members of the Houison family had returned to live in the house in Macquarie Street by 1899 as Ann Houison, the widow of James Houison senior, died at the residence on 12 May.²⁵⁹ Her daughter Margaret Houison was named the principal householder in the 1901 Census, with two males and three females in residence.

The 1895 detail survey (Figure 2.159) shows several structures on Allotment 77 with the main house along the street frontage forming a U-shape with a small rectangular structure immediately behind on the western boundary of the property. There are verandahs on three elevations of the house. There are two tanks or wells, one small and the other larger. On the eastern half of the land are three other buildings mostly within the southern portion of the allotments. The southeastern corner of the property appears to be enclosed with a fence with pedestrian and vehicular gates along the Macquarie Street frontage. The house and front fence is shown in a c1903 photograph at Figure 2.160.

Margaret Houison's death on 22 February 1930 severed the family's connection with the property. She was a daughter of James Houison and was reportedly born at the rear of the house. She was 93 years old and was survived by eight children, four sons and four daughters. She left a life estate in the property to Jessie Ann Cretnay, who died later the same year on 22 August 1930. Following their respective deaths, the property was advertised for sale. A feature article in *The Sun* on 8 March 1931 reported on the upcoming sale:

*The property is situated in Macquarie Street, Parramatta was originally granted to Batman's father. He sold it later, and the purchasers sold it about a century ago to Mr James Houison. He built a fine old colonial home upon it, and this building, which is still in an excellent state of repair, is one of the best known in the town. It is built of bricks of the small type, which were popular a century ago ... It is of two stories, and a great stone stairway lends from the lower to the upper story.*²⁶⁰

The house and land are described in more detail in the auction sale advertisement (Figure 2.173). The significance of the site as the birthplace of John Batman created interest in the property and the upcoming sale in 1932. Several photographers photographed Kia Ora (James Houison's home) and the building to the rear believed to be William Batman's cottage (Figure 2.160, Figure 2.161, Figure 2.162, Figure 2.163, Figure 2.164, Figure 2.165, Figure 2.166, Figure 2.167 and Figure 2.173).

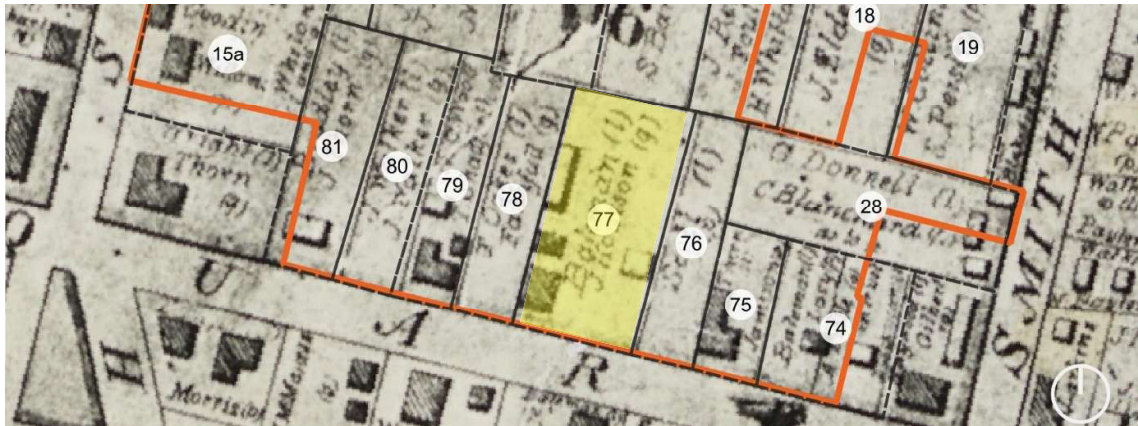


Figure 2.160 Detail from Brownrigg's 1844 plan showing two masonry and two timber structures on Lot 77. (Source: SLNSW)



Figure 2.161 Extract from Parramatta detail survey, sheet 18, 1895. (Source: SLNSW)



Figure 2.162 Site of the birthplace of John Batman on Macquarie Street, Parramatta, c1903. The house was built on the western portion of Lot 77. Lot 76 is to the far right of this view. (Source: State Library of Victoria, nc001228)



Figure 2.163 View in Macquarie Street looking west, showing Kia Ora, James Houison's house of c1842. Lot 76 is behind the fence on the far right. Photograph by EG Shaw, year unknown. (Source: State Library of NSW)



Figure 2.164 Rear view of Margaret Houison's house, Macquarie Street, 1931, photographed by EG Shaw. (Source: State Library of NSW)



Figure 2.165 Rear view of Margaret Houison's house, Macquarie Street, 1931, photographed by EG Shaw. (Source: State Library of NSW)



Figure 2.166 William Batman's residence, Macquarie Street, Parramatta. (Source: State Library of NSW)



Figure 2.167 'William Batman's residence, Macquarie St, Parramatta, NSW,' 1931–1937. (Source: State Library of Victoria, nc001232)



Figure 2.168 Margaret Houison's home, 54 Macquarie Street, Parramatta, 1931, photographed by EG Shaw. (Source: State Library of NSW)



Figure 2.169 *The Home of James Houison, Macquarie St, Parramatta 1842*, watercolour by James MacNally, 1932. (Source: City of Parramatta Research & Collections)

2.3.32 Allotment 76 Section 16—grant to James Houison

Lot 76 of Section 16 was advertised for sale as a town lot on 3 November 1858 and sold to James Houison on 9 February 1859. This allotment was previously leased to William Scott on 30 June 1823 as a parcel of land on the north side of Macquarie Street measuring 51½ rods. This allotment is depicted on Stewart’s map of Parramatta in 1823 as containing a small square masonry building central to Macquarie Street (Figure 2.168). It is also shown on a similar draft plan about the same time. The building is extant on the 1836 survey plan. When Brownrigg surveyed the Town of Parramatta in 1844 (Figure 2.169 the building on Allotment 77 had been removed and the site was now vacant land leased to Scott.

William Scott, who came to the colony in 1805 as a convict on the *Tellicherry*, was listed in the 1828 Census in the district of Parramatta. He was described as a Protestant labourer, 52 years of age. Living with him was his 11-year-old daughter, Rose, who was born in the colony. A William Scott is listed in the 1841 Census, described as over 60 years old and the sole occupant of a residence in Parramatta. Whether this is the William Scott who was the leaseholder of Lot 76 is not certain. The building depicted in 1823 was not shown on Brownrigg’s plan in 1844. It is not known what happened to this William Scott. His daughter Rose, also known by the names Rosanna Blake and Rosanna Tailby following her marriage in 1832, died in the Parramatta Lunatic Asylum in 1860. Her death certificate named her father as surname Scott, formerly of Macquarie Street.

It appears that Lot 76 did not sell; it reverted to the government. On 3 November 1858 the allotment was advertised for sale as a town lot. While the allotment plan does not show any building (Figure 2.170), the 1855 survey plan shows a structure small structure close to the street frontage (Figure 2.171). The lot was sold to James Houison of Parramatta and registered on 9 February 1859. It measured 1 rood 9½ perches. He had built a brick house on the adjoining land (Allotment 77) in about 1842 (64 Macquarie Street). By the date of this grant Houison had moved out of this Macquarie Street house and was living at Westmead. The 1895 detail survey plan shows the earlier building had been demolished by this date (Figure 2.172).



Figure 2.170 Detail from Stewart’s 1823 plan showing a single structure with Lot 76 (shaded yellow). (Source: SLNSW)

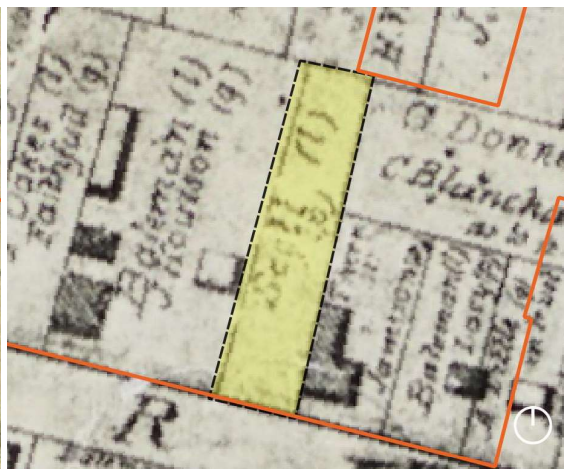


Figure 2.171 Detail from Brownrigg’s 1844 plan showing Lot 76 (shaded yellow) as vacant land. (Source: SLNSW)

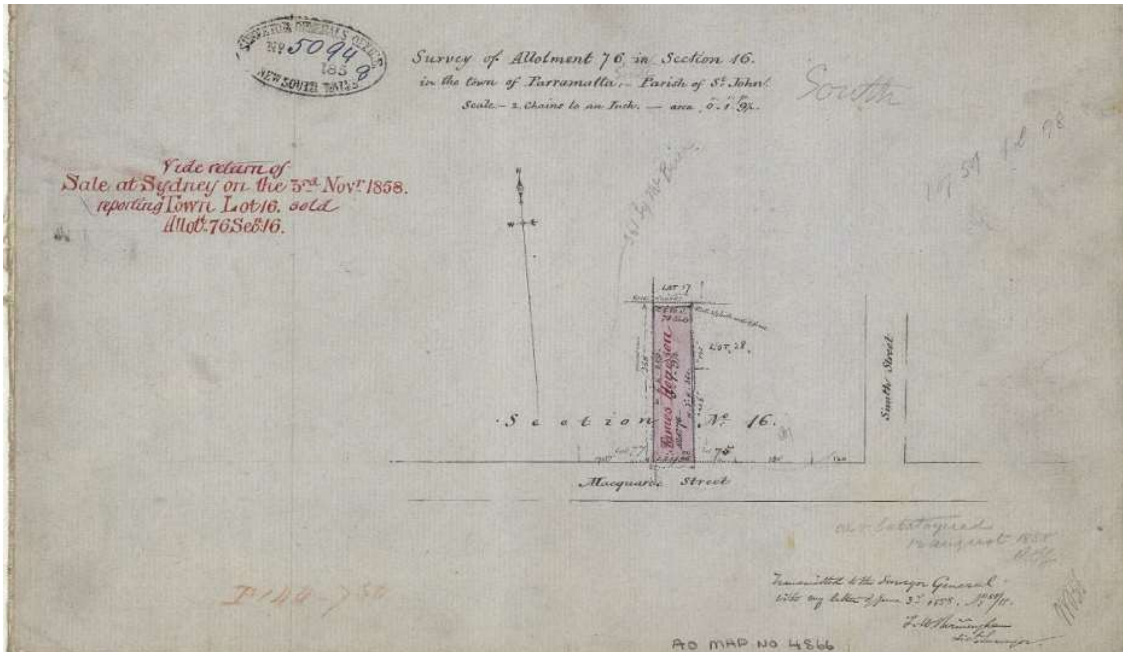


Figure 2.172 Survey of Allotment 76 Section 16, 1858. (Source: NSW Land Registry Services)

The 1906 rate book misnumbers Allotment 76 as 75 and mistakenly names William Mory as owner of the ‘enclosed land & sheds’, valued at £/16 annually. Contrary to this listing, the land remained in the ownership of the Houison family until the early 1930s.

For the later development of Allotment 76 in conjunction with Allotment 77 see Sections 2.3.34, 2.3.35 and 2.3.36.

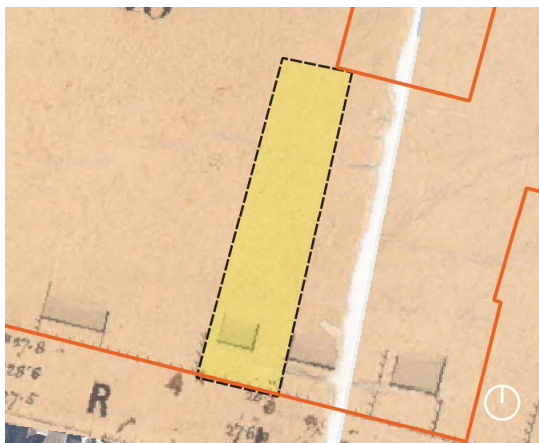


Figure 2.173 Detail from 1855 plan of street alignments showing Lot 76 (shaded yellow). This plan only recorded the building frontages along the street alignment. (Source: City of Parramatta Research and Collections)

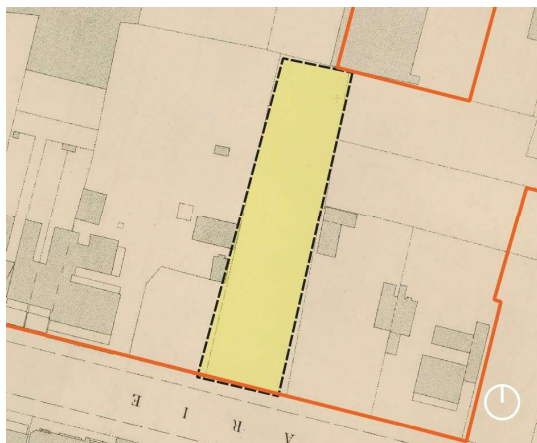


Figure 2.174 Detail from Parramatta detail survey, sheet 18, 1895 showing Lot 76 (shaded yellow). (Source: SLNSW)

2.3.33 Allotments 76 and 77, Section 16

In June 1930, William Smith Deane, Cecil Arthur Houison and William James Hubert Fairclough lodged an application to convert Allotments 77 and 76 to Torrens title. The land (including all improvements) was valued at £2500 and was in the occupation of Jessie Ann Cretnay as a life tenant.

The consolidated allotments, measuring 3 roods 35¾ perches, was registered on certificate of title Vol 4463 Fol 148 on 20 January 1931.²⁶¹ The property was advertised for auction sale on 23 September 1931. The advertisement (Figure 2.173) contained a brief description of the property, which comprised the 'old brick residence and outbuildings' and a sizeable parcel of land.

In 1933 Deane, Houison and Fairclough subdivided the property into three allotments, A, B and C, in the Miscellaneous Plan of Subdivision (RP) 24807. Lot A, the westernmost portion of the subdivision (Figure 2.176), was conveyed to William Watt of Parramatta, a retired dairyman, on 10 November 1933.²⁶² This is the present site of Kia Ora, 62–64 Macquarie Street.

Lot B, the central portion of the subdivision, was conveyed on 12 April 1934 to Frank Alexander Henderson of Homebush, a radio dealer (Figure 2.177).²⁶³ The title diagram shows part of a structure halfway along the eastern boundary with Lot C.

Lot C, the easternmost portion of the subdivision, was conveyed to Sidney Smith on 19 June 1934.²⁶⁴ This allotment is shown in the title diagram (Figure 2.178) comprising 1 rood 9 ½ half perches of land.

AUCTION SALE

On account of EXECUTORS of MISS **MARGARET HOUISON** Deceased.
PARRAMATTA. PARRAMATTA.

EXTENSIVE AREA OF LAND in the CENTRE OF MACQUARIE STREET;
Together with old BRICK RESIDENCE and Outbuildings, so long occupied by
the late Dr. and Miss **Houison**, known as No. 54.

THE TITLE IS TORRENS.

The land has an extensive frontage of 180 feet 11 inches to the northern side
of MACQUARIE STREET, by depths of 235 and 242 feet; the rear boundary,
having a width of 144 feet 5 inches, adjoins the ROXY THEATRE property.

**W. F. JAGO, in conjunction with G. GARLAND, will offer the above at PUBLIC
AUCTION.**

ON THE GROUND, MACQUARIE STREET, PARRAMATTA,

Friday, September 2nd, at 11.30 a.m.

Messrs. Deane and Deane, of 33 Rowe-street, Sydney, are Solicitors to the Estate.

Figure 2.175 Auction sale notice for the Houison house, Macquarie Street, Parramatta. (Source: *Cumberland Argus and Fruitgrowers Advocate*, 18 August 1932, p 5)

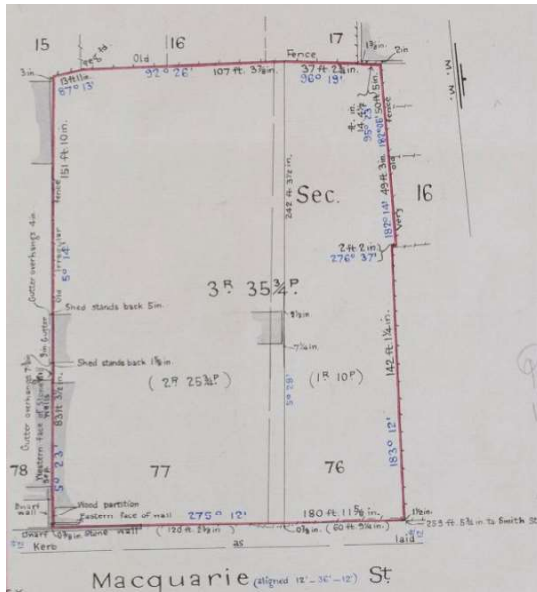


Figure 2.176 Title diagram on CT Vol 4463 Fol 148, January 1931. Shows the brick structure in the centre of land marking the western alignment of Lot 77, with Lot 76 to the east and structures along the common boundary to west with Lot 78. (Source: NSW Land Registry Services)

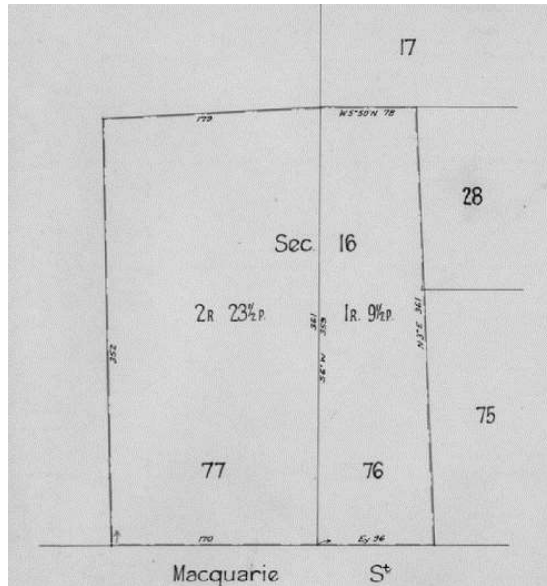


Figure 2.177 Primary Application Search Sketch 31068 comprising Lots 76 and 77 of Section 16. Consolidated on Vol 4463 Fol 148. (Source: NSW Land Registry Services)

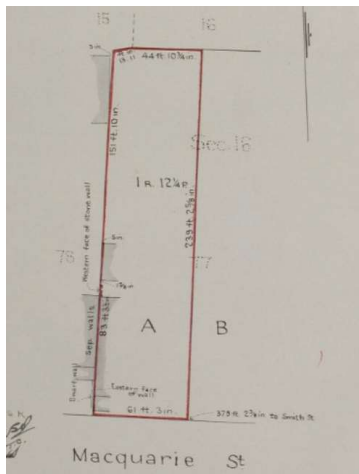


Figure 2.178 Lot A of resubdivision of Allotment 77, 12 April 1934. (Source: NSW Land Registry Services, CT Vol 4623 Fol 149)



Figure 2.179 Block plan of Lot B of resubdivision of Allotment 77, 1934. (Source: NSW Land Registry Services, CT Vol Fol)

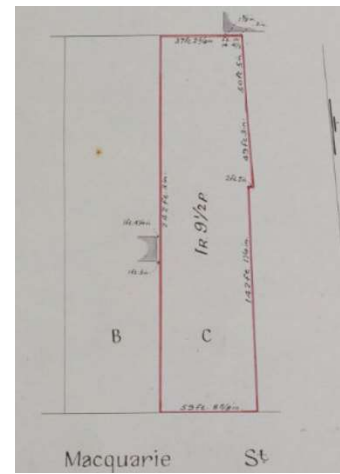


Figure 2.180 Lot C of resubdivision of Allotments 76 and 77, July 1934. (Source: NSW Land Registry Services, CT Vol 4638 Fol 125)

2.3.34 Allotments 76 and 77—Lot A

Lot A comprised 1 rood 12 ¼ perches of land and contained the Houisons' house and some of the outbuildings, including the wattle and daub cottage built on Allotment 77 by William Batman in the 1820s.

William and Jessie Aitken Watt were listed at 54 Macquarie Street (now 62–64 Macquarie Street) in the electoral rolls from 1933. William Watt died in 1943. His widow, Jessie Aitken Watt, continued to live in the house until 1952 when she sold it to Manufacturers Mutual Insurance Ltd.²⁶⁵ The *Cumberland Argus* reported on 12 May 1954 that Manufacturers Mutual Insurance 'has almost completed conversion of an old colonial home in Macquarie Street for administrative departments. These alterations have been assessed at an amount over £13,000'.²⁶⁶ *The Sun* reported that the conversion works were designed by architects Buchanan & Felton, who 'have gone to great lengths to see that the building retains all the dignity of the original structure'.²⁶⁷

The *Cumberland Argus* gave a detailed description of the restoration project:

The architects managed to combine the old and the new by using bright colours and soft pastel tonings in the general colour scheme.

The interior of the remodelled building is dominated by a magnificent spiral stone-staircase, a beautiful example of the skill of tradesmen whose hammers and chisels have been silent and still for almost a century.

During the restoration, hand-made nails used in the original construction were discovered, and many other interesting relics.

A harmonious contrast has been achieved with the new supplementary building at the rear of the main structure. This is the Medical Clinic operated by the Manufacturers' Mutual as part of its service in connection with Workers' Compensation Insurance.

*It incorporates some of the very latest architectural ideas, making full use of light, air and spacious effect.*²⁶⁸

The northernmost portion of the allotment was subdivided, and Lot AX transferred to the Council of the City of Parramatta on 18 January 1957. This portion now forms part of the Horwood Place car park and roadway.²⁶⁹

The residue of Lot C was transferred to a new certificate of title on Vol 8416 Fol 166 as Lot AY comprising 22¼ perches. An office building was erected on the northernmost part of this land and extended to the allotments either side. Houison's cottage was retained on Lot AY, which is known as 62–64 Macquarie Street.

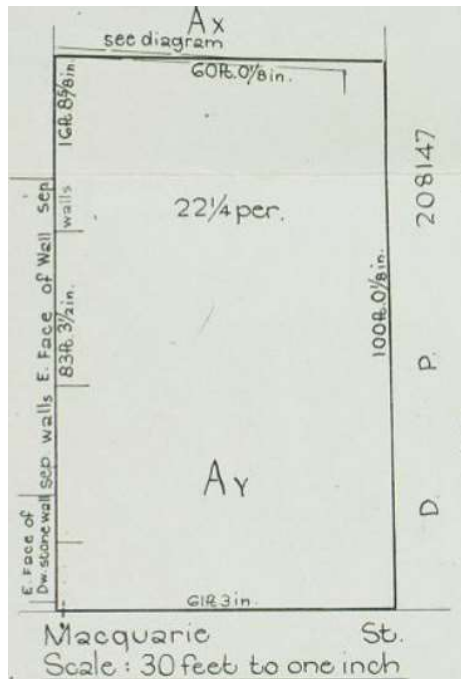


Figure 2.181 Title diagram on CT Vol 8416 Fol 166, being 64 Macquarie Street, December 1962. (Source: NSW Land Registry Services)

2.3.35 Allotments 76 and 77—Lot B

Frank Alexander Henderson built a residence on the site, which was then numbered 56 Macquarie Street. He and his wife, Mabel Edith Henderson, are listed at this address in the 1935 electoral roll. Henderson conveyed the property on 16 June 1936 to William James Morey of Parramatta, a chemist.²⁷⁰

Morey conveyed the property on 10 November 1939 to Brian Russell Morey of Parramatta, a medical practitioner, and Gwenneth Hislop Morey, his wife, as joint tenants.²⁷¹ This formalised a prior living arrangement, as Brian and Gwenneth Morey were listed at this address in 1936. Dr Morey moved into the house after four years travelling in Europe. Soon after moving into the house on Lot C, the *Cumberland Argus and Fruitgrowers Advocate* reported:

*Dr Brian Morey of Macquarie Street, Parramatta, while tending his carnations last week, came across and unfamiliar coin about the size of a shilling. Close scrutiny revealed that it was a farthing minted in 1799. Maybe it was once in the possession of John Batman, the founder of the Port Phillip settlement that is now Melbourne, who in 1880 [sic] was born in the vicinity of where Dr Morey's surgery now stands. The tomb of William Batman, father of John, is in St John's cemetery, Parramatta and an inscription tells that he died in March 1833 aged 68 years.*²⁷²

They continued to live in the property, renumbered as 68 Macquarie Street, for many years. In October 1947 the Moreys advertised for a housekeeper for a 'Dr residence, Parramatta', offering good conditions and other help.²⁷³

Brian and Gwenneth Morey were listed at 68 Macquarie Street until 1954. It is not known who lived in the house after this date. The Moreys moved to Pennant Hills Road, Carlingford, by 1958.

In November 1962 an application was lodged to subdivide the land into two allotments. DP 208147 was registered on 21 February 1962. A new certificate of title was registered for Lots 1 and 2 DP 208147 as Vol 9134 Fols 18 and 19.

New Zealand Insurance became the registered proprietor of Lot 1 DP 208147 and lodged a successful application to the Council of the City of Parramatta in August 1966 to erect additions to 68 Macquarie Street valued at \$2500.²⁷⁴ A newspaper article indicates that a new social services regional office in Parramatta was officially opened in the first week of September 1967 in the 'newly-built' New Zealand Insurance Company building at 68 Macquarie Street.²⁷⁵

2.3.36 Allotments 76 and 77—Lot C

Lot C, the easternmost portion of the consolidated allotment, approximating the original measurement of Allotment 77, was conveyed in June 1934 to Sidney Smith of Parramatta, a florist and seedsman.²⁷⁶ This lot measured 1 rood 9½ perches.

A building of flats was constructed on the allotment at this date. In 1953 Sidney Smith lodged a successful application to the council for shop additions to flats at 70 Macquarie Street estimated to cost £7500.²⁷⁷ The builder was SJ Wood & Co. The *Cumberland Argus* reported in July 1953 that a 'post-war construction record for Parramatta was set last week when 80 tons of concrete was poured during work on the erection of a modern shop and office block in Macquarie Street'. The article continues:

The concrete was poured with special equipment into suspended beam framing of the first-floor slab and cantilevered concrete awning of the building. The work was completed by SJ Wood and Company, one of Parramatta's largest builders. The building will be known as Smith House.

On a restricted site and using one hoist, the 80 tons of concrete was poured continuously for 7 ½ hours. The continuous process was used in the interest of strength.

Large crowds watched the operations.

The reinforced concrete awning is the first of its kind erected in Parramatta. The building is creating much interest in the district and is the first project in a move to open up a new shopping and business administrative centre here.

When completed, Smith House will consist of a three-storied building with two large shops on street level, and administrative offices on two floors above.

The building has been designed by Parramatta architect, Mr. Bruce Smith, who has introduced many advanced ideas. Full advantage has been taken of the southern aspect to give maximum natural lighting to promote business efficiency. The shop fronts are designed on latest American developments making the whole shop serve as a display window, giving maximum use of space.²⁷⁸

The new building known as 70 Macquarie Street was described later the same year as a 'most modern shop and office block [and one that] features many new advanced architectural features'.²⁷⁹

In June 1953 Sidney Smith conveyed to his wife, Nellie Lacy Smith, an undivided one-third share in the property as a tenancy in common, retaining the remaining two-thirds share for himself.²⁸⁰ The Smiths leased part of the premises in November 1954 to George Henry Thomas, Lee Thomas and Arthur Thomas, master builders, and Dorothy May Thomas, all of Parramatta. The Ready Furniture

Pty Ltd leased part of the building in September 1954. WA Flick & Co Pty Ltd leased a room on the ground floor in January 1957.

Lot C was resubdivided into two allotments, D and E. Lot D was transferred on 12 August 1957 to the Council of the City of Parramatta, preserving easement for overhanging eaves, guttering and window.²⁸¹

Lot D was cancelled in September 1980. It was registered as Lot 100 in DP 607789 and consolidated with the Horwood Place Car Park.²⁸² The subdivision (as shown in Figure 2.180 and Figure 2.181) shows a passageway from Macquarie Street to the present car parking area behind 68 and 70 Macquarie Street. The car park had been constructed at this time.

The residue, Lot E, measuring 18¼ perches (70 Macquarie Street) was registered on CT Vol 7481 Fols 133 and 134 in April 1958 in the names of Sidney Smith and Nellie Lacy Smith. Various leases were registered on the land title. The allotment was transferred on 12 January 1969 to S & NL Smith Pty Ltd.

Lot E was transferred in November 1976 to Cutepa Pty Ltd.²⁸³

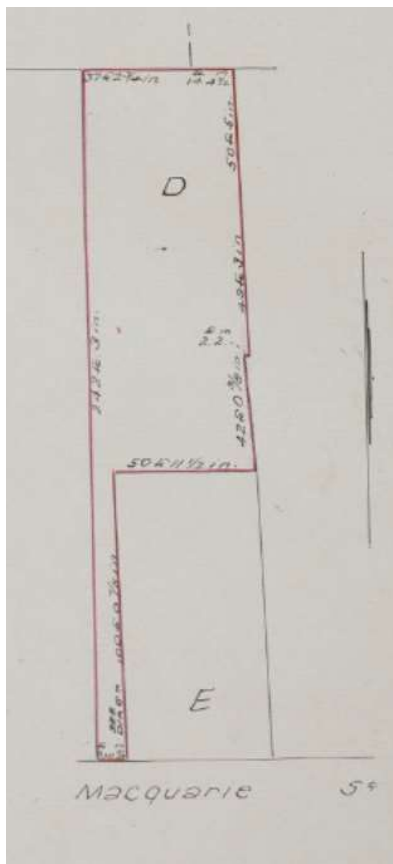


Figure 2.182 Title diagram showing Lot D, comprising 31 perches of land, formerly part of Lot C, subdivided from Allotments 76 and 77. (Source: NSW Land Registry Services, CT Vol 7473 Fol 96)

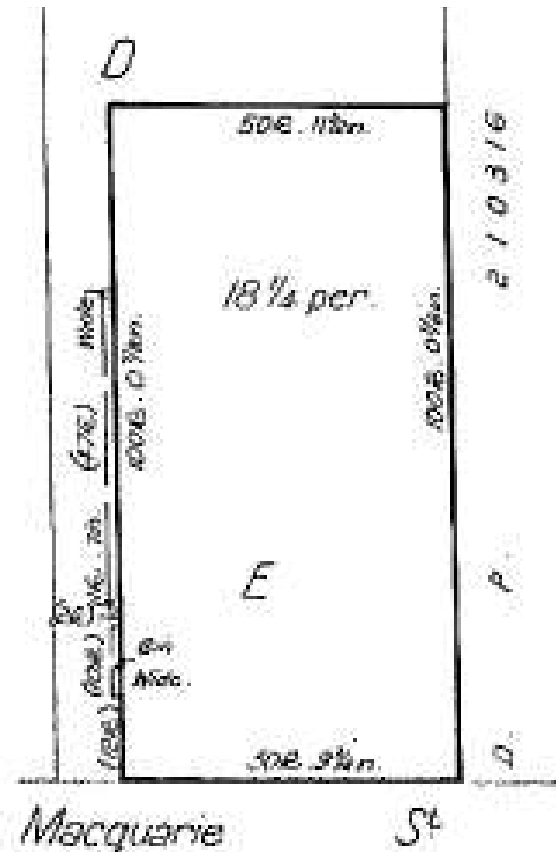


Figure 2.183 Title diagram of Lot E on Vol 11252 Fol 59, formerly part of Lot C, subdivided from Allotments 76 and 77. (Source: NSW Land Registry Services)



Figure 2.184 Extract from detail survey sheet showing Smith House on Lot C (outlined in yellow), 1954. (Source: Sydney Water Archives, DS)

2.3.37 Allotment 75 Section 16—grant to John Thorn

On the 1823 plan of the town of Parramatta, Allotment 75 was numbered 19 and contained a building as shown in Figure 2.183. This structure is also depicted in the same position on Stewart's plan the following year, with the allotment numbered 75. This allotment was granted on 30 June 1823 to John Thorn, chief constable at Parramatta.²⁸⁴ The allotment measured 36 rods and was:

*bounded on the West by a line two chains 16 links, on the North by a line 99 links, on the East by a line to Macquarie Street 2 chains 16 links, and on the South by that Street 94 links.*²⁸⁵

Born on 4 January 1794, John was the third son of Humphrey and Rebecca Thorn. He married Jane Matilda Humm in December 1815. In 1821 John was appointed chief constable of Parramatta, replacing William Sherwin Sen, and was mentioned frequently in newspapers in that capacity. He qualified as a juror in 1826 and in 1829 was appointed bailiff for Parramatta. According to the 1828 Census, he was 35 years old, born in the colony, Protestant and chief constable at Parramatta. His household also consisted of his wife Jane Matilda Thorn (32) and their children John (11), James (9), Mary (7), William Joseph (5), De Humphrey (3) and Jane Matilda (1), who were all born in the colony. Because Thorn owned several allotments in the township, and the street name is not indicated in census records, it is not known precisely where the family lived.

John was a major landholder and apart from owning several allotments in the town of Parramatta (including Allotment 75), he received a grant of 640 acres at what is now known as Thornleigh and Pennant Hills, a very large farm at Goulburn, and sundry other parcels. He died on 9 August 1838 at Berrima, aged 45 years. In April 1854 Jane M Thorn of Goulburn, John's widow, lodged a claim to Allotment 75 of Section 16 as executrix of her late husband's estate.²⁸⁶ She died in January 1878. The status of her claim to the allotment is not known.



Figure 2.185 Detail from Stewart's 1823 plan showing one structure within Lot 75. (Source: SLNSW)

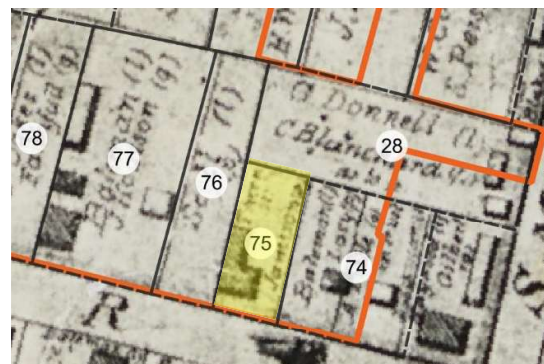


Figure 2.186 Detail from Brownrigg's 1844 plan showing an L-shaped masonry building in Lot 75. (Source: SLNSW)

It is not known if the Thorn family occupied the cottage on Allotment 75, but as John died at Berrima in 1838 and his wife at Goulburn much later in 1878, they were obviously not in residence from the 1830s onwards. Allotment 75 is depicted in the 1844 plan of Parramatta by Brownrigg with a building in the centre of the land. The annotated names are partly obscured, though the name Thorn is discernible and the other name is possibly Jamison or Jamieson. This may be the Mr Jamison of Macquarie Street who was shot and injured by a burglar who attempted to rob him on Wednesday 22 May 1844.

According to the newspaper account:

Mr Jamison is an aged single gentleman, living in large premises, in which the only resident, besides himself, is an old female housekeeper, and is generally accredited to keep a large sum of money in his house.²⁸⁷

Allotment 75 of Section 16 of the town of Parramatta was advertised for sale on 11 November 1896, but the sale lapsed. It was readvertised for sale on 23 February 1897 but was not bid for. It was readvertised once again on 10 August that year and yet again not bid for. The allotment was up for sale once more on 19 March 1901 and once more not bid for. Finally it was put up for auction sale on 14 September 1904. It was described as 'fronting Macquarie-street in the town of Parramatta, and distant about ½ of a mile northerly from the railway station'.²⁸⁸ The allotment, measuring 31¼ perches, was granted by purchase to John Taylor of Parramatta, an auctioneer, for £87.²⁸⁹ It is not known what occurred between 1854 when Jane M Thorn lodged her claim to the land and 1896 when it was advertised for sale.

The accompanying plan of survey dated 12 January 1894 (Figure 2.187) shows the allotment with improvements valued at £65. It comprised two structures on the allotment, including an L-shaped building on the northern alignment of the boundary comprising a wooden harness room (valued £15) and stable (£30), and a wooden coach house along the eastern boundary line (£10). The land was enclosed in fencing (£10). This allotment is likely to have originally formed part of Lot 76 adjoining to the east, which would explain the coach house and stables (which would have serviced a middle or upper class household). These structures do not correspond to the structure outlined in the 1823, 1836 and 1844 plans.

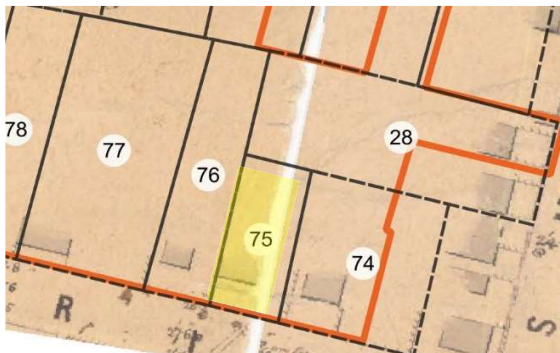


Figure 2.187 Detail from 1855 plan of street alignments showing Lot 75 (shaded yellow). This plan only recorded the building frontages along the street alignment. (Source: City of Parramatta Research and Collections)

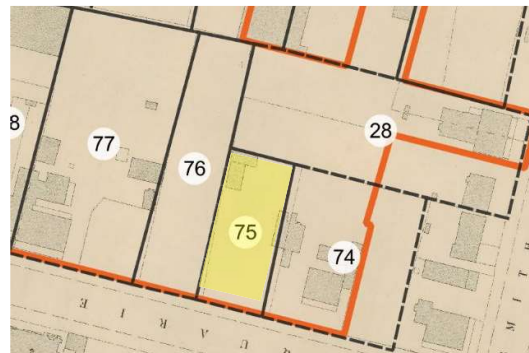


Figure 2.188 Detail from Parramatta detail survey, sheet 18, 1895, showing lot 75 (shaded yellow). (Source: SLNSW)

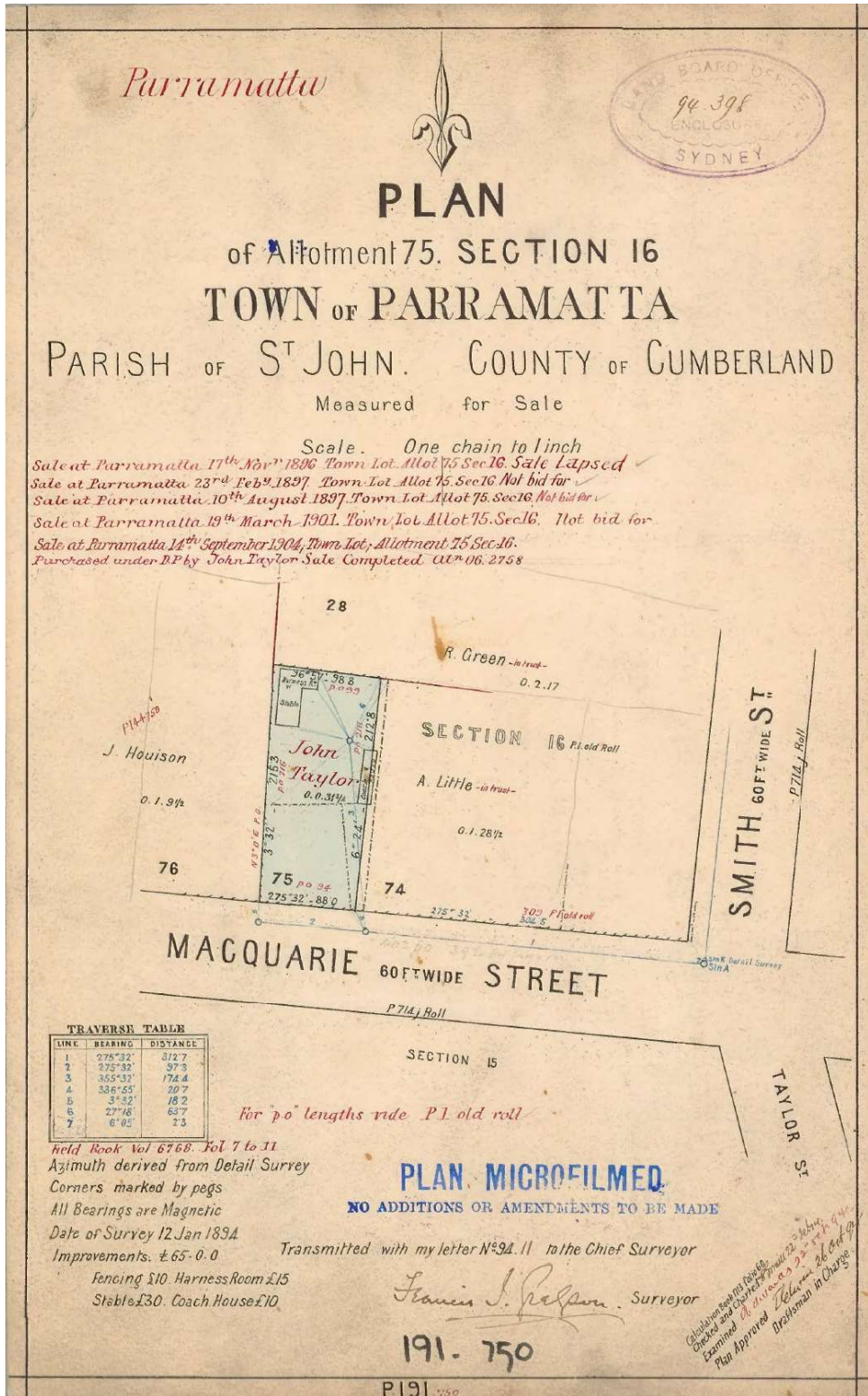


Figure 2.189 Plan of Allotment 75 Section 16, granted by purchase to John Taylor. (Source: NSW Land Registry Services, Crown Plan 191-750)

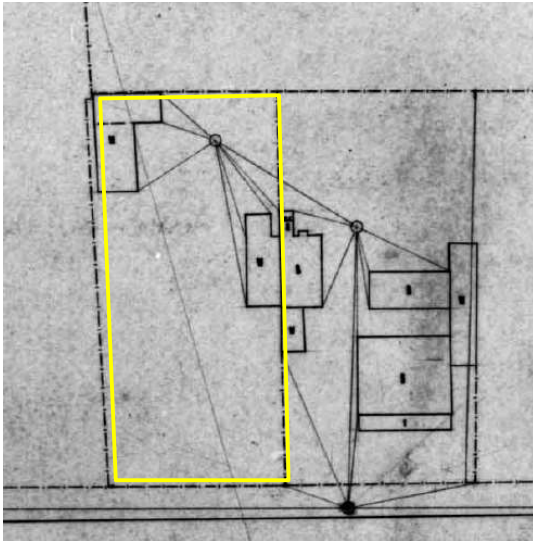


Figure 2.190 Extract from Parramatta detail survey, 1895, with Allotment 75 outlined in yellow and comprising two wooden buildings. (Source: Sydney Water Archives, with GML overlay)

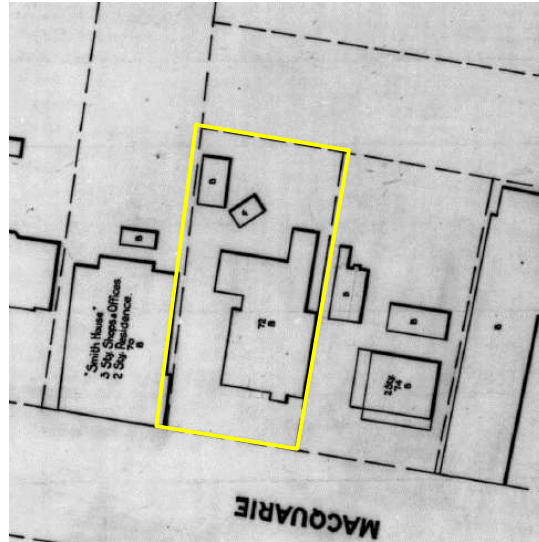


Figure 2.191 Extract from Parramatta detail survey sheet 2711 showing 72 Macquarie Street, December 1954. (Source: Sydney Water Archives, with GML overlay)

On 5 April 1905 John Taylor passed away at his residence in Wentworth Street, Parramatta, aged 80 years. He was survived by five sons and one daughter. The following year Allotment 75 Section 16 was among several parcels of land in Parramatta advertised for auction sale on 10 January 1906.²⁹⁰ The land was conveyed on 19 June 1906 to William Richard Murray of Parramatta, a merchant, and Hugh Walker Taylor of Redfern, a priest. One month later they sold it to William James Morey of Parramatta, an apothecary.

The allotment was conveyed on 3 February 1909 to Septimus George Rawlinson, a grocer of Parramatta. One year later, on 12 April 1910, the parcel changed hands to Septimus George Rawlinson of Parramatta and John Percy Rawlinson of Parramatta, both grocers.²⁹¹ Septimus George Rawlinson was living in Macquarie Street by 1913, presumed to be in a house erected on Allotment 75.²⁹² It is not known whether Rawlinson retained the coach house and stables/harness room buildings on the lot when he erected the house on Allotment 75.

According to the Sands Directory the house was called 'Hollingarthe' in 1917. Septimus George Rawlinson retired from the family business, Rawlinson Bros grocers, at the beginning of that year. The Parramatta Chamber of Commerce held a farewell dinner at the Woolpack Hotel on 1 February two days before he left for Melbourne.²⁹³

The Rawlinsons sold the property known as 58 Macquarie Street to Parramatta grocer Thomas McDowell Hyland.²⁹⁴ The Sands Directory lists Hyland at 58 Macquarie Street from 1920 to 1927, which corresponds with the transfer of the property on 2 March 1927 to Charles Basil Psaltis and Arthur Basil Psaltis as tenants in common.²⁹⁵ The Sands Directory lists Nicholas Psaltis at 58 Macquarie Street from 1928 until 1932–33 when the directory ceased publication.

The property was conveyed on 28 March 1935 to Merrick Fletcher O'Reilly of Parramatta, a medical practitioner.²⁹⁶ His family occupied the house soon after as Mrs Merrick O'Reilly of 58 Macquarie Street was the treasurer of Dalmar House in April 1936²⁹⁷ and Brian O'Reilly was living at 58

Macquarie Street the same year.²⁹⁸ By 1943 the house was renumbered 70 Macquarie Street and, according to the electoral roll, occupied by Daisy Evelyn O'Reilly, Merrick Fletcher O'Reilly and Walter Meredith O'Reilly. Dennis Hudson O'Reilly was named at 72 Macquarie Street.²⁹⁹ It is likely either 70 or 72 Macquarie Street was misnumbered.

Merrick O'Reilly transferred the property in 1947 to Sydney George Icton of Parramatta, a medical practitioner. The 1949 electoral roll lists Constance Nellorie O'Reilly, Sydney George O'Reilly and Sydney John Rathluba O'Reilly at 72 Macquarie Street.³⁰⁰ The footprint of the building is outlined on the detail survey in 1954 (Figure 2.189), a brick residence with two smaller structures to the rear (northwest) on the allotment. Sydney George Icton conveyed the property in May 1960 to Sydney John Icton.

On 9 October 1961 Sun Insurance Office Ltd purchased the property.³⁰¹ Coinciding with the change of ownership, the property was registered on Vol 9157 Fol 209. The land was further subdivided in three lots, with Lot 3, comprising 22½ perches, conveyed to Sun Insurance Office Ltd. The former residence on the site was demolished in the 1970s to make way for the Sun Alliance Building.

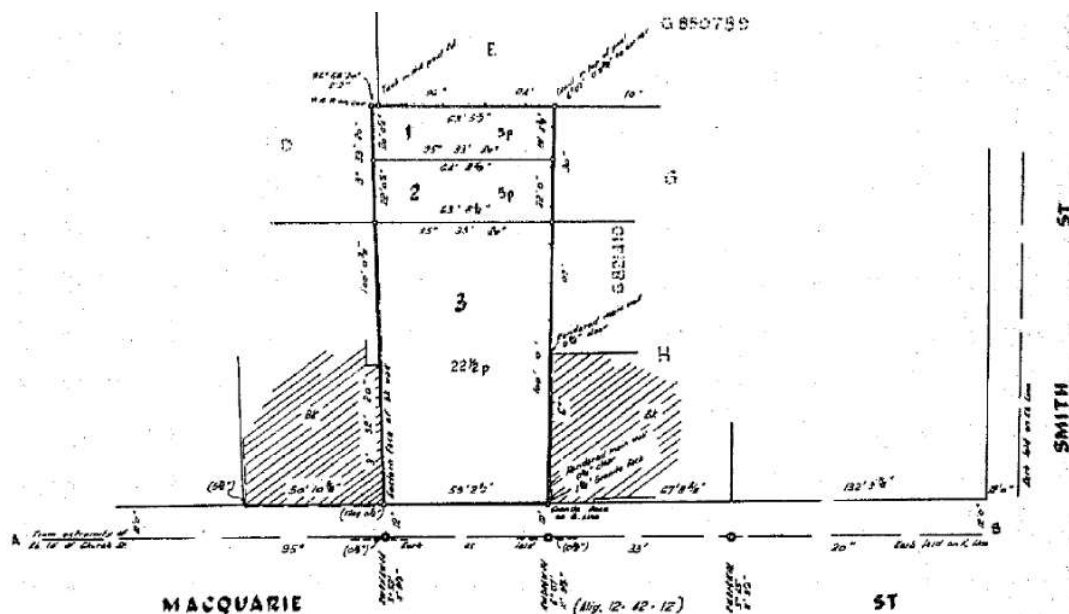


Figure 2.192 Block plan on Vol 9592 Fol 142 being Lots 1, 2 and 3. (Source: NSW Land Registry Services)

2.3.38 Allotment 74 Section 16—grant to Arthur Little (in trust)

Two cottages [the western one is within the site boundary] are depicted on Stewart's map of Parramatta of 1823 in the centre of what evolved as Allotment 74. Robert Bateman was shown as the holder of this parcel of 68.5 rods in the Parramatta return of 1823. On 30 June 1823, the land was duly leased to him by the Crown for 21 years. The land measured 68.5 rods and it was bounded on the west, 2 chains 16 links, on the north 1 chain 89 links, on the east 2 chains 16 links, and on the south by Macquarie Street, 1 chain, 89 links. The quit rent was to be 6 pence per rod.



Figure 2.193 Detail from Evan's 1804 survey showing Lot 74 as undeveloped. (Source: The National Archives UK)



Figure 2.194 Detail from Stewart's 1823 plan showing a structure within the site, and a second structure just outside the site boundary. (Source: SLNSW)

Robert Bateman (later changed to Batman) was a member of one of the more notable Parramatta families. His father, William Bateman/Batman, had arrived in the colony as a convict in 1797 on the Ganges with his wife and two children, one of whom was Robert. His younger brother, John Batman, is associated with Melbourne history as he 'purchased' the site of Melbourne from the local Aboriginal people in 1835.

On 15 December 1815, Robert Bateman was driving a cart to Parramatta with a wife and a female child when he was attacked by three men near Wentworth's property at Blanket Bridge. He defended himself with a sabre, wounding two of them as well as being wounded himself. The bandits retired. This is possibly the Robert Bateman pertaining to Allotment 74.

Robert Batman married Eleanor Turner, a widow, on 15 February 1819. She was the mother of most of his children.

Robert became actively engaged in property dealing and ownership. On 13 December 1817, Robert Batman of Parramatta sold two allotments of land in unnamed streets, granted to Richard Robertson and William Gill respectively, to Samuel Larkin. In June 1820, in a petition to the government, Robert Batman stated that he came to the colony about 20 years ago with his parents, William and Mary, and that he lived in Parramatta. He sought a grant on the road from Parramatta to Liverpool. By this time, he was also selling meat to the Commissariat at Parramatta.

Bateman was involved in a wide range of different activities in this period. When Henry Kitchen was given permission on 13 October 1821 to cut 20,000 feet of cedar on the Illawarra, he was allowed to employ specified men. One of them was Robert Batman, carter of Parramatta. On 20 October 1821, Robert Batman was appointed constable for Parramatta. He resigned his post as constable on 21 June 1822. He was paid for cedar supplied to the government at Windsor on 18 January 1822.

Meanwhile his brothers had gone to Van Diemen's Land. On 3 July 1822, he wrote from Parramatta that he had been allowed a 100-acre grant by Macquarie. He requested that this be allocated to him at the Derwent Settlement, particularly at Port Dalrymple where his brothers were established. This request might be linked to the sale on 11 August 1822 by Robert Batman, described as a settler of Bathurst, to Joseph Pye, settler of Bathurst, of 45 acres on Eastern Creek granted by Macquarie on 10

June 1815, known as Roberts Farm. This land was situated in the County of Cumberland in the area now part of Western Sydney.

Despite all of these shifts in activity, he remained based in the Parramatta area. The August 1822 Muster listed Robert Bateman at Parramatta as a shopkeeper, with his wife Eleanor and one child. They also had one assigned one convict, Thomas Barns, with a life sentence who had arrived on the Fame. Bateman also held 50 acres at Parramatta plus one horse, 20 cattle, three hogs and 150 bushels of maize.

He appears on various muster lists from 1823–25, as Robert Bateman, came free, Ganges, 1797, of Parramatta, a housekeeper. His son, Robert was also listed as 9 months old. His wife was Elenor, and they had the following children: son, William, 1; daughter, Mary, 4; and son, William, 21. Their assigned convicts were Timothy Cockrane, Tyne, 1819 and M Kelly, Dorothy, 1820. Their employees were Mary Harrison, born in the colony; James Ingledon, ticket of leave, Atlas, 1816; and Abraham Shaw, free by servitude, General Stewart, 1818.

There is an enigmatic remark by Hassan in one of his letters, dated 15 August 1823, who wrote that Robert Batman would soon come to Parramatta.

Batman's tender to supply meat to the Commissariat at Parramatta was accepted on 23 June 1825. On 20 October 1825, he warned against employing William Elston.

In mid-1826, Bateman tendered to supply the government with firewood at Parramatta. This caused a good deal of difficulty for him. In a Memorial to the Colonial Secretary on 8 August 1826, Robert Batman of Parramatta stated that he had recently been successful in his tender to supply firewood to the Government at Parramatta at 2/6 per cart. However, to his dismay, the superintendent rejected much of the wood as not being straight enough. In response, Batman complained that the tender was not for billet wood. He requested permission from the Colonial Secretary to cut fuel in the government paddocks. Governor Darling checked Aird's report on this matter in the meantime.

More trouble followed. On 21 April 1827, he complained that he could not get the accounts owed to him paid at Sydney by auditors and was still owed £45. He complained that his wife went five times to Sydney to no avail and she was eventually told to stay away in case she irritated the officials further. Batman requested information about where he could expect to be paid. If he was not paid, he complained, he must give up the contract, 'as I must stop my Horses and carts, and likewise my Men, for the want of Money'. He only took the contract he asserted since he is poor and that 'I expected I should be able from the prompt payment of Government to satisfy my men who are now threatening to leave me if I do not pay Wages'. It is not known how this matter was resolved.

The November 1828 census showed him as 33 years old and a stockholder at Parramatta, with two horses and 100 cattle. His wife Eleanor was born in the colony and his children were Mary A, 7, William Richard, 5, John Robert, 3, Euphemia Maria, 1, all born in the colony. All were Protestant.

Robert Bateman/Batman may have found himself in financial stress, since he divested himself of a good deal of land in the next few years, including Allotment 74, though he may also have simply been dealing in town land in Parramatta as a speculation. On 16 October 1827, Robert Bateman assigned a house and premises in O'Connell Street, Parramatta, known as Robert Bateman's Houses to William Bennett for £50.

On 12 January 1829, Mr Bodenham advertised the auction sale of land in Macquarie Street, Parramatta, granted to Robert Bateman, adjoining Wentworth's land. (Bateman may no longer have

owned the parcel.) On 16 January 1830, Robert Bateman assigned land to John Mouten measuring 29.5 rods, which was bounded on the north by Macquarie Street. This land was nearly opposite his Allotment 74. On 22 August 1831, he assigned to George and John Paul an area of 49 rods, bounded on the north by Macquarie Street, Parramatta, for £60, which was also nearly opposite his Allotment 74. On 1 March 1835, by a deed of bargain and sale, Robert Batman of Parramatta sold to Benjamin Carroosa of Parramatta an area of 20 rods in Macquarie Street adjoining the Chapel ground for £12 in trust for the Wesleyan Church.

With regard to Allotment 74, Bateman's dealings with this land complicated the ownership pattern. On 11 March 1825, Robert Bateman assigned a moiety of this Crown Lease (with messuage or dwelling house) to James Hassall for £300. This entitled Hassall to a half share in the indivisible whole of the ownership of this land.

In January 1830, James Hassall of Parramatta assigned his half share in this lease with a messuage or dwelling house to John Terry Hughes of Sydney, esquire, for the residue of the 21-year term, for £300. This deed described the property as bounded on the north by O'Connell [sic], on the south by Macquarie Street, on the east by Robert Bateman's property and on the west by Thomas Bore's (Rose's?) property. Thus, he held a half share of the whole rather than a half of the allotment by area. John Terry Hughes assigned his share to John Lacy on 16 May 1835 for £300.

The title became even more complex on 1 January 1841 when John Lacy deeded the land by gift to Miss Elizabeth Lacy, his daughter, as a life tenancy of the western half with a messuage thereon. He subsequently converted the life tenancy to an outright gift to his daughter on 19 July 1841.

On 25 January 1831, Thomas Macquoid, sheriff of NSW, assigned Bateman's rights to the property (68.5 rods, with a messuage or dwelling house and outhouses thereon) to William Shaw for £91/4/9 to cover a legal judgement against Bateman. This obviously did not resolve Bateman's financial woes as on 29 September 1839 he mortgaged his moiety in the land to John Norris to raise the sum of £79/18/-. No title was issued in respect of this transaction.

William Shaw and Elizabeth Lacy, each holding an interest in the allotment, nominated Arthur Little, householder of Clarence Street, Sydney, as their trustee to receive the grant and resolve the land title issue in the Court of Claims. They paid the quit rent arrears of £57/11/11 so that the grant could be issued. Accordingly, on 10 September 1842, a grant was issued to Arthur Little of Clarence Street, Sydney, for 1 rood 28.5 perches, in trust of Elizabeth Lacey of Parramatta and William Shaw of Sydney, clerk. The adjusted sum of £35/19/3 for 21 years quit rent was also paid.

According to Brownrigg's 1844 map of Parramatta Allotment 74 was shown as two separate parcels with a cottage on each as in the 1823 survey. A Little (trustee) was shown as the grantee for the eastern parcel and for the western part, Bateman was shown as the Crown lessee and Lacy as the current grantee.

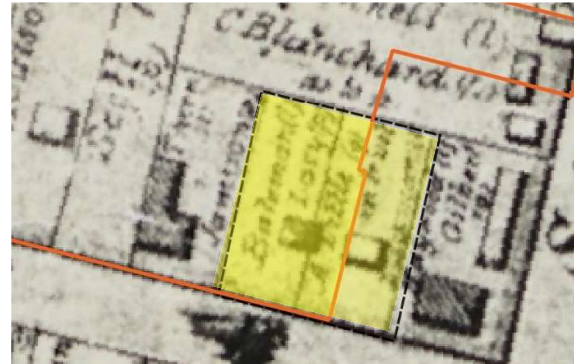


Figure 2.195 Detail from Richards' 1831 field survey book. (Source: reproduced from Casey & Lowe 2017, State Archives Reel 2/5197) **Figure 2.196** Detail from Brownrigg's 1844 survey. (Source: SLNSW)

On 24 March 1842, William Shaw, of Sydney, storekeeper and owner of an interest in this land, drew up his will in which he left his property to William Shaw. On 7 August 1851, probate of the will of William Shaw was granted. William Shaw later sold his property to William Taylor.

James Smith of Parramatta made a sketch of the land on 14 April 1853 as it actually measured as against the grant description, possibly to document it for the sale of Lacy's share. Her share was sold to Hugh Taylor on 16 July 1853. It changed hands on 1 August 1861 to James Byrnes. John Taylor of Parramatta, auctioneer, purchased this share of the property on 19 September 1863. Five days later Taylor mortgaged his interest in Allotment 74 to William Peisley of Sydney, carcass butcher, for £350.

Meanwhile, William Shaw of Sydney, labourer, sold the property he had inherited to Samuel Taylor of Palmers Oaky Creek, District of Turon, storekeeper, on 15 October 1856. Amongst various parcels of land in the sale was included the moiety or tenancy in common with Elizabeth Lacy of Allotment 74.

Both Samuel Taylor and John Taylor, not apparently related, commenced proceedings to convert their respective interests in Allotment 74 to Torrens title. Samuel Taylor instructed his solicitor, WFA Fitzhardinge, to investigate his title. On 26 November 1862 Fitzhardinge sought access to the relevant papers regarding the Court of Claims Case No 1111. FW Birmingham prepared a survey of the western half of Allotment 74 in September 1864 for John Taylor's primary application; no building outline is shown on this plan.

Samuel Taylor lodged the primary application for his undivided share of this land on 7 July 1865. The land was valued, including all improvements, as £10, and was described as unoccupied. He nominated William Peisley to receive the title. John Taylor applied to convert the western part to Torrens title on 27 February 1866. The land was valued at £400 and was occupied by Mrs Nevitt as a yearly tenant. Samuel Taylor also nominated William Peisley to receive the Certificate of Title. The two primary applications were subsequently combined at the Land Titles Office and dealt with simultaneously.

To resolve some of the problems with one of the applications the Land Titles Office directed William Peisley to pay Samuel Taylor for his share so the title could be issued. On 10 April 1867 William Peisley deposited £50 owed to Samuel Taylor and on 16 April 1867 the title for the whole of Allotment 74 was issued to William Peisley, as a single owner.

Peisley conveyed the property to John Taylor, auctioneer of Parramatta, on 25 October 1869. Four days later Taylor mortgaged it to the Australian Mutual Provident Society. The mortgage was discharged on 3 February 1871 when Taylor sold the property to William Fullagar of the Great Western Road near Parramatta, auctioneer.

Fullagar did not live on the property and it appears to have been vacant land. John Taylor owned and lived on land adjoining to the west. In the 1885 Fuller's Directory the occupiers in Macquarie Street travelling westwards from Smith Street were Mrs Curtis, boarding house, then John Taylor, auctioneer etc (possibly next to this property), then Dr James Smith. In 1887, Fuller's listed the occupiers on Macquarie Street from Smith Street westwards, as John Taylor, auctioneer etc (private residence), then Dr James Smith, surgeon. According to the Detail Survey in May 1894, there was a vacant lot on the eastern half of Allotment 74 and a brick cottage with a number of outbuildings on the western half.

On 29 June 1894, the land was conveyed to Arthur Wentworth Fullagar, gentleman of Parramatta. He mortgaged the property on 1 April 1897 to Kelso King, gentleman of Sydney, which was discharged on 11 March 1901. There were further mortgages until 30 July 1908, when the property was transferred to James Barnes, of South Granville, dealer. James Barnes was a prominent businessman and butcher in Granville, having purchased James Brown's boiling down works in South Granville, which operated there until 1917–1917 when he shifted to new premises.

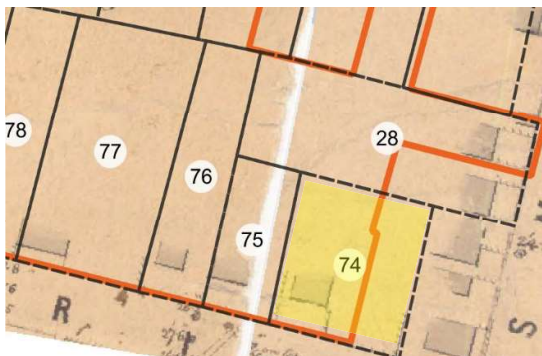


Figure 2.197 Detail from 1855 plan of street alignments showing Lot 74 (shaded yellow). This plan only recorded the building frontages along the street alignment. (Source: City of Parramatta Research and Collections)

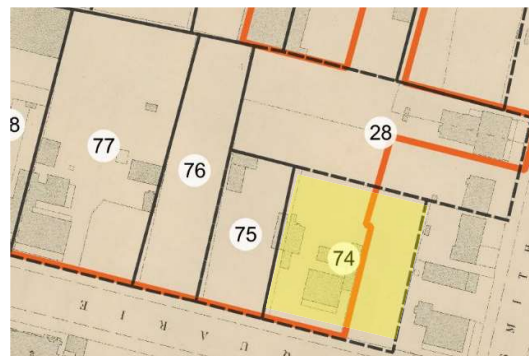


Figure 2.198 Extract from 1895 Parramatta detail survey, sheet 18 (Lot 74 is shaded yellow). (Source: SLNSW)

On a survey of 19 February 1910 for the adjacent land, notations indicate Allotment 74 was owned by James Barnes, Granville, and occupied by James Taylor, Macquarie Street. From 1897, the site to the west of the house on the corner was occupied by a house often conducted as a boarding house by James Taylor from 1897 to 1913, then by Mrs Agnes Taylor from 1914 to 1920 and from then until Sands ceased publication in 1932–23 by John T Taylor. However, it appears that this boarding house was on the western part of Allotment 74 when compared with the 1894 survey. In later years a property occupied by the Coastal Farmers' Co-op on a long-term lease was located between the corner house and the boarding house.

The property was conveyed to Annie McDonald, wife of Benjamin Dunsmore McDonald, Guildford, gentleman, on 17 December 1913. The eastern part of Allotment 74 was then transferred to Herbert Greenwood, departmental manager of Epping, on 15 March 1923. It was mortgaged to the Queensland National Bank Ltd on 22 November 1923, possibly to build on the land. On 14 April 1924

the site was leased to the Coastal Farmers Co-op Soc Ltd. In 1925 and 1926, the Coastal Farmers Co-Op Soc Ltd was listed in the Sands Directory as operating from this site (soon after numbered 62 Macquarie Street). The Producers Distributing Soc Ltd [sic] was listed at this address from 1927.

The mortgage was discharged on 23 May 1928. On 31 January 1934, this property in Macquarie Street was leased to the Producers Co-op Distributing Soc Ltd. That society extended its lease on 29 December 1938 and 23 December 1941. The property was leased on 29 January 1946 to Francis William Young of 181 Clarence Street, Sydney. Following the death of Herbert Greenwood, the property was transferred to Herbert Daniel Allen and another, solicitors, on 10 September 1953. They transferred it to the Newtown Furnishing Co Pty Ltd on 9 May 1953.

On the survey plan dated 29 August 1957 there was a brick building on the eastern half of this allotment. On 25 May 1959, it was conveyed to the NSW Produce Co Pty Ltd, which owned it for a short time to 23 August 1960 before selling it to the Parramatta District Co-op Permanent Building and Investment Society, which leased it to Office Investment Co Pty Ltd on 26 June 1961. A survey plan of 14 October 1966 showed brick offices known as 76 Macquarie Street on this land.

2.3.39 Allotment 28 Section 16—grant to Robert Green (in trust)

A single cottage is shown in the centre of Allotment 28 Section 16 on Stewart's 1823 map of Parramatta. According to the Parramatta Returns in 1823, John O'Donnell was listed as the holder of this allotment which measured 97 rods. The name was incorrectly attributed and should have read Hugh O'Donnell or O'Donald as shown in later documents and maps.

Hugh O'Donald had come free on the Anne in 1810, as a veteran pensioner, with his wife Mary. It is not known where he lived for the first few years. On 27 January 1817, a daughter was recorded as being born to his wife Mary at Parramatta. Another daughter, Nancy, was born at Parramatta on 21 March 1819.

The Muster of August 1822 listed Mary O'Donald, came free, on the Anne, as the wife of Hugh O'Donald. There is no listing for Hugh, but her children are listed as Hugh, 15, came free, plus another five children, all born in the colony, with no names given. It is possible the 15-year-old Hugh is a mistake and is meant to be Hugh who came on the Anne.

On 2 August 1824, Hugh O'Donnald [sic] of the Royal Veterans, wrote from Parramatta that he was ready to clear, build on and cultivate a farm on which he had already cleared 20 acres. He requested that he could go on the store with his wife, and children, named Thomas, Hugh, Mary Anne, Elizabeth, Ann and Eleanor. The notation on the letter was not legible. However, during the following year, on 5 October 1825, the Deputy Commissary-General William Wemyss was informed that Hugh O'Donnell, his wife and six children plus their servant Charles Taylor, who had arrived on Morley 1, were to be victualled from the stores at Parramatta. It is possible that by this time Hugh O'Donnell/O'Donald was living in Smith Street, Parramatta.

The muster lists from 1823–25 list Hugh O'Donald, who came free on the Anne in 1810, as a pensioner. His Parramatta household included his wife Mary, who also came free to the colony, and their children who were all born in colony, namely Sophia, 6; Mary, 15; Ann, 11; Elizabeth, 9; June, 7; Eleanor, 2; and Hugh, 20.

According to the 1828 Census Hugh O'Donnell was aged 86 years old and listed as a householder at Parramatta. He held 100 acres, of which 20 was cleared, plus seven cattle. His household included his

wife Mary and their children, all born in the colony: Frederick, 20; Hannah, 14; Elizabeth, 11; Ann Sophia, 10; and Eleanor, 5.

Hugh O'Donnell was a signatory on the 14 August 1829 petition to Dr William Sherwin appealing to him to remain in the town. It is highly likely that O'Donnell was living on Allotment 74 which fronted Smith Street.

O 28 March 1834, Hugh O'Donnell of Parramatta, farmer, wrote his will and devised to his wife Mary:

my House and premises situate[d] in Smith Street in the aforesaid town of Parramatta, plus all of his household goods and chattels, plus his farm of 100 acres near Parramatta granted on 30 June 1823, for the term of her natural life.

He further specified that after her death:

I direct that my house and premises situate in Smith Street in Parramatta aforesaid be divided into two equal parts or portions from front to rear, one part or portion namely that part situate[d] to the North of my present dwelling house and adjoining John Dean's premises together with all the buildings thereon I give devise and bequeath to my daughters Mary and Hannah to be equally divided between them share and share alike, that moiety or portion of my premises in Smith Street in Parramatta aforesaid on which my dwelling house now stands and situate[d] to the South of the before mentioned part or portion and adjoining the dwelling house of John Gilbert I give demise and bequeath to my other three daughters Betsey, Nancy and Eleanor, to be equally divided between them share and share alike.

Under his will the daughters could not sell the property during their lifetime, but they could sell their share to each other. Their share was to pass to their children, if any. His second daughter Hannah's share was to be held in trust for her children or to pass to her other sisters if she died childless. O'Donnell left his 100-acre property to his sons Hugh and Thomas. Hugh O'Donnell died on 28 May 1866 aged 66 and was buried in St Patrick's Cemetery.

By 1844, when Parramatta was surveyed by Brownrigg, Allotment 28 featured a cottage in the centre of the allotment as shown in the 1823 plan, and there were two additional buildings on the street frontage at the corner of the allotment. The 1884 plan notes O'Donnell as the original lessee and C or G Blanchard as the current grantee; this was a mistake, the map maker confusing the allotment with land to the south

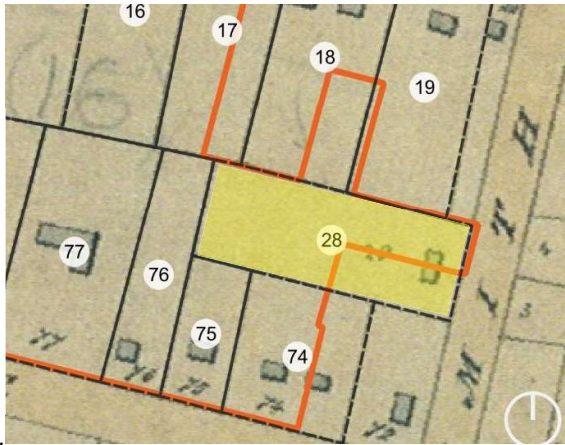


Figure 2.199 Detail from Stewart's 1823 plan showing a single structure partially within the site. (Source: SLNSW)

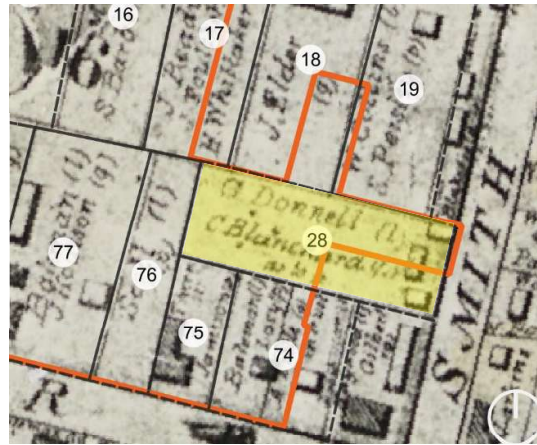


Figure 2.200 Detail from Brownrigg's 1844 plan showing two timber structures within the site. (Source: SLNSW)

Hugh's widow Mary probably lived here until her death on 12 June 1850. By this time Hugh and Mary's five daughters had all married: Mary (junior) was the wife of Robert Green, landholder of Kissing Point Road; Ann was the wife of John Northe, of Waihope, Bay of Islands, New Zealand; Hannah was the widow of Hely, of Sydney; Elizabeth was the wife of Sergeant McSorley; and Eleanor was the wife of Henry Alphen, of York Street, Sydney, licensed victualler. The daughters each had a share in the property and they jointly requested the grant be issued to Robert Green, Mary's husband, as their trustee. Accordingly, on 19 May 1855, Robert Green, of Kissing Point Road near Parramatta, was appointed their trustee of the 2 roods 16 perches of land (Allotment 28) which was bounded on the north 3 chains 98 links, on the west 1 chain 45 links, on the south 3 chains 99 links, and on the east by Smith Street, 1 chain 52 links.

By the 1860s the tenant of the cottage on Allotment 28 was Betsy McSorley. On 3 June 1863 Mary Ann McSorley of Smith Street, Parramatta, married Robert Winstanley of York Street, Sydney, dentist, at Ebenezer Chapel, Riley Street, Sydney. The ceremony took place at the residence of the bride's mother (Betsy) in Parramatta, apparently the Smith Street cottage. On 27 February 1866 Mrs McSawley [sic] was identified as the owner and occupier of this land.

Eleanor Alphen, one of the O'Donnell sisters who had a share in the southern part of the allotment containing the cottage, died intestate on 21 November 1869. On 17 November 1879, Thomas Alphen of Redfern, clerk, devisee of Eleanor Alphen, and Nancy North, of Waipana, Hawkes Bay, New Zealand, widow, conveyed their share in the southern half of Allotment 28 to Betsy McSorley, widow, of Parramatta, for £50.

Elizabeth McSorley appears to have continued to live in the Smith Street cottage. On 8 September 1884, when she drew up her will, Elizabeth or Betsy McSorley gave her address as Sydney but 'lately' of Parramatta, widow. She died less than two weeks later, leaving the property to her daughter Mary Ann Winstanley. Probate of Betsy McSorley's will was finalised on 6 November 1884.

The 1885 Fuller's Directory lists the occupants on the west side of Smith Street northwards from Macquarie Street as Elijah Butcher, wheelwright, John Overton, tinsmith, Mrs Baker then R Hack.

On 15 March 1887, Mary Ann Winstanley applied to convert the land to Torrens title. The land was occupied by Benjamin Russell as a weekly tenant. The southern part of Allotment 28, which was the

subject of the application, was valued at £200. The accompanying survey plan shows the cottage along the southernmost boundary near Smith Street.

The certificate of title was issued to Mary Ann Winstanley on 15 October 1887. Following her death on 11 July 1891 the property passed by transmission to Robert Winstanley.

The Public Works Detail Survey of 11 May 1894 shows a pair of brick semi-detached cottages on the northern half of Allotment 28 and a timber one on the southern half. The 1895 Sands Directory names the occupiers in Smith Street north from Macquarie Street as Edward Sibson, bricklayer; Alfred Taylor; Robert Hack, inspector telegraph lines; and Mrs E Griffiths, boarding house. Possibly Sibson or Taylor were living in the weatherboard cottage on the southern part of the allotment.

Following Robert Winstanley's death, on 24 August 1905 the property passed by transmission to Jane Robertson and others. They conveyed it to Jane Ann Jarvis, wife of Thomas Jarvis, butcher of Parramatta, on 15 September 1905. She mortgaged the property to Elizabeth Evans on 24 May 1906 and discharged the loan on 2 June 1909. Thomas Jarvis is listed in Smith Street (later numbered 3 Smith Street) in the Sands Directory from 1908 until it ceased publication in 1932–23.

The Jarvis's took out a series of mortgages on the property until 4 June 1918 when the last one was discharged. Following the death of Jane Jarvis, the property passed by transmission on 15 October 1932 to Thomas Jarvis, church officer, and Cecil Elliott Jarvis, storeman, both of Parramatta. On 9 October 1942, the property was conveyed to Isabel Jarvis, wife of Cecil Elliott Jarvis. On 13 May 1948, it was transferred to Gladys Daphne Jarvis, spinster of Parramatta, who mortgaged it to Isabel Jarvis, wife of Cecil Elliott Jarvis.



Figure 2.201 Extract from 1895 Parramatta detail survey, sheet 18, showing two terraces within the site. (Source: SLNSW)



Figure 2.202 Detail from 1943 aerial showing the two terrace houses still standing within the site. (Source: SIX Maps)

2.4 Endnotes

- ¹ Section 2.2 History of Parramatta is taken from GML Heritage 2020, Parramatta Light Rail Historical Archaeological Research Design and Excavation Methodology, report prepared for Parramatta Connect on behalf of Transport for NSW.
- ² Karskens, G 2009, *The Colony: A History of Early Sydney*, Allen & Unwin, Crows Nest, p 19.
- ³ Mary Dallas Consulting Archaeologists, The Aboriginal Heritage of Civic Place, draft report prepared for Parramatta City Council, 2003, p 30.
- ⁴ Mary Dallas Consulting Archaeologists, Parramatta City Council Aboriginal Cultural Heritage Study, report prepared for Parramatta City Council, 2003, p 31.
- ⁵ Mary Dallas Consulting Archaeologists, *The Aboriginal Heritage of Civic Place*, draft report prepared for Parramatta City Council, 2003, p 31.
- ⁶ Kass, T, Liston, C and McClymont, J 1996, *Parramatta: a Past Revealed*, Parramatta, Parramatta City Council; Mary Dallas Consulting Archaeologists, Parramatta City Council Aboriginal Cultural Heritage Study, report prepared for Parramatta City Council, 2003, p 32.
- ⁷ Kass, T, Liston, C and McClymont, J 1996, *Parramatta: a Past Revealed*, Parramatta, Parramatta City Council, p 6.
- ⁸ Gammage, B 2011, *The Biggest Estate on Earth: How Aborigines Made Australia*, Allen and Unwin, Crows Nest, p 245.
- ⁹ Mary Dallas Consulting Archaeologists, *The Aboriginal Heritage of Civic Place*, draft report prepared for Parramatta City Council, 2003, p 37.
- ¹⁰ Musecape, 2016, Parramatta North Historic Sites Heritage Interpretation Strategy, prepared for UrbanGrowth NSW, p 20.
- ¹¹ Mary Dallas Consulting Archaeologists, The Aboriginal Heritage of Civic Place, draft report prepared for Parramatta City Council, 2003, p 38.
- ¹² Mary Dallas Consulting Archaeologists, The Aboriginal Heritage of Civic Place, draft report prepared for Parramatta City Council, 2003, p 38.
- ¹³ Kohen, JL, 'Pemulwuy (1750–1802)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, published first in hardcopy 2005, viewed online 9 January 2019 <<http://adb.anu.edu.au/biography/pemulwuy-13147/text23797>>.
- ¹⁴ Kass, T 2005, *Western Sydney Thematic History—State Heritage Register Project*, Parramatta, NSW <<https://www.environment.nsw.gov.au/resources/heritagebranch/heritage/ThematicHistoryWesternSydney.pdf>>.
- ¹⁵ Kass, T 2005, *Western Sydney Thematic History—State Heritage Register Project*, Parramatta, NSW <<https://www.environment.nsw.gov.au/resources/heritagebranch/heritage/ThematicHistoryWesternSydney.pdf>>.
- ¹⁶ Kohen, J 2006, *Daruganora: Darug Country—The Place and The People*, Darug Tribal Aboriginal Corporation, Sydney; Clendinnen, I 2008, *Dancing With Strangers*, Text Publishing, Melbourne.
- ¹⁷ Brook, J 1994, *Shut Out from the World: The Hawkesbury Aborigines Reserve and Mission 1889–1946*, Deerubbin Press, p 19.
- ¹⁸ Tench, W 1961 *Sydney's First Four Years*, ed. Fitzhardinge, L. F., Angus and Robertson, Sydney, p 136.
- ¹⁹ Collins, D 1910, *An account of the English colony in New South Wales*, Collier J. (ed), Whitcombe and Tombs, Christchurch, p 91; Tench, W 1961 *Sydney's First Four Years*, ed. Fitzhardinge, L. F., Angus and Robertson, Sydney, p 192.
- ²⁰ Higginbotham, E 'The Future of Parramatta's Past: An Archaeological Zoning Plan', 1991, pp 6–7.
- ²¹ Karskens, G 2009, *The Colony: A History of Early Sydney*, Allen & Unwin, Crows Nest, p 79.
- ²² Karskens, G 2009, *The Colony: A History of Early Sydney*, Allen & Unwin, Crows Nest, p 79.
- ²³ Collins, D 1910, *An account of the English colony in New South Wales*, Collier J. (ed), Whitcombe and Tombs, Christchurch, p 92.
- ²⁴ Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 69.

- 25 Tench, W 1961 *Sydney's First Four Years*, ed. Fitzhardinge, L. F., Angus and Robertson, Sydney, p 195.
- 26 Tarlow, S 2007, *The Archaeology of Improvement in Britain, 1750-1850*, CUP.
- 27 Collins, D 1910, *An account of the English colony in New South Wales*, Collier J. (ed), Whitcombe and Tombs, Christchurch, p 92.
- 28 Clark, M. 1995, *A Short History of Australia*, Penguin, Maryborough, 20; Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 103.
- 29 Higginbotham, E 'The Future of Parramatta's Past: An Archaeological Zoning Plan', 1991, pp 8–9.
- 30 Collinridge Rivett., 1983, *Parramatta's Town-Plan 1788 and 1955*, New City Press, Parramatta, p 4.
- 31 See Parker, M 2006, Rethinking the Convict Huts of Parramatta: an archaeology of transformation (1790-1841), unpublished Honours thesis, University of Sydney.
- 32 Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 64.
- 33 Clark, M. 1995, *A Short History of Australia*, Penguin, Maryborough, p 236.
- 34 Higginbotham, E 'The Future of Parramatta's Past: An Archaeological Zoning Plan', 1991, p 12.
- 35 Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 72.
- 36 Kass, T, Liston, C and McClymont, J 1996, *Parramatta: a Past Revealed*, Parramatta, Parramatta City Council, p 117.
- 37 Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 72.
- 38 Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), pp 63, 73.
- 39 Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 134.
- 40 Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 132.
- 41 Godden Mackay Logan, 2000, Parramatta Historical Archaeological Landscape Management Study (PHALMS), p 72.
- 42 Higginbotham, E 'The Future of Parramatta's Past: An Archaeological Zoning Plan', 1991, pp 6–7.
- 43 Collins, D 1910, *An account of the English colony in New South Wales*, Collier J. (ed), Whitcombe and Tombs, Christchurch, p 92.
- 44 Parramatta Heritage Centre, 'Australia's Retail History – Westfield Parramatta', City of Parramatta Research & Collections, viewed 22 July 2021
<<https://historyandheritage.cityofparramatta.nsw.gov.au/blog/2017/09/29/australias-retail-history-westfield-parramatta>>.
- 45 Kass, T 2005, *Western Sydney Thematic History—State Heritage Register Project*, Parramatta, NSW
<<https://www.environment.nsw.gov.au/resources/heritagebranch/heritage/ThematicHistoryWesternSydney.pdf>>.
- 46 Kass, T, Liston, C and McClymont, J 1996, *Parramatta: a Past Revealed*, Parramatta, Parramatta City Council, p 25.
- 47 Barns, S and Mar, P 2018, 'Waves of People', Western Sydney University, City of Parramatta, p 62.
- 48 NSW Migration Heritage Centre, 'A Place for Everyone: Migrant Hostels in New South Wales 1946–78', 2011, viewed 16 January 2019 <<http://www.migrationheritage.nsw.gov.au/exhibition/aplaceforeveryone/migrant-hostels-in-nsw/index.html>>.
- 49 Barns, S and Mar, P 2018, 'Waves of People', Western Sydney University, City of Parramatta, p 62.
- 50 Barns, S and Mar, P 2018, 'Waves of People', Western Sydney University, City of Parramatta, p 65.
- 51 'To be let', *The Australian*, 1 November 1833, p 1, Trove, National Library of Australia, viewed 22 July 2021 <<http://nla.gov.au/nla.news-article42006702>>.
- 52 'Advertising', *The Australian*, 27 September 1833, p 4, Trove, National Library of Australia, viewed 23 July 2021 <<http://nla.gov.au/nla.news-article42007422>>.

- ⁵³ NSW Land Registry Services, OST Deed Bk G No 11.
- ⁵⁴ 'Advertising', *Sydney Herald*, 2 May 1831, p 2, Trove, National Library of Australia, viewed 22 July 2021 <<http://nla.gov.au/nla.news-article12842994>>.
- ⁵⁵ 'Advertising', *Sydney Monitor and Commercial Advertiser*, 1 April 1839, p 2, Trove, National Library of Australia, viewed 22 July 2021 <<http://nla.gov.au/nla.news-article32163466>>.
- ⁵⁶ 'Advertising', *Sydney Morning Herald*, 8 April 1843, p 4 Trove, National Library of Australia, viewed 23 July 2021, <<http://nla.gov.au/nla.news-article12424823>>.
- ⁵⁷ NSW Land Registry Services, OST Deed Bk 142 No 728.
- ⁵⁸ NSW Land Registry Services, OST Deed Bk 262 No 529.
- ⁵⁹ NSW Land Registry Services, OST Deed Bk 462 No 175.
- ⁶⁰ 'Appeal Court', *Cumberland Mercury*, 38 May 1892 p 3, Trove, National Library of Australia, viewed 23 July 2021 <<http://nla.gov.au/nla.news-article249009418>>.
- ⁶¹ 'Mrs Elizabeth Couper', *Sydney Morning Herald*, 18 June 1927, p17, Trove, National Library of Australia, viewed 22 July 2021 <<http://nla.gov.au/nla.news-article16377556>>.
- ⁶² 'Advertising', *Sydney Morning Herald*, 12 November 1927, p 25, Trove, National Library of Australia, viewed 22 July 2021 <<http://nla.gov.au/nla.news-article16418289>>.
- ⁶³ 'Reports of City Auctioneers', *Daily Telegraph*, 10 December 1927, p 12, Trove, National Library of Australia, viewed 22 July 2021 <<http://nla.gov.au/nla.news-article246211682>>.
- ⁶⁴ NSW Land Registry Services, OST Deed Bk 1504 No 871.
- ⁶⁵ NSW Land Registry Services, OST Deed Bk 2029 No 953.
- ⁶⁶ State Archives & Records, Series: NRS 898; Reel or Fiche Numbers: Reels 6020-6040, 6070; Fiche 3260-3312, ancestry.com.au, viewed 2 Aug 2021.
- ⁶⁷ State Archives & Records; *Copies of Deeds to Land Grants and Leases*; Series: NRS 13836; Item 7/487; Reel: 2704, ancestry.com.au, viewed 2 Aug 2021.
- ⁶⁸ State Archives & Records, *1828 Census: Alphabetical Return*; Series Number: NRS 1272; Reel: 2553, ancestry.com.au, viewed 2 Aug 2021.
- ⁶⁹ Ancestry.com, *Australia, Death Index, 1787-1985*, viewed 2 Aug 2021.
- ⁷⁰ State Archives & Records; Registers of Land Grants and Leases; Series: NRS 13836; Item: 7/481A; Reel: 2702, ancestry.com.au, viewed 2 Aug 2021.
- ⁷¹ NSW Land Registry Services, OST Deed Bk 55 No 751.
- ⁷² 'To the Editor of the Herald', *The Sydney Morning Herald*, 1 June 1863, p 3, Trove, National Library of Australia, viewed 2 Aug 2021 <<http://nla.gov.au/nla.news-article13079326>>.
- ⁷³ 'Advertising', *The Cumberland Mercury*, 5 July 1884, p 5, Trove, National Library of Australia, viewed 2 Aug 2021 <<http://nla.gov.au/nla.news-article248785693>>.
- ⁷⁴ 'Advertising', *The Cumberland Mercury*, 14 January 189, p 5, Trove, National Library of Australia, viewed 2 Aug 2021 <<http://nla.gov.au/nla.news-article252747136>>.
- ⁷⁵ NSW Land Registry Services, OST Deed Bk 603 No 205.
- ⁷⁶ NSW Land Registry Services, OST Deed Bk 603 No 205.
- ⁷⁷ 'Advertising', *Sydney Morning Herald*, 18 September 1906, p 9, Trove, National Library of Australia, viewed 20 Jul 2021 <<http://nla.gov.au/nla.news-article14795657>>.
- ⁷⁸ 'Advertising', *The Cumberland Argus and Fruitgrowers Advocate*, 9 July 1910, p 7, Trove, National Library of Australia, viewed 2 Aug 2021 <<http://nla.gov.au/nla.news-article86001929>>.
- ⁷⁹ NSW Land Registry Services, OST Deed Bk 1575 No 153.
- ⁸⁰ NSW Land Registry Services, OST Deed BK 1588 No 556.
- ⁸¹ NSW Land Registry Services, OST Deed Bk 1575 No 153.
- ⁸² 'Catering For Motorists', *The Cumberland Argus and Fruitgrowers Advocate*, 25 September 1930, p 17, Trove, National Library of Australia, viewed 2 Aug 2021 <<http://nla.gov.au/nla.news-article103864137>>.
- ⁸³ NSW Land Registry Services, OST Deed Bk 1710 No 118.

- ⁸⁴ 'The Roxy Parking and Service Station', *Cumberland Argus and Fruitgrowers Advocate*, 9 October 1940, p 12, Trove, National Library of Australia, viewed 23 Jul 2021 <<http://nla.gov.au/nla.news-article106207876>>.
- ⁸⁵ NSW Registry Services, OST Deed Bk 1901 No 358.
- ⁸⁶ NSW Land Registry Services, Primary Application 44662.
- ⁸⁷ NSW Land Registry Services, OST Deed Bk 1962 No 76.
- ⁸⁸ NSW Land Registry Services, OST Deed bk 2603 No 867.
- ⁸⁹ NSW Land Registry Services, OST Deed Bk 2236 No 344.
- ⁹⁰ NSW Land Registry Services, OST Deed Bk 2595 No 483.
- ⁹¹ 'Work on New Service Station', *Cumberland Argus*, 13 May 1953, p 5, Trove, National Library of Australia, viewed 23 Jul 2021 <<http://nla.gov.au/nla.news-article132137321>>.
- ⁹² State Records Authority of New South Wales; *Copies of Deeds to Land Grants and Leases*; Series: NRS 13836; Item: 7/487; Reel: 2704, ancestry.com.au, viewed 2 Aug 2021.
- ⁹³ 'Classified Advertising', *Sydney Gazette and New South Wales Advertiser*, 21 July 1821, p 4, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article2180373>>.
- ⁹⁴ 'Advertising', *The Sydney Herald*, 24 June 1833, p 4, Trove, National Library of Australia, viewed 29 Jul 2021 <<http://nla.gov.au/nla.news-article12847104>>.
- ⁹⁵ 'Advertising', *Sydney Herald*, 11 July 1833, p 1, Trove, national Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article12847238>>.
- ⁹⁶ 'Grants of Town Allotments', *New South Wales Government Gazette*, 30 November 1839, issue No 471 [Supplement], p 1360, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article230385172>>.
- ⁹⁷ NSW Land Registry Services, OST Deed Bk 82 No 849.
- ⁹⁸ NSW Land Registry Services, OST Deed Bk 87 No 2.
- ⁹⁹ G. P. Walsh, 'Ritchie, Robert Adam (1836–1891)', *Australian Dictionary of Biography*, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/ritchie-robert-adam-4481/text7317>, published first in hardcopy 1976, accessed online 29 July 2021.
- ¹⁰⁰ 'Railway Goods Carriages', *The Cumberland Mercury*, 19 August 1876, p 2, Trove, National Library of Australia, viewed 29 Jul 2021 <<http://nla.gov.au/nla.news-article248612148>>.
- ¹⁰¹ 'The Parramatta Iron Works', *Cumberland Mercury*, 16 February 1878, p3, Trove, National Library of Australia, viewed July 2021 <<http://nla.gov.au/nla.news-article248613331>>.
- ¹⁰² 'Local Intelligence', *Cumberland Mercury*, 25 May 1878, p 4, Trove, National Library of Australia, viewed 29 Jul 2021 <<http://nla.gov.au/nla.news-article248614125>>.
- ¹⁰³ 'Parramatta', *Evening News*, 28 April 1879, p 3, Trove, National Library of Australia, viewed 29 Jul 2021 <<http://nla.gov.au/nla.news-article107151286>>.
- ¹⁰⁴ 'Advertising', *Cumberland Mercury*, 20 June 1885, p 5, Trove, National Library of Australia, viewed 21 Jul 2021.
- ¹⁰⁵ 'Advertising', *Cumberland Mercury*, 29 January 1887, p 1, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article248798710>>.
- ¹⁰⁶ 'Advertising', *Cumberland Free Press*, 12 October 1895, p 5, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article144435636>>.
- ¹⁰⁷ 'Advertising', *Cumberland Argus and Fruitgrowers Advocate*, 29 February 1896, p 5, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article85774971>>.
- ¹⁰⁸ 'Produce Sales', *Cumberland Argus and Fruitgrowers Advocate*, 9 March 1918, p 6, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article86209406>>.
- ¹⁰⁹ NSW Land Registry Services, OST Deed Bk 1171 No 537.
- ¹¹⁰ NSW Land Registry Services, OST Deed Bk 1208 No 28.
- ¹¹¹ NSW Land Registry Services, Primary Application 23203.
- ¹¹² NSW Land Registry Services, CT Vol 3439 Fol 193.
- ¹¹³ NSW Land Registry Services, CT Vol 7394 Fol 165.

- ¹¹⁴ NSW Land Registry Services, CT Vol 7394 Fol 165.
- ¹¹⁵ State Records Authority of New South Wales; *Registers of Land Grants and Leases*; Series: NRS 13836; Item: 7/474; Reel: 2700, ancestry.com.au, viewed 30 Jul 2021.
- ¹¹⁶ State Records Authority of New South Wales; *Copies of Deeds to Land Grants and Leases*; Series: NRS 13836; Item: 7/487; Reel: 2704, ancestry.com.au, viewed 30 Jul 2021.
- ¹¹⁷ NSW Land Registry Services, OST Deed Bk 9 No 206.
- ¹¹⁸ NSW Land Registry Services, OST Deed Bk 72 No 31.
- ¹¹⁹ Archaeological Management and Consulting Group Pty Ltd, 'Archaeological Assessment and Research Design, 37–53 George Street and 240–252 Church Street Parramatta NSW', report for Siblow Pty Ltd, September 2005, p 96
- ¹²⁰ Archaeological Management and Consulting Group Pty Ltd, 'Archaeological Excavations 1996 Report – Volume 1, Woolcott's Dispensary formerly Miller and Co's Cordial Factory, 41–47 George Street, Parramatta NSW', report for Siblow Pty Ltd and Richardson and Wrench, November 2003
- ¹²¹ 'Advertising', *Daily Telegraph*, 10 March 1923, p 10, Trove, National Library of Australia, viewed 21 Jul 2021, <<http://nla.gov.au/nla.news-article245834858>>.
- ¹²² NSW Land Registry Services, OST Deed Bk 16 No 385.
- ¹²³ NSW Land Registry Services, OST Deed Bk 82 No 789.
- ¹²⁴ NSW Land Registry Services, OST Deed Bk 90 No 690.
- ¹²⁵ NSW Land Registry Services, OST Deed Bk 93 No 878.
- ¹²⁶ NSW Land Registry Services, OST Deed Bk 307 No 768.
- ¹²⁷ NSW Land Registry Services, OST Deed Bk 436 No 324.
- ¹²⁸ Archaeological Management and Consulting Group Pty Ltd, 'Archaeological Assessment and Research Design, 37–53 George Street and 240–252 Church Street Parramatta NSW', report for Siblow Pty Ltd, September 2005
- ¹²⁹ NSW Land Registry Services, OST Deed B 436 No 524.
- ¹³⁰ 'Advertising', *Sydney Morning Herald*, 30 June 1859, p 6, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article13027024>>.
- ¹³¹ 'Advertising', *Cumberland Mercury*, 8 July 1876, p 6, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article248611872>>.
- ¹³² 'Advertising', *Cumberland Mercury*, 10 August 1878, p 7, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article248614734>>.
- ¹³³ 'Advertising', *Sydney Morning Herald*, 8 Apr 1882, p 11, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article13509113>>.
- ¹³⁴ 'Friendly Societies Hall', *Evening News*, 25 April 1882, p 2, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article107992986>>.
- ¹³⁵ 'Parramatta', *Evening News*, 7 August 1882, p3, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article108208571>>.
- ¹³⁶ 'Tenders', *Sydney Morning Herald*, 22 July 1882, p 11, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article28381261>>.
- ¹³⁷ 'Advertising', *Cumberland Mercury*, 17 February 1882, p 5, Trove, National Library of Australia, viewed 30 Jul 2021.
- ¹³⁸ NSW Land Registry Services, Primary Application 15415.
- ¹³⁹ 'Advertising', *Sydney Morning Herald*, 18 July 1913, p 2, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article15436482>>.
- ¹⁴⁰ 'The Victoria Theatre', *Cumberland Argus and Fruitgrowers Advocate*, 26 July 1913, p 6, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article85967378>>.
- ¹⁴¹ NSW Land Registry Services, Vol 1940 Fol 157.
- ¹⁴² 'Parramatta Council', *The Cumberland Argus and Fruitgrowers Advocate*, 30 May 1914, p 9, Trove, National Library of Australia, viewed 31 Jul 2021 <<http://nla.gov.au/nla.news-article85966077>>.

- ¹⁴³ 'Advertising', *Cumberland Argus and Fruitgrowers Advocate*, 1 April 1916, p 7, Trove, National Library of Australia, <<http://nla.gov.au/nla.news-article86076627>>.
- ¹⁴⁴ 'Like a Concertina', *Cumberland Argus and Fruitgrowers Advocate*, 25 November 1924, p 4, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article104460391>>.
- ¹⁴⁵ 'Unsafe', *Cumberland Argus and Fruitgrowers Advocate*, 12 December 1924, p 4, Trove, National Library of Australia, viewed 30 Jul 2021 <<http://nla.gov.au/nla.news-article104462245>>.
- ¹⁴⁶ NSW Land Registry Services, CT Vol 1940 Fol 157.
- ¹⁴⁷ *Parramatta Building Register 1935-1949*, p 33, City of Parramatta Research & Collections.
- ¹⁴⁸ NSW Land Registry Services, CT Vol 2332 Fol 112.
- ¹⁴⁹ NSW Land Registry Services, CT Vol 1940 Fol 157.
- ¹⁵⁰ State Archives & Records, Archive Reel: 1572; Series: 12992; *Registers of Memorials for Land 1825-1842*, ancestry.com.au, viewed 1 Aug 2021.
- ¹⁵¹ *New South Wales and Tasmania, Australia Convict Musters, 1806-1849*, Ancestry.com.au, viewed 1 Aug 2021.
- ¹⁵² NSW Land Registry Services, OST Deed Bk 25 No 5.
- ¹⁵³ State Archives & Records; *Copies of Deeds to Land Grants and Leases*; Series: NRS 13836; Item: 7/487; Reel: 2704, ancestry.com.au, viewed 1 Aug 2021.
- ¹⁵⁴ State Archives & Records, Report on Case No. 859, 8 May 1841, 217648, Appn. 29324.
- ¹⁵⁵ 'Court of Claims', *New South Wales Government Gazette*, 30 December 1840, p 1420, Trove, National Library of Australia, viewed 1 Aug 2021 <<http://nla.gov.au/nla.news-article230139686>>.
- ¹⁵⁶ NSW Land Registry Services, OST Deed Bk 9 No 95.
- ¹⁵⁷ 'Advertising', *Sydney Herald*, 2 May 1831, p 2, Trove, National Library of Australia, viewed 22 Jul 2021 <<http://nla.gov.au/nla.news-article12842994>>.
- ¹⁵⁸ NSW Land Registry Services, OST Deed Bk 26 No 219.
- ¹⁵⁹ 'Advertising', *Sydney Mail and New South Wales Advertiser*, 22 July 1871, p 671, Trove, National Library of Australia, viewed 1 Aug 2021 <<http://nla.gov.au/nla.news-article164374664>>.
- ¹⁶⁰ NSW Land Registry Services, OST Deed Bk 222. No. 68.
- ¹⁶¹ NSW Land Registry Services, OST Deed Bk 591 No 363.
- ¹⁶² NSW Land Registry Services, OST Deed Bk 664 No 751.
- ¹⁶³ 'Advertising', *The Sydney Morning Herald*, 13 August 1927, p 23, Trove, National Library of Australia, viewed 1 Aug 2021 <<http://nla.gov.au/nla.news-article16396869>>.
- ¹⁶⁴ NSW Land Registry Services, OST Deed Bk 1504 No 273.
- ¹⁶⁵ NSW Land Registry Services, Primary Application 29342.
- ¹⁶⁶ State Records and Archives; *Registers of Land Grants and Leases*; Series: NRS 13836; Item: 7/481A; Reel: 2702.
- ¹⁶⁷ 'Advertising', *The Sydney Monitor*, 9 July 1834, p 4 (MORNING), Trove, National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nla.news-article32146681>>.
- ¹⁶⁸ NSW LRS, Old System Deed Bk 1962 No 76 and Bk Y No 277.
- ¹⁶⁹ 'Advertising', *The Colonial Observer*, 19 August 1843, p 3, Trove, National Library of Australia, viewed 26 Jul 2021 <<http://nla.gov.au/nla.news-article226467044>>.
- ¹⁷⁰ NSW Land Registry Services, OST Deed Bk 8 No 561.
- ¹⁷¹ 'Domestic Intelligence', *The Sydney Monitor*, 2 July 1831, p 2 (AFTERNOON), Trove National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nla.news-article32075700>>.
- ¹⁷² 'Savings Bank', *New South Wales Government Gazette*, 6 June 1838, p 447, Trove, National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nla.news-article230386521>>.
- ¹⁷³ NSW Land Registry Services, OST Deed Bk 27 No 409.
- ¹⁷⁴ 'Family Notices', *The Sydney Morning Herald*, 17 November 1860, p 1, Trove, National Library of Australia, viewed 1 Sep 2021 <<http://nla.gov.au/nla.news-article13048855>>.

- 175 'Advertising', *Sydney Morning Herald*, 23 April 1870, p 11, Trove, National Library of Australia, viewed 26 July 2021 <<http://nla.gov.au/nla.news-article13204110>>.
- 176 NSW Land Registry Services, OST Deed Bk 298 No 998.
- 177 NSW Land Registry Services, OST Deed Bk 568 No 924.
- 178 NSW Land Registry Services OST Deed Bk 682 No 662.
- 179 NSW Land Registry Services, Primary Application 11731.
- 180 'New Shops', *The Cumberland Argus and Fruitgrowers Advocate*, 27 February 1901, p 2, Trove, National Library of Australia, viewed 1 Sep 2021 <<http://nla.gov.au/nla.news-article85834051>>.
- 181 NSW Land Registry Services, CT Vol 1354 Fol 178.
- 182 NSW Land Registry Services, CT Vol 1362 Fol 159.
- 183 A. R. Buck, 'Waddell, Thomas (1854–1940)', *Australian Dictionary of Biography*, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/waddell-thomas-1626/text15699>, published online 1990, accessed online 22 Jul 2021.
- 184 Wharton, JC 1911, *The Jubilee History of Parramatta*, Cumberland Argus, Parramatta, 1911.
- 185 NSW Land Registry Services, CT Vol 2240 Fols 37/38.
- 186 'A Good Firm Leaving Us', *The Cumberland Argus and Fruitgrowers Advocate*, 30 December 1916, p 6, Trove, National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nla.news-article86069643>>.
- 187 'A Change of Name', *The Cumberland Argus and Fruitgrowers Advocate*, 30 December 1916, p 6, Trove, National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nla.news-article86069597>>.
- 188 NSW Land Registry Services, CT Vol 2869 Fol 209
- 189 NSW Land Registry Services, CT Vol 4644 Fol 16.
- 190 'Advertising', *The Broadcaster*, 22 October 1968, p 7, Trove, National Library of Australia, viewed 27 Jul 2021.
- 191 NSW Land Registry Services, CT Vol 9989 Fol 177.
- 192 NSW Land Registry Services, CT Col 13571 Fol 94.
- 193 NSW Land Registry Services, CT Vol 2869 Fol 209.
- 194 NSW Land Registry Services, CT Vol 4642 Fol 217.
- 195 NSW Land Registry Services, CT Vol 4642 Fol 217.
- 196 NSW Land Registry Services, CT Vol 6991 Fol 178.
- 197 NSW Land Registry Services, CT Vol 14062 Fol 229.
- 198 Austral Archaeology 2005, 236 Church St AA, SoHI and ARD final report.
- 199 'Advertising', *Sydney Morning Herald*, 21 August 1843, p 1, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article12414440>>.
- 200 'To Blacksmiths', *The Colonist*, 5 January 1837, p 8, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article31718919>>.
- 201 'No Title', *Sydney Monitor*, 4 May 1883, p 3, Trove, National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nal.news-article32143694>>.
- 202 NSW Land Registry Services, OST Deed Bk 6 No 753.
- 203 'Local and General', *The Cumberland Mercury*, 18 November 1891, p 2 Trove, National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nla.news-article249006631>>.
- 204 'Advertising', *Daily Telegraph*, 17 March 1900, p 3, Trove, National Library of Australia, viewed 16 Jul 2021 <<http://nla.gov.au/nla.news-article237159449>>.
- 205 Casey & Lowe 2017, *48 Macquarie & 220–238 Church Streets, Parramatta, Archaeological Assessment*, p 41.
- 206 NSW Land Registry Services, OST Deed Bk 673 No 610.
- 207 NSW Land Registry Services, OST Deed Bk 673 No 610.
- 208 'The Church Property', *The Cumberland Argus and Fruitgrowers Advocate*, 20 October 1906, p 4, Trove, National Library of Australia, viewed 27 Jul 2021 <<http://nla.gov.au/nla.news-article85942535>>.
- 209 'Notice of Removal', *Cumberland Argus and Fruitgrowers Advocate*, 29 December 1906, p 4, Trove, National Library of Australia, viewed 16 Jul 2021 <<http://nla.gov.au/nla.news-article85934381>>.
- 210 NSW Land Registry Services, CT Vol 1374 Fol 91.

- ²¹¹ 'Parramatta Progress: Business Houses Moving Along', *Cumberland Argus and Fruitgrowers Advocate*, 13 March 1907, p 3, Trove, National Library of Australia, viewed 16 Jul 2021 <<http://nla.gov.au/nla.news-article86158867>>.
- ²¹² NSW Land Registry Services, CT Vol 10557 Fol 164.
- ²¹³ 'Advertising', *Sydney Gazette and New South Wales Advertiser*, 13 March 1834, p 1, Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article2215624>>.
- ²¹⁴ NSW Land Registry Services, OST Deed Bk G No 94.
- ²¹⁵ 'Classified Advertising', *The Sydney Gazette and New South Wales Advertiser*, 21 January 1840, p 2, Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article2551318>>.
- ²¹⁶ 'Parramatta', *The Sydney Monitor and Commercial Advertiser*, 28 November 1840, p 3 (MORNING), Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article32187013>>.
- ²¹⁷ 'Shadforth, Thomas (1771–1862)', *Australian Dictionary of Biography*, National Centre of Biography, Australian National University, published first in hardcopy 1967, accessed online 28 July 2021 <<https://adb.anu.edu.au/biography/shadforth-thomas-2649/text3693>>.
- ²¹⁸ NSW Land Registry Services, Memorial No 267 Bk 5.
- ²¹⁹ NSW Land Registry Services, OST Deed Bk 150 No 228.
- ²²⁰ NSW Land Registry Services, OST Deed Bk 150 No 229.
- ²²¹ NSW Land Registry Services, OST Deed Bk 189 No 279.
- ²²² NSW Land Registry Services, OST Deed Bk 189 No 282.
- ²²³ NSW Land Registry Services, OST Deed Bk 224 No 532.
- ²²⁴ 'Insolvency Court', *Evening News*, 3 November 1882, p 2, Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article107994177>>.
- ²²⁵ 'Advertising', *The Cumberland Mercury*, 28 April 1883, p 5, Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article248619885>>.
- ²²⁶ 'Advertising', *Cumberland Mercury*, 2 February 1884, p 5, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article248783758>>.
- ²²⁷ 'Public Notice', *Cumberland Mercury*, 4 October 1884, p 5, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article248786894>>.
- ²²⁸ NSW Land Registry Services, OST Deed Bk 341 No 802.
- ²²⁹ 'Death of Mr. T. Jones', *The Cumberland Argus and Fruitgrowers Advocate*, 16 October 1897, p 3, Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article85770988>>.
- ²³⁰ 'Hospital Items', *The Cumberland Argus and Fruitgrowers Advocate*, 27 July 1898, p 4, Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article85840292>>.
- ²³¹ 'Parramatta District Attempted Burglary', *The Sydney Morning Herald*, 13 November 1901, p 9, Trove, National Library of Australia, viewed 1 Sep 2021 <<http://nla.gov.au/nla.news-article14422180>>.
- ²³² 'Parramatta Council', *The Cumberland Argus and Fruitgrowers Advocate*, 6 December 1905, p 1, Trove, National Library of Australia, viewed 28 Jul 2021 <<http://nla.gov.au/nla.news-article86178236>>.
- ²³³ 'Parramatta Council', *Cumberland Argus and Fruitgrowers Advocate*, 29 March 1916, p 3, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article86070688>>.
- ²³⁴ NSW Land Registry Services, CT Vol 4826 Fols 188, 189, 190.
- ²³⁵ NSW Land Registry Services, CT Vol 5576 Fol 233.
- ²³⁶ NSW Land Registry Services, CT Vol 5576 Fol 233.
- ²³⁷ NSW Land Registry Services, CT Vol 5576 Fol 233.
- ²³⁸ State Archives & Records, Copies of Deeds to Land Grants and Leases, Town Leases, Parramatta, 1823, No 71, viewed 21 Jul 2021, ancestry.com.au.
- ²³⁹ Niel Gunson, 'Oakes, Francis (1770–1844)', *Australian Dictionary of Biography*, National Centre of Biography, Australian National University, published first in hardcopy 1967, accessed online 24 July 2021 <<https://adb.anu.edu.au/biography/oakes-francis-2513/text3397>>.

- 240 'Grants of Town Allotments', *New South Wales Government Gazette*, 5 January 1838, p 19, Trove, National Library of Australia, viewed 29 Jul 2021 <<http://nla.gov.au/nla.news-article230385496>>.
- 241 State Archives & Records, *Registers of Land Grants and Leases, Parramatta Town Grants 1831-1842*, No 66, Register No 42 No 101, <ancestry.com.au>.
- 242 NSW Land Registry Services, Memorial, Bk E No 108.
- 243 'William (Faithfull) Faithful, Free Settler "Pitt"1792', Geni, viewed 9 Jul 2021 <<https://www.geni.com/people/William-Faithfull-Faithful-Free-Settler-Pitt-1792/6000000010918360432>>.
- 244 NSW Land Registry Services, OST Deed Bk 211 No 873.
- 245 NSW Land Registry Services, OST Deed Bk 211 No 873.
- 246 NSW Land Registry Services, OST Deed Bk 1208 No 28.
- 247 NSW Land Registry Services, CT Vol 3363 Fol 140.
- 248 NSW Land Registry Services, CT Vol 3363 Fol 140.
- 249 NSW Land Registry Services, CT Vol 3363 Fol 140.
- 250 State Records Authority of New South Wales; *Copies of Deeds to Land Grants and Leases*; Series: NRS 13836; Item: 7/487; Reel: 2704. Ancestry.com.au, 4 Aug 2021.
- 251 PL Brown, 'Batman, John (1801–1839)', *Australian Dictionary of Biography*, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/batman-john-1752/text1947>, published first in hardcopy 1966, accessed online 25 July 2021.
- 252 State Archives & Records, Series: NRS 898; Reel or Fiche Numbers: Reels 6020-6040, 6070; Fiche 3260-3312.
- 253 State Archives & Records, 1823 Col Sec Papers, Special Bundles 1794-1825.
- 254 'William Batman's Will', *Gosford Times*, 19 Jan 1922 p 7, Trove, National Library of Australia, viewed 3 Aug 2021 <<http://nla.gov.au/nla.news-article161547037>>.
- 255 NSW Land Registry Services, OST Deed Bk E No 960.
- 256 NSW Land Registry Services, OST Deed Bk J No 309.
- 257 NSW Land Registry Services, OST Deed Bk O No 314.
- 258 State Archives & Records, *Colonial Secretary, Land and Town Purchases and Grants, 1840-1842*, ancestry.com.au, viewed 1 Aug 2021.
- 259 'Death of Mrs Houison', *The Sydney Morning Herald*, 13 May 1899, p 10, Trove, National Library of Australia, viewed 4 Aug 2021 <<http://nla.gov.au/nla.news-article14214206>>.
- 260 'Old Home', *Sun*, 8 March 1931, p 2, Trove, National Library of Australia, viewed 3 Aug 2021 <<http://nla.gov.au/nla.news-article224664825>>.
- 261 NSW Land Registry Services, CT Vol 4463 Fol 148.
- 262 NSW Land Registry Services, CT Vol 4599 Fol 249.
- 263 NSW Land Registry Services, CT Vol 4623 Fol 149.
- 264 NSW Land Registry Services, CT Vol 4638 Fol 125.
- 265 NSW Land Registry Services, CT Vol 4599 Fol 249.
- 266 'Big Business Migration Means Golden Years Ahead for Parramatta', *Cumberland Argus*, 12 May 1954, p 1, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article132142420>>.
- 267 'Historic Building Becomes Modern Insurance Office', *The Sun*, 19 March 1954, p 8 (A Special Sun Supplement), Trove, National Library of Australia, viewed 4 Aug 2021 <<http://nla.gov.au/nla.news-article229420306>>.
- 268 'New Work for Old', *The Cumberland Argus*, 15 February 1956, p 4 (City of Parramatta 1ST HOMES EXHIBITION), Trove, National Library of Australia, viewed 4 Aug 2021 <<http://nla.gov.au/nla.news-article131390846>>.
- 269 NSW Land Registry Services, CT Vol 7372 Fol 157.
- 270 NSW Land Registry Services, CT Vol 4623 Fol 149.
- 271 NSW Land Registry Services, CT Vol 4623 Fol 149.

- 272 'Was it Batman's', *The Cumberland Argus and Fruitgrowers Advocate*, 22 July 1937, p 16, Trove, National Library of Australia, viewed 4 Aug 2021 <<http://nla.gov.au/nla.news-article106152123>>.
- 273 'Advertising', *The Sydney Morning Herald*, 25 October 1947, p 36, Trove, National Library of Australia, viewed 4 Aug 2021 <<http://nla.gov.au/nla.news-article18043753>>.
- 274 Parramatta Building Register 305/1966, City of Parramatta Research & Collections.
- 275 'Office opens for services', *The Broadcaster*, 5 September 1967, p 1, Trove, National Library of Australia, viewed 4 Aug 2021 <<http://nla.gov.au/nla.news-article164912193>>.
- 276 NSW Land Registry Services, CT Vol 4638 Fol 125.
- 277 *Parramatta Building Register*, BA38/1953, City of Parramatta Research & Collections.
- 278 'Concrete Pour Was Record', *The Cumberland Argus*, 15 July 1953, p 2, Trove, National Library of Australia, viewed 4 Aug 2021 <<http://nla.gov.au/nla.news-article132142647>>.
- 279 'Big Business Migration Means Golden Years Ahead for Parramatta', *Cumberland Argus*, 12 May 1954, p 1, Trove, National Library of Australia, viewed 21 Jul 2021 <<http://nla.gov.au/nla.news-article132142420>>.
- 280 NSW Land Registry Services, CT Vol 6744 Fol 137.
- 281 NSW Land Registry Services, CT Vol 6744 Fol 137.
- 282 NSW Land Registry Services, CT Vol 14231 Fol 37
- 283 NSW Land Registry Services, CT Vol 11252 Fol 59.
- 284 State Archives & Records, *Copies of Deeds to Land Grants and Leases, Town Leases Parramatta 1823 vol 2*, ancestry.com.au, viewed 26 July 2021.
- 285 State Archives & Records, *Copies of Deeds to Land Grants and Leases, Town Leases Parramatta 1823 vol 2*, ancestry.com.au, viewed 26 July 2021.
- 286 'Court of Claims', *New South Wales Government Gazette*, 23 May 1854, p 1075, Trove, National Library of Australia, viewed 26 Jul 2021 <<http://nla.gov.au/nla.news-article230696381>>.
- 287 'Country News', *The Australian*, 23 May 1844, p 3, Trove, National Library of Australia, viewed 26 Jul 2021 <<http://nla.gov.au/nla.news-article37123230>>.
- 288 'Land Sale', *Government Gazette of the State of New South Wales* 3 August 1904, p 6005, Trove, National Library of Australia, viewed 25 July 2021 <<http://nla.gov.au/nla.news-article226482823>>.
- 289 NSW Land Registry Services, CT Vol 1688 Fol 245.
- 290 'Advertising', *Cumberland Argus and Fruitgrowers Advocate*; 6 January 1906, p 6, Trove, National Library of Australia, viewed 25 July 2021 <<http://nla.gov.au/nla.news-article85942281>>.
- 291 NSW LRS, CT Vol 2077 Fols 121/122.
- 292 Australian Electoral Commission, Electoral Rolls, Parramatta—Parramatta Polling Place, 1913, viewed 25 July 2021 <ancestry.com.au>.
- 293 'Parramatta Business Romance', *The Cumberland Argus and Fruitgrowers Advocate*, 3 February 1917, p 6, Trove, National Library of Australia, viewed 25 Jul 2021 <<http://nla.gov.au/nla.news-article86089207>>.
- 294 NSW Land Registry Services Vol
- 295 NSW Land Registry Services, CT Vol 2885 Fol 153.
- 296 NSW Land Registry Services, CT Vol 3983 Fols 42/43.
- 297 'Personal and General', *The Methodist*, 18 April 1936, p 9, Trove, National Library of Australia, 25 Jul 2021 <<http://nla.gov.au/nla.news-article155283410>>.
- 298 'Good Things On The Jumble-Stall', *The Daily Telegraph*, 12 March 1936, p 3 (Boys and Girls Telegraph). Trove, National Library of Australia, viewed 25 Jul 2021 <<http://nla.gov.au/nla.news-article246723799>>.
- 299 Ancestry.com. Australia, Electoral Rolls, 1903-1980 [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2010.
- 300 Ancestry.com. Australia, Electoral Rolls, 1903-1980 [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2010.
- 301 NSW Land Registry Services, CT Vol 4685 Fol 234.

Aboriginal Archaeology

3 Aboriginal archaeology

3.1 Introduction

A detailed Aboriginal archaeological assessment has been prepared for the site¹. The report includes a review of the site's environmental and archaeological context and previous developments to assess the potential for Aboriginal heritage archaeological sites, places, objects, connected landscapes and thus values associated with the site. A summary of the Aboriginal archaeological context of the site taken from the report is presented below.

3.2 Sedimentary background

In recent years, Aboriginal heritage and sedimentary investigations within Parramatta have sought to understand the relationships between landforms, soil landscapes, and long-term trends in archaeological deposits. When synthesised together this body of work provides some insight and understanding regarding Aboriginal peoples' habitation and lifeways across Parramatta over 40,000 years.

Parramatta is associated with three different soil landscapes: Blacktown residual soils; Parramatta Sand Body (PSB); and a late Pleistocene to Holocene alluvial clay and sand. The Blacktown residual soil is formed through in situ weathering of the underlying bedrock and has low potential for stratified archaeological deposits. The PSB is a sand deposit that has demonstrated potential for stratified Aboriginal archaeological deposits up to 40,000 years old. The late alluvial clay and sand (thought to be terminal Pleistocene at the earliest, but more likely Holocene in deposition age) has not been widely excavated and is not well understood. Recent excavations have found Aboriginal archaeological deposits only associated within a thin unit of pale silty of the alluvium, described as an A2 horizon.

Available geotechnical data from both within the site and the immediate surrounds indicates that most of the study area should be associated with the Holocene alluvial soil landscape, and a possibly separate alluvial soil in the southeast corner associated with a former creek. The data suggests an absence of PSB inside the Metro site, although this must be confirmed through field testing. One borehole identified potential Blacktown soils towards the southeast corner of the Metro site.

3.3 Previous archaeological investigations

A large number of Aboriginal archaeological excavations have been carried out across Parramatta. Recent analysis of 25 Aboriginal sites across Parramatta has provided an understanding of how occupation and interaction within the landscape changed over 40,000 years. Prior to sea levels rising at the end of the Pleistocene (around 10,000 years ago), the Parramatta River was not tidal and formed a small freshwater creek. Pleistocene period sites are clustered along the eastern edge of Parramatta. After the river became tidal, it led to significant changes in environmental conditions and ecological diversity. It is likely that the centre of Parramatta's CBD became a wetland area and would have been swampy during wetter periods in the Holocene (resulting in the formation of the alluvial soil landscape). Occupation during this period was more frequent (compared to the Pleistocene), testified by the numerous archaeological sites identified across the CBD surrounding the wetland (Figure 3.1). Changes in the patterning of Aboriginal sites appears to have occurred in the last 1,500 years prior to colonisation and may relate to social, demographic and economic changes.

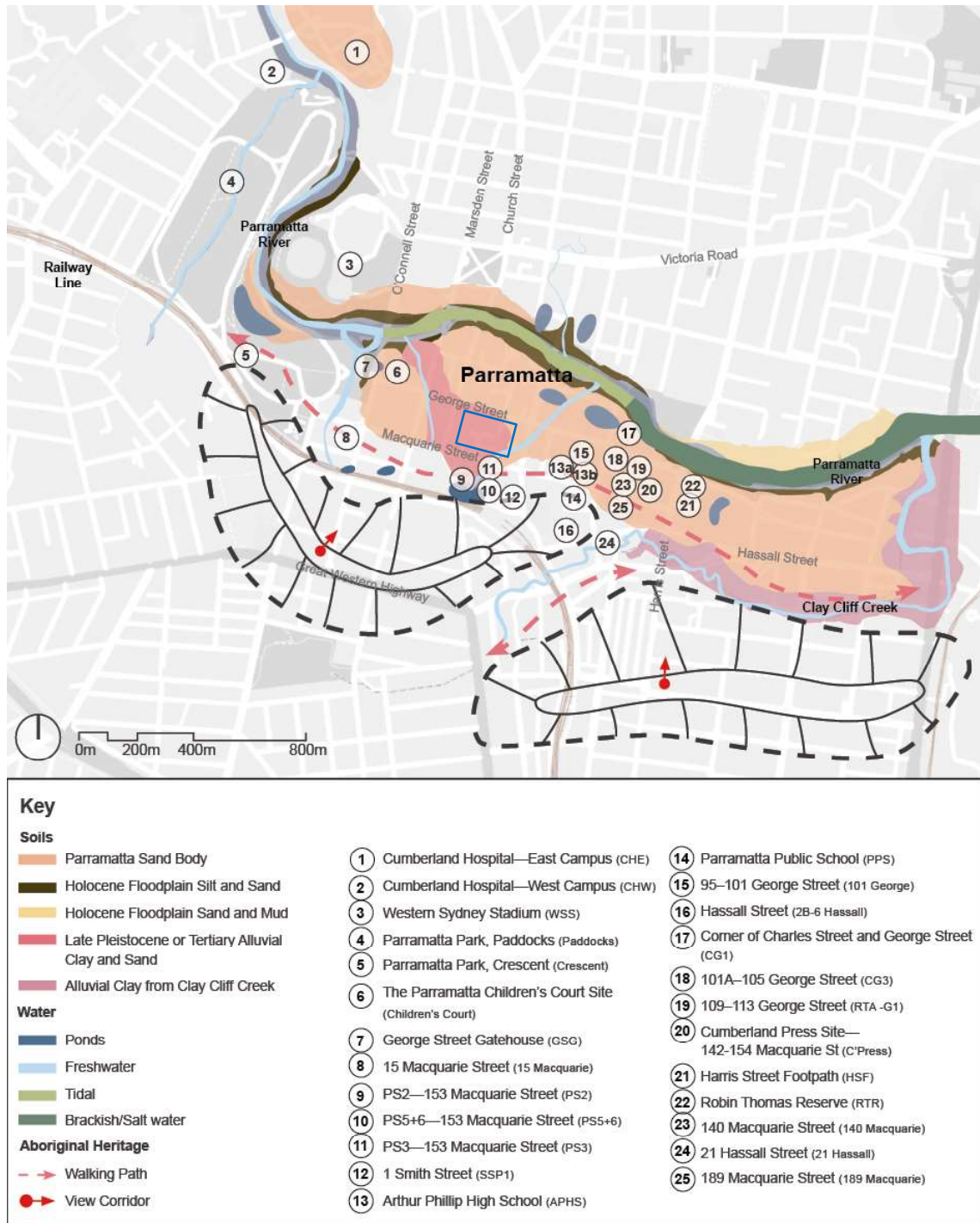


Figure 3.1 Aboriginal places, features and interpretation of the Holocene Aboriginal cultural landscape prior to colonisation. The approximate location of the subject site is north of site 11, in the blue rectangle. (Source: Owen and DCKN, submitted, Figure 10)

3.3.1 Occupation sequence

The periods of Aboriginal occupation were grouped under the Eastern Regional Sequence (ERS),² which describes four main phases, each with its own primary technological characteristics:

- Phase 1—Pre-Bondaian, prior to 7,000 Before Present (BP)
- Phase 2—Bondaian, after 7,000 BP to 1,500 BP
- Phase 2B—Late Bondaian, after 1,500 BP to 1788
- Phase 3—the ‘Contact Phase’, following British colonisation in 1788.

3.4 Geotechnical data

The geotechnical data suggests an absence of PSB inside the site. The site appears to be predominantly associated with Holocene alluvium, and possibly a separate alluvial soil in the southeast corner. It should be expected that a depth of fill 0.5 metres deep is present across the site. Below this introduced layer may be intact historical surfaces and remnant A₁/A₂ horizons.

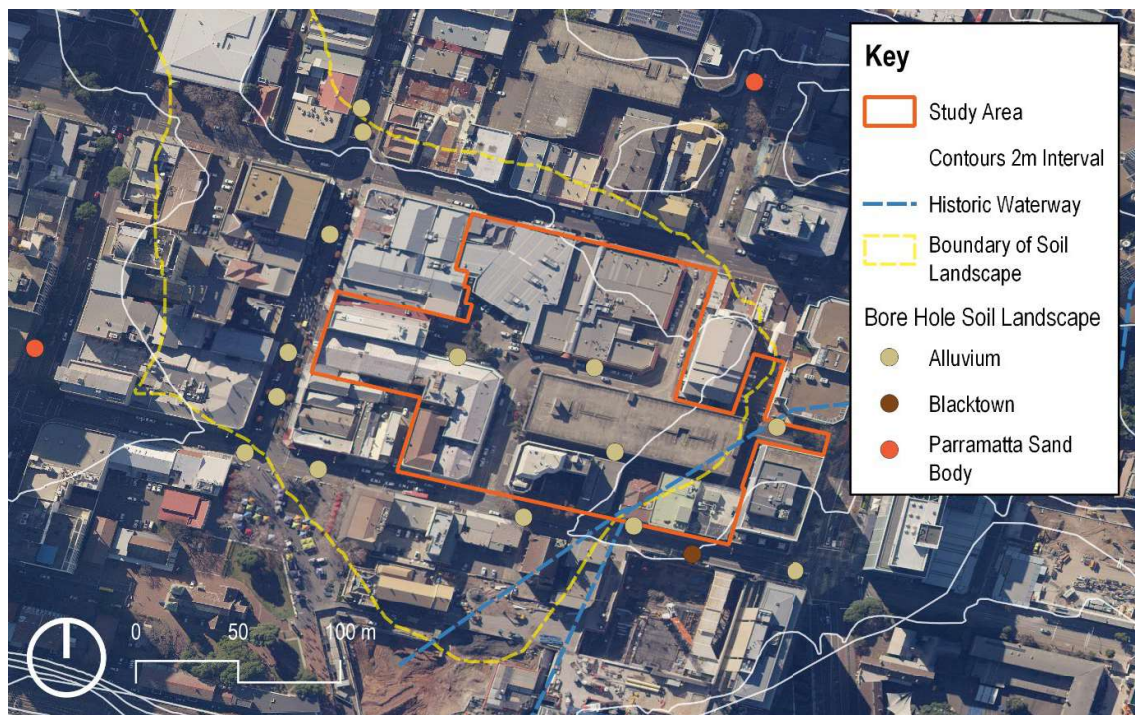


Figure 3.2 Interpretation of soil landscapes from the bore log data. This figure shows the contour lines, water course, and the boundary between the ‘Holocene alluvium clay and sand’ PSB/Blacktown soil landscapes. (Source: GML 2021 and Mitchell 2008, over Nearmap base map)

3.5 Archaeological zoning plan

The site has been divided into five zones of varying levels of archaeological potential, as informed by the analysis of soil landscapes and historical development across the site. A summary of each zone is presented in Table 3.1 and shown in Figure 3.3.

A 'sensitivity line' indicates locations to the east that may yield more extensive archaeological evidence of Aboriginal habitation —this is a hypothesis that needs to be tested through the Aboriginal archaeological investigation. The 'sensitivity line' is associated with the extent of the alluvial clay and sand that is thought to be associated with the formation of wetlands within the central and western part of the Metro site. Here the underlying impermeable clays could have created waterlogged conditions. The sensitivity line indicates locations to the east that may yield more extensive archaeological evidence of Aboriginal habitation. Land to the east of the line is likely to hold shallower deposits of alluvium (up to 300mm deep) and may retain Aboriginal archaeological evidence. Land to the west of the line is less likely to yield Aboriginal archaeological evidence, potentially because it is likely to have been associated with the wetland zone but may retain a detailed paleo-soil and pollen record. This record could provide a detailed insight into ecological regimes over the period of its formation, an aspect of detail currently absent from the outcomes of other investigations in Parramatta to date.

Analysis of historical impacts indicates around half of the site may have been subjected to historical disturbance that could have removed Aboriginal archaeological deposits; the other half may have remnant intact soil horizons (this is referred to as the condition of the soils). Development impacts across the site have also informed the zoning plan.

Table 3.1 Aboriginal archaeology zoning within the site.

Zone	Historical changes and soil integrity/condition	Possible Aboriginal archaeology
1	Zones 1 has the fewest post-1788 impacts and changes; soils could retain good condition. The area is principally connected with yards, and 'movement' through the site. Some activities could have turned soil horizons over, but deposits would be expected to have moderate to good integrity.	Bore logs suggest 0.5m of fill is present, which could cap Holocene alluvium A1 and A2 horizons. If intact, the depth of A2 with Aboriginal archaeology could be between 300mm and 500mm deep. This should interface with a higher plasticity B horizon clay, which has no archaeological potential.
2	As for zone 1.	This zone is associated with the mapped extent of PSB, and also the water channel. Fluvial actions could have eroded PSB and deposited a further type of alluvium in this zone. Archaeology could be associated with A1 and A2 horizons of the alluvium, to a depth of 0.5m (?), below which PSB could be present, with further archaeological deposits to a depth of 1.5m below the current surface level (assuming 0.5m of fill).
3	Zone 3 has been subject to similar impacts to zones 1 and 2, until the construction of the car park. This action may have cut soil horizons, and no remnant soils with archaeological potential may remain in this zone. The condition and integrity of soils requires clarification through further sedimentary analysis.	If remnant soils are present, zone 3 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.
4	Zone 4 is associated with construction of houses and warehouses. These features will have cut wall foundations into the underlying basal clay, removing soils with the potential for archaeological deposits. Locations inside rooms can retain a full soil profile (as occurred in APHS Q1). More recent buildings are likely to have basements or lower	Where remnant soils are present, zone 4 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.

Zone	Historical changes and soil integrity/condition	Possible Aboriginal archaeology
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floor levels which have cut remnant soils. The condition and integrity of soils below each building could vary between none and good, depending on how each building was constructed.

5 Zone 5 is associated with a historical archaeological excavation completed in 1996 prior to construction of the existing building. The results of this excavation were not available at the time of preparing this report and the survival of remnant soils with archaeological potential is not known.

Where remnant soils are present, zone 5 could present archaeological deposits according to the soil landscape. The description for zone 1 would be applicable. The survival of remnant soils can be clarified following removal of the building.

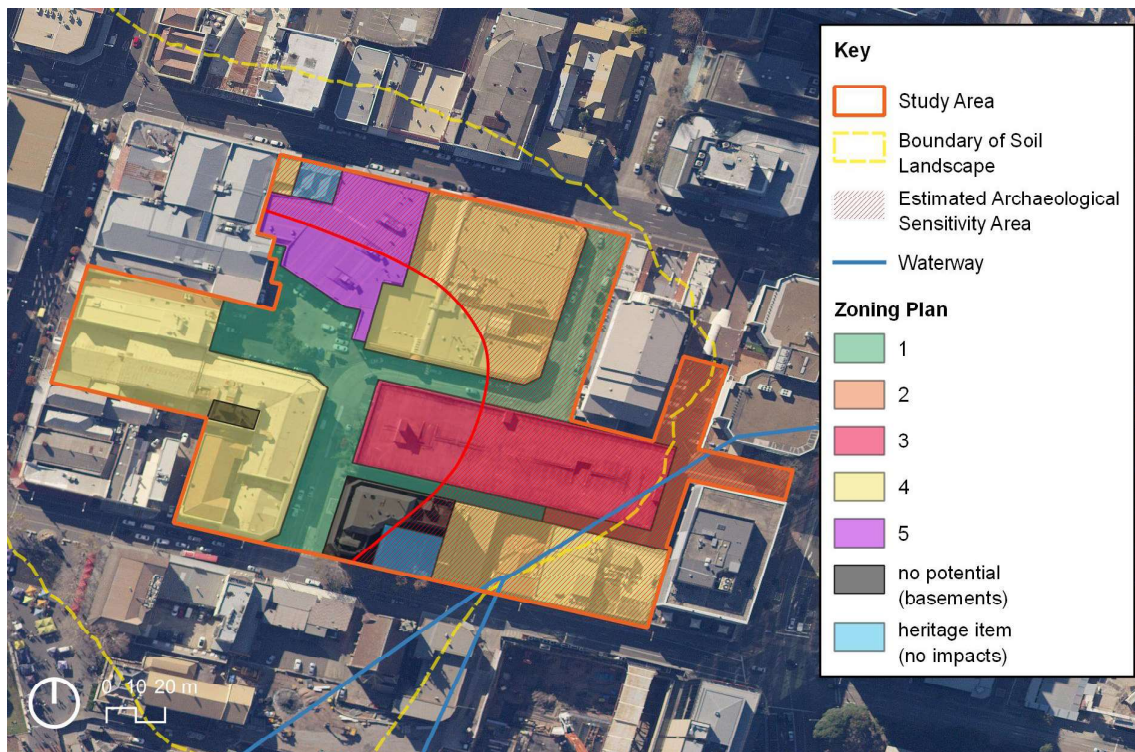


Figure 3.3 Aboriginal archaeology zoning plan for the site with hypothetical 'sensitivity line'. (Source: GML 2021, over Nearmap)

3.6 Endnotes

- ¹ Sydney Metro Parramatta Station Construction Site Aboriginal Heritage Report, prepared by GML, August 2021.
- ² Hiscock, P. and Attenbrow, V. 2005 Australia's Eastern Regional Sequence Revisited: Technology and Change at Capertee 3. BAR International Series 1397. Oxford: Archaeopress.
White, B 2017, 'Analysis with Confidence: Distinguishing Pre-Bondaian and Bondaian IMSTC Artefact Assemblages from the Cumberland Plain of Western Sydney, New South Wales', Australian Archaeology, vol 83, no 3.
White, B 2018, 'Time matters on shallow open sites: An example from Western Sydney, Australia', Doctor of Philosophy, University of Sydney, Sydney.

Historical Archaeology

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4 Historical archaeology

4.1 Introduction

This section provides a revised assessment of the site’s historical archaeological potential and significance. The assessment has been informed by the detailed site history, a review of comparative archaeological studies, geotechnical borehole data, and previous developments within the site. The site is large—almost a city block—and has a complex history of subdivision and development. Archaeological phases provide the framework for discussing the potential within each historical lot (Crown allotments). To identify and refer to specific areas within the site, current street addresses and road names have been used.

4.2 Previous assessments

The site is included in the Parramatta Historical Archaeological Landscape Management Plan (PHALMS) prepared in 2000. The Concept and Stage 1 EIS included an historical archaeological assessment for the Parramatta station construction site. The outcomes of these assessments are discussed below.

4.2.1 PHALMS

The site includes six Archaeological Management Units (AMUs) identified in PHALMS (Figure 4.1). The AMUs include a high-level assessment of potential and significance based on available data at the time. Recommendations for AMU with archaeological potential include undertaking detailed archaeological assessment. Our understanding of archaeological potential and significance has developed since PHALMS was published twenty years ago. Results from many archaeological investigations provide additional data on the archaeology of Parramatta. The PHALMS AMUs provide a starting point in undertaking a detailed archaeological assessment for the site. The AMU assessment outcomes and comments regarding this detailed assessment are provided in the table below (Table 4.1).

Table 4.1 The PHALMS AMUs within the site.

AMU	Location	Assessment
283	41–53 George Street	<p>No potential or significance due to construction of Officeworks building in 1996. Archaeological investigations undertaken at the time and PHALMS conclude the site is unlikely to yield further archaeological potential.</p> <p>Comment</p> <p>However, there is a reference in <i>Breaking the Shackles</i> to a convict hut location conserved in situ within the new development.³⁰⁶</p>
3075	Multiple lots on Church, George and Macquarie Streets, and Horwood Place	<p>High potential for intact archaeological deposits and with minimal disturbance. The AMU is assessed in PHALMS as being state significant with exceptional research potential. There is a reference to a basement to the rear of 232–234 Church Street which is likely to have removed archaeology in its footprint.</p> <p>Comment</p> <p>The basement impact to the rear of 232–234 Church Street is corroborated in this assessment. Additional developments within this AMU have occurred since 2000—these are identified below. Installation of new services have also occurred within Horwood Place.</p>

AMU	Location	Assessment
3177	Car park at 71 George Street	<p>No potential or significance. The construction of the multi-level car park is likely to have removed archaeological evidence.</p> <p>Comment</p> <p>The car park does not include a basement. Additional data—geotechnical or archaeological studies—to verify the AMU conclusion were not identified during research for this assessment.</p>
3178	Corner Macquarie and Smith Streets	<p>High potential for intact archaeological deposits and with minimal disturbance. The AMU is assessed in PHALMS as being state significant with high research potential.</p> <p>Comment</p> <p>A large portion of this AMU was subject to archaeological salvage excavation in 2003 in advance of redevelopment at 25 Smith Street/76–78 Macquarie Street. The results from the investigations confirmed significant archaeology dating from the early 1800s is present in the AMU.</p>
3180	60 Macquarie Street	<p>No potential or significance. Construction of the existing building is likely to have removed all archaeological evidence in the AMU.</p> <p>Comment</p> <p>This is also the conclusion of this assessment.</p>
3181	70–72 Macquarie Street	<p>No potential or significance. Construction of the existing building is likely to have removed all archaeological evidence in the AMU, though the report also notes that a comprehensive assessment of the AMU had not been undertaken.</p> <p>Comment</p> <p>A detailed assessment of this AMU has been undertaken and there may be archaeological potential in the southern part fronting Macquarie Street. See below for discussion.</p>



Figure 4.1 Plan showing the PHALMS AMU within the site. (Source: GML 2000 with Nearthmaps aerial)

4.2.2 The EIS

The EIS included an historical archaeological assessment for the Parramatta station construction site. The report included a brief historical background, identified several previous archaeological studies including PHALMS and previous ground disturbances, though also noting that basement data was not available. The approach to the archaeological assessment was to group the properties by street and discuss the potential by each archaeological phase separately. The report concluded the site had low to moderate potential for state and locally significant historical archaeology. The EIS assessment is considered high-level as it did not include detailed site-specific research and analysis for each allotment or property.

4.3 Comparative archaeological studies

4.3.1 Archaeological investigations within the site

Three previous archaeological investigations have been undertaken within the site. The results of these projects are summarised below and their locations shown on Figure 4.8

41–53 George Street, Test Excavation, AMAC, 1996¹

A program of test excavation, localised salvage excavation, and monitoring was carried out in advance of redevelopment at 41–53 George Street by AMAC in 1996. The testing program involved excavation of 10 trenches (1 metre x 1 metre) across the northern half of the site within the proposed building footprint. The testing demonstrated the potential for late eighteenth and nineteenth century archaeological deposits and features below the former car park and outside the footprint of the late nineteenth-century buildings. Archaeological inspection of the underfloor cavities within the heritage listed buildings at 43–47 George Street determined that no underfloor deposits survived within these buildings.

The salvage excavation covered an area measuring 25 metres x 25 metres in the northwest of the site (Figure 4.2). The excavation found remains of a 1790s convict hut near the western edge of the site. The north and south walls of the hut survived as a series of postholes cut into the B-horizon clay. No evidence for the eastern or western walls or the chimney was identified. Evidence for two major phases of repair comprised the rebuilding of both the front (northern) and rear (southern) walls on separate occasions, along with several timber additions built at the rear of the hut. The salvage excavation also recorded remains of a timber building containing a 'smithy', kitchen and stables recorded on an 1848 plan of the site. Remains of two wells and a beehive cistern were also preserved within the site. One well was capped with cement, while the second well and cistern were partially preserved below the existing sewer line. Large quantities of artefacts were recovered from the rear yards. This included glass bottles and stoppers associated with a cordial factory operated by Peter Miller on the site in the 1850s and 1860s, and medical and pharmaceutical related items attributed to the chemist Woolcott who operated on site in the 1870s.

The location and extent of archaeological monitoring undertaken in 1996 is not documented in the excavation report.² An archaeological assessment of the site prepared by AMAC in 2004 includes a plan that shows the southern part of the site was subject to archaeological monitoring with deposits removed down to sterile B-horizon clay substrate (Figure 4.2). However, it is not known what was found within this part of the site or if any archaeological remains were preserved below the construction impacts.

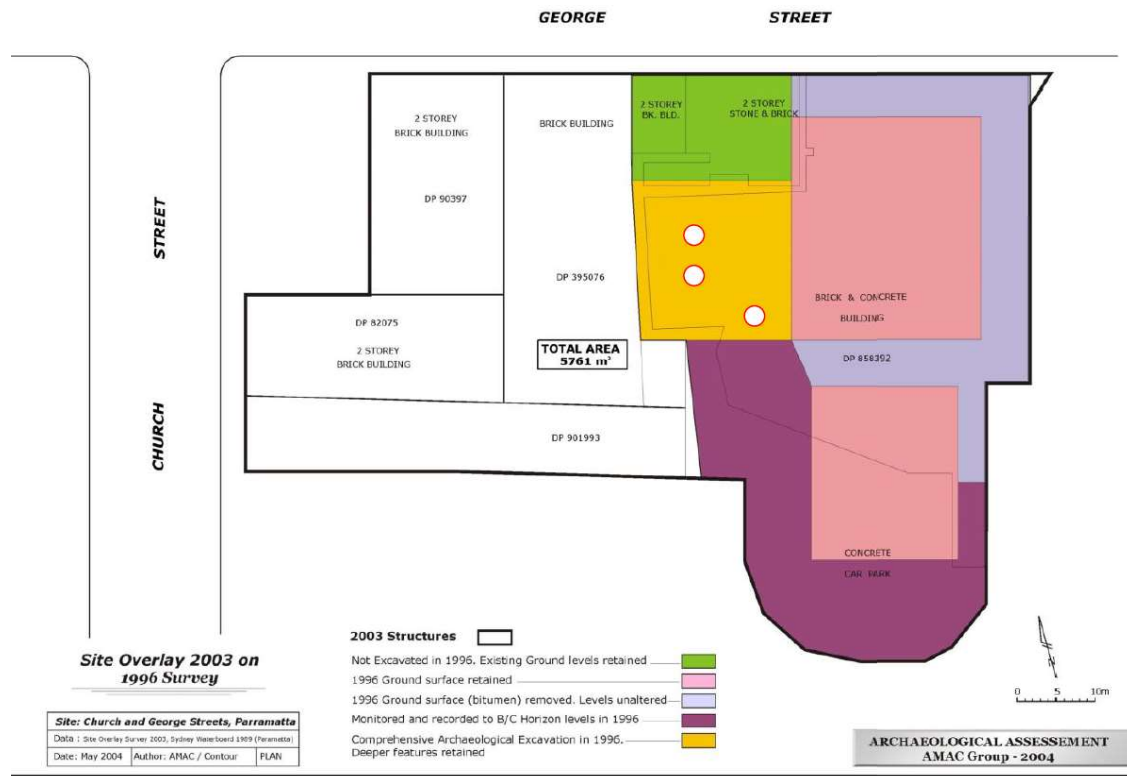


Figure 4.2 Plan of 41–53 George Street showing the areas subject to archaeological investigation in 1996 by AMAC. The area of salvage excavation is shaded yellow, with the area shaded dark purple subject to archaeological monitoring. The areas shaded pink and light purple were not impacted by development and have potential for archaeological remains. The unshaded areas are outside the site. (Source: AMAC 2004³)

236 Church Street, Partial Salvage Excavation, Austral, 2006⁴

A program of monitoring and localised salvage excavation was carried out by Austral at 236 Church Street in 2006. A copy of the final excavation report was not available at the time of preparing this assessment. This summary has been prepared based on a preliminary report and photographs taken during the salvage excavation.

Remains of a c1840s sandstone cellar and mid–late nineteenth-century brick floor were uncovered during the monitoring program (Figure 4.3). The cellar is set back 10 metres from the Church Street frontage. The section uncovered comprised the southern portion of the cellar and measured 10 metres long and 1.8 metres wide. The remainder of the cellar continues below the adjoining building at 238 Church Street to the north, the extent and intactness of which is not known. The sandstock brick floor was located at the eastern end of the building.

Salvage excavation involved excavation of the cellar fills and deposits above the brick floor. The preliminary report identified that potential archaeological deposits capping the brick floor could be 850 millimetres deep, although photographs during the excavation suggest this deposit is likely to be about 500 millimetres thick (Figure 4.5). A late nineteenth-century bottle dump, containing predominantly c1840s–1870s dark green glass (totalling 40 kilograms), was found below the footing for the extant early twentieth-century building.

The cellar and brick floor were retained on site below the floor slab of the new development.

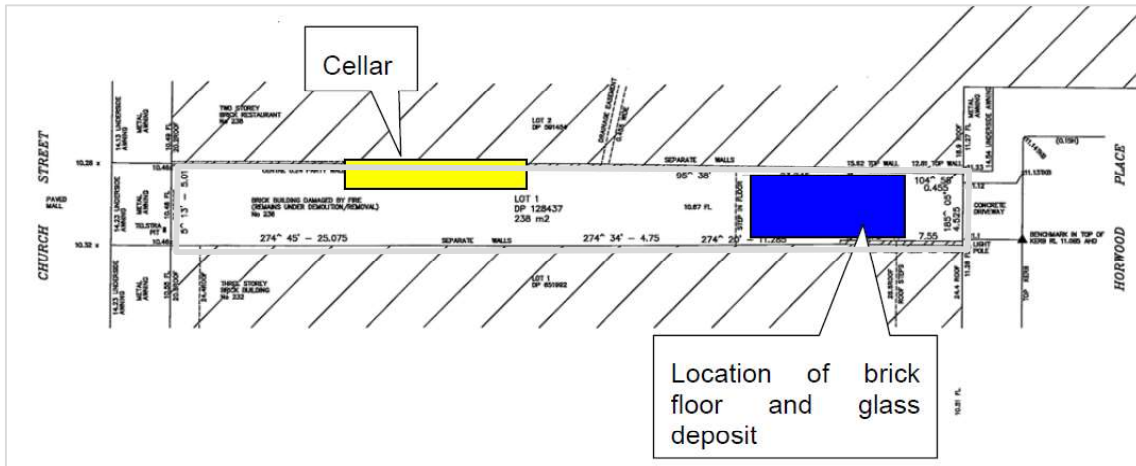


Figure 4.3 Plan of 236 Church Street showing the location of the cellar and brick floor, both retained within the site. (Source: Austral 2006⁵)



Figure 4.4 Looking east at the c1840s sandstone cellar uncovered during archaeological investigations at 236 Church Street. (Source: Yvonne Kaiser-Glass 2006)



Figure 4.5 Remains of a brick surface uncovered during archaeological investigations at 236 Church Street. (Source: Yvonne Kaiser-Glass)

Parramatta Square Trunk Sewer, Macquarie Lane, Casey & Lowe, 2020–2021⁶

Casey & Lowe undertook archaeological monitoring and localised archaeological salvage excavation along the route of the trunk sewer at 70 Macquarie Street and the eastern part of Macquarie Lane. The sewer was installed through a combination of excavated trenches and underboring, with 16 trenches subject to archaeological investigation. The trenches varied in size from less than 500 millimetres by 500 millimetres up to 2.5 metres by 6 metres.

Either historical archaeological remains or intact historical topsoil deposits were encountered in 11 of the 16 trenches (Figure 4.6). The depth of historical topsoil deposits below the modern surface is presented in Table 4.2. Archaeological remains encountered included a sandstone wall footing, a possible sandstone pavement, sandstock brick features, postholes, agricultural marks and a section of the Convict Drain (see Section 4.8.3 for further discussion). The depths at which archaeological remains were encountered varied from 400 millimetres to 900 millimetres below the modern ground surface.

Table 4.2 Depth of historical topsoil deposits within Macquarie Lane and 70 Macquarie Street.

Test trench	Historic Lot	Depth of historical topsoil below surface
TT1	Lot 76	900mm below ground level (mmbgl)
TT2	Lot 74	450mmbgl
TT3	Lot 28	200mmbgl
TT9 (Convict Drain)	Lot 74	380mm to top of drain
TT10	Lot 28	~600mmbgl
TT11	Lot 28	380mmbgl
TT12 (Convict Drain)	Lot 74	380mm to top of drain
TT13	Lot 28	800mmbgl
TT14	Lot 75	400mmbgl
TT15	Lot 28	300mmbgl



Figure 4.6 South-facing section in Test Trench 10 showing the intact soil profile below modern levelling fills. (Source: Casey & Lowe 2021)

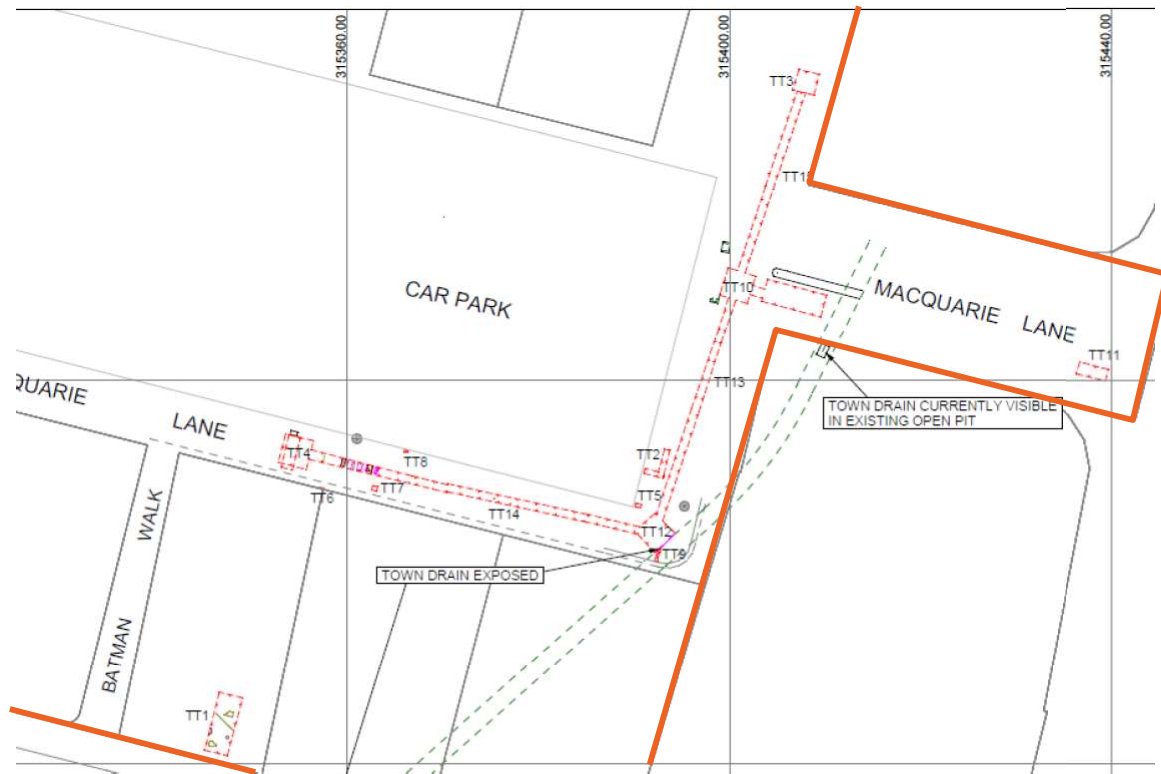


Figure 4.7 Plan showing location of trenches within 70 Macquarie Street and Macquarie Lane. The site boundary is outlined in orange. (Source: Casey & Lowe 2021 with GML overlay)

4.3.2 Archaeological investigations adjacent to the site

Given the quantity of historical archaeological investigations carried out over the past 30 years within Parramatta, a detailed review of archaeological investigations was limited to a one-block radius around the site, being sites on George Street, Smith Street, Macquarie Street and Church Street facing the current site (Figure 4.4). These sites have comparable historical development and occupation patterns and the results adequately demonstrate the range of archaeological sites and features that may be encountered within the site. The results of these archaeological investigations, and implications for the site, are summarised in Table 4.3 and their locations shown on Figure 4.8. These investigations have uncovered archaeological evidence for the development of Parramatta, including agricultural, domestic, commercial and industrial activities, from the late eighteenth through to the early twentieth centuries.

Table 4.3 Archaeological excavations carried out within the site and within one block of the current site. Each excavation has been numbered to allow for ease of identification on Figure 4.4.

No.	Address	Description and discussion
1	25 Smith Street, 76–78 Macquarie Street	<p>Test and Salvage Excavations, Edward Higginbotham and Associates, 2003⁷</p> <p>The excavation included three of the original town allotments: 28, 72, and 74. No archaeological evidence of the early–mid nineteenth-century buildings was found at 25 Smith Street (Allotment 28), which had been removed by later development.</p> <p>In the southwest part of the site, on Allotment 74, remains of an early nineteenth-century timber building fronting Macquarie Street and a later 1820s–1830s masonry</p>

No.	Address	Description and discussion
		<p>building to the rear was found. Other postholes associated with the main building were thought to relate to fence lines and/or a possible outbuilding.</p> <p>In the southeast part of the site, archaeological remains of an 1840s masonry building were preserved between the footings of a 1930s building (Exeter House). Occupation deposits were preserved within the building rooms. In the rear yard space of this building was an unlined well shaft, 5m deep, and three cesspits up to 0.8m deep.</p> <p>Remains of the Convict Drain were uncovered in the northwest corner of the site. The sides of the drain were lined with roughly shaped sandstone blocks, laid in two or three courses, with the base left unlined. The capping of the drain had been replaced in the twentieth century with concrete slabs.</p> <p>Within the site the original ground level was found to slope down from the southeast towards the northwest. Archaeological remains in the southeast corner of the site lay at 9.4–9.8m above Australian Height Datum (AHD), dropping down to 8.3m AHD in the northwest of the site. This slope in the landscape may be associated with a creek that was partially channelised by the Convict Drain (see also Section 4.7.3).</p> <p>Results from this excavation have provided information regarding the landscape and archaeological site formation for the southeast part of the site. They also demonstrate that archaeological evidence of early nineteenth-century buildings and occupation deposits can survive between impacts from later nineteenth or early twentieth-century redevelopments. The remaining part of Lot 74 is within the metro station site and similar archaeology could be expected here and in adjacent lots to the west—lot 75, 77, 79 and perhaps 81. Location information for the Town Drain has informed our assessment and understanding of its alignment and potential within the Metro site.</p>
2	One Parramatta Square, 143–169 Macquarie Street	<p>Monitoring, Salvage Excavation, GML, 2014–2015⁸</p> <p>The excavation recorded structural remains of the c1844–1851 White Horse Inn Stables, a timber structure that survived as a group of postholes and timber plate slots, at the northern end of the site close to Macquarie Street. Also found was an early nineteenth-century brick and sandstone well and drain, possibly associated with an 1820s house on Macquarie Street, and a late nineteenth-century outbuilding with a sunken shelter or cellar.</p> <p>Across the southern part of the site were remains of late nineteenth-century residential properties along Smith Street. This included brick and sandstone footings, a group of late nineteenth-century rubbish pits, brick-lined cesspits and three brick beehive cisterns.</p> <p>The construction of Macquarie House, a commercial office building built in 1981 on the corner of Smith and Macquarie Streets, removed any archaeology within the site's footprint. The late nineteenth-century houses had either remained on site until the excavation or had been demolished, with the area converted into an above-ground car park.</p> <p>Results from this excavation provide information on the range of archaeology that could be expected from a large lot developed and subdivided from the 1820s onwards. Of note is the evidence of development and occupation behind the street-fronting buildings. The historic properties in the Metro site have large rear yards. Early historical maps generally record main buildings only, and at a particular moment in time. Results from this site, and many others in Parramatta, confirm that a range of archaeology associated with the yard spaces can be expected.</p>
3	1 Smith Street	<p>Salvage Excavation, Casey & Lowe, 2004⁹</p> <p>The excavation found remains of three late nineteenth-century houses and associated yards. A significant finding from the site was a large deposit of domestic refuse of late nineteenth and early twentieth-century items that was deposited in the 1930s into a cistern at 5 Smith Street.</p> <p>Results from this excavation provide information about later phases of archaeology and potential for artefact deposits associated with the early twentieth century. Artefact deposits dating to the early twentieth century are not typically found on urban archaeological sites. Municipal waste collection services developed around this time and rubbish was removed, rather than disposed of within properties. This site</p>

No.	Address	Description and discussion
		demonstrates that artefacts from the early twentieth century could be found and they could have significance in providing information about life in Parramatta during the Depression era.
4	3 Parramatta Square, formerly 153 Macquarie Street	<p>Salvage Excavation, Casey & Lowe, 2015–2016¹⁰</p> <p>The excavation found extensive archaeological evidence from the 1790s through to the late nineteenth century. Evidence for farming found in different parts of the site dated to the 1790s and 1830s. A section of the 1840s Town Drain was uncovered that showed evidence for channelisation of a pre-existing creek lined with timber planks possibly as early as c1800.</p> <p>Extensive evidence for water management, including timber-lined and brick drains, a well, a sump, and two phases of ground-raising (pre-1820s and c1880s) indicate the location of the site within a formerly waterlogged environment.</p> <p>Structural remains recovered include a four-room timber cottage, built c1822 and demolished in 1884, which featured a sandstone and brick chimney. This building also featured a sandstock brick drain that fed into the Town Drain. Remains of three brick 1880s houses were found on an adjacent lot, along with brick cesspits and a coach house.</p> <p>A mid-nineteenth century coaching service was built on a separate lot that included timber outbuildings, stables and brick drains. A late nineteenth-century sandstone outbuilding was associated with the residence on this plot.</p> <p>The lots at the western side of the site preserved limited evidence for early activity on site. A large underground storage pit was found, along with a late nineteenth-century sandstone outbuilding and sandstone fences.</p> <p>These results demonstrate the range of archaeology to be expected from investigations of multiple historical lots with multiple phases of use. Evidence of water management issues and solutions just to the south of the Metro site is relevant to our understanding of the environment and landscape during the early colonial period. Evidence of the earlier water channel associated with the Town Drain may be found in the Metro site. This site also demonstrated the potential for extensive archaeological remains to survive below 1960s developments.</p>
5	4 and 6 Parramatta Square (1A–1C Civic Place, 12–38 Darcy Street)	<p>Salvage Excavation, Casey & Lowe, 2016–2017¹¹</p> <p>The excavation found evidence for the creek that was formalised into the Town Drain, and two ponds shown on an 1858 map that had been backfilled with heavy clays. Remains of the 1850s occupation of the site had been impacted by construction of the Council Building basement and did not survive.</p> <p>The bulk of the archaeological evidence related to the late nineteenth-century development. This comprised four pairs of c1880s semi-detached houses and associated cesspits, and a single fully detached house. These properties provided evidence of an initial phase of residential occupation, followed by conversion of the sites in the early twentieth century for commercial occupation. Evidence of earlier brick and sandstone internal features survived below the concrete slabs.</p> <p>A large sandstone and concrete machine base was thought to be associated with a timber yard that operated on part of the site. Sandstone rubble walls, sandstock brick paving, and thick deposits of white plaster are associated with a plaster works that operated on the site c1920–1930.</p> <p>Results from this excavation provide an indication of the archaeology of residential buildings that are adapted for commercial uses in the late nineteenth and early twentieth century. This pattern of development and archaeology could be expected within the metro site.</p>
6	8 Parramatta Square	<p>Salvage Excavation, Casey & Lowe 2016–2017¹²</p> <p>This site forms the southwest part of the larger Parramatta Square development and included three historical lots. The excavation found remains of the Town Drain that ran diagonally through the site from southwest to northeast. This section of the drain took the form of a box drain constructed using large sandstone blocks with a sandstone capping. While the drain was constructed as a single phase, evidence suggests that</p>

No.	Address	Description and discussion
		<p>part of it remained an open drain at least until the late 1850s. Remains of the creek that was channelised into the drain was found. However, the drain did not follow the centreline of the creek along its entire route, and evidence for the infilling of the creek was seen at this location. In addition to the drain, the remains of five timber and brick buildings dating to the 1830s–1850s were also excavated, as well as a series of shops and residences built along Church Street in the 1870s/1880s. Parts of the site were impacted by developments in the 1920s, 1930s and 1980s that included basements, substantial footings and other localised deep impacts which had removed archaeological remains.</p> <p>These results demonstrate the range of archaeology to be expected from investigations of multiple historical lots with multiple phases of use. Evidence of the Town Drain and its interactions with the former creek line is relevant to our understanding of the remains of the Town Drain that may be found within the metro site.</p>
7	Church Street Mall, Bicentennial Square	<p>Monitoring and Test Excavation, CRM, 2014¹³</p> <p>Five trenches were excavated within the pedestrian Church Street Mall near the intersection with Macquarie Street. These trenches confirmed that evidence associated with the nineteenth-century development of Parramatta survived below the modern pavement. Archaeological remains included evidence of the original landscape; robbed-out footings of the c1810–1820 watch house; postholes associated with a c1830s market building; and landscaping and works associated with construction of the 1880s Town Hall and Council Chambers and the 1879–1880 Clerk’s residence.</p> <p>Evidence from this site provides relevant information about archaeological site formation on the western side of the site, away from the wetter landscape to the east demonstrated in the Parramatta Square excavations. Though this part of the site may have shallower profiles (due to topography and underlying soil landscape) multiple phases of archaeology can survive.</p>
8	211 Church Street	<p>Salvage Excavation, CRM, 2012¹⁴</p> <p>A small area (5m x 4m) at the rear of the former post office was excavated for the construction of a new lift and fire stairs. The archaeological investigation demonstrated that the original topography was flat and the ground surface has risen by at least 500mm. No evidence for outbuildings or other features associated with the convict hut located on the Church Street frontage was identified during this excavation. Archaeological evidence associated with a coach building workshop (1833–1874) on the site comprised stripping of all topsoil deposits prior to the construction of a substantial workshop or showroom building. Two robbed-out trenches from the building survived, each about 700mm wide and 1m deep. Multiple phases of surfacing from the 1830s to the 1860s was also uncovered. The earliest surface was made from crushed and broken bricks laid down directly onto the truncated natural. Over this was a layer of clay and mortar c1840s; in the 1850s a thin layer of bitumen was put down; and in the 1860s the area was surfaced with a thick deposit of clay and broken bricks. Evidence for the demolition of a service wing associated with the extant 1878–80 post office building was also uncovered.</p> <p>These results also provide an indication of what might be expected from the Church Street properties within the Metro site. The ground levels along Church Street may be half a metre above nineteenth-century levels. Successive phases of historical development will likely be represented in the yard spaces with multiple surfaces.</p>
9	52 George Street	<p>Test Excavation, AHMS, 1999¹⁵</p> <p>Three trenches were excavated to test for survival of underfloor deposits. The testing determined that the underfloor cavities had been disturbed during the late nineteenth or early twentieth century. No deposits associated with the former 1830s Red Coats Mess building were identified. Structural remains associated with the former building survive beneath the existing structure.</p>

No.	Address	Description and discussion
		<p>This was the only available record for archaeological investigations on the northern side of George Street directly opposite the site. The limited archaeological investigation doesn't provide much information relevant to this assessment.</p> <p>Continuous use of, and upgrades to, historical buildings can limit survival of archaeological deposits within underfloor spaces.</p>
10	Cnr Smith and George (The 'Babes in the Woods' Site)	<p>Salvage Excavation, Edward Higginbotham and Associates, 1989¹⁶</p> <p>Archaeological salvage excavation uncovered remains of a convict hut and secondary structure to the rear. Rubbish pits, barrel-lined pits and other features were found in the yard space to the rear of the hut. The barrel-lined pits are thought to be associated with a later use of the hut, possibly as a hotel. The hotel on site was known as the 'Hawkesbury Settler' and later 'Babes in the Woods'. An 1820s timber building associated with the hotel was also found. It featured a clay and cobble floor and was interpreted as a stable. Other features included a bottle dump, identified as waste from a cordial factory that operated on the site, a brick-lined well and sandstone box drain. An 1830s sandstone stable was also built on the site. Later nineteenth-century occupation included remains of two buildings, with a well, two cisterns and a brick coal store. There was evidence for a laneway leading off Smith Street.</p> <p>Results from this excavation provide information about the archaeology of convict huts and their adaptation after that initial phase of use. The site also provides a confirmed hut location to assist our georeferencing of historical maps and identifying their locations within the metro site. The sequence of building phases is also relevant for understanding what may be present within the convict allotments in our site. Evidence of additions to the original convict hut may be present and the buildings recorded on the 1823 plan could be replacements rather than adapted huts. The distribution of yard features associated with the 1790s–1800s phase also informs this assessment. Activity resulting in archaeological features and artefact deposits is more likely to be concentrated near the convict hut location than in the large rear yards. This has been demonstrated in other convict hut excavations such as at Parramatta RSL.</p>
11	Former Christian Science Church, 16–18 Smith Street	<p>Monitoring, Salvage Excavation, Godden Mackay Logan (now GML), 1999¹⁷</p> <p>Excavation uncovered archaeological remains associated with commercial and residential development of the site from the 1830s to the late nineteenth century. Substantial quantities of fill were imported to the site during this early phase of development to raise the ground level in lower-lying areas. The earliest structures comprised a stone stable built sometime between 1836 and 1844, a sandstone box drain associated with the Babes in the Woods Hotel (outside the site), and a sandstone retaining wall. Also associated with the hotel was a bottle dump, c1840s–1850s.</p> <p>A mid-nineteenth century vaulted sandstone cellar was found below two mid-1870s sandstone residences. The cellar is thought to have been built for commercial or industrial purposes and may also be associated with the Babes in the Woods.</p> <p>A brick house, brick and weatherboard structure and associated outbuilding were constructed at the rear of the site in the late nineteenth century. These buildings were replaced in the 1930s by a brick hall and kitchen.</p> <p>The Town Drain also crossed this site. Here the drain consisted of three courses of primarily unbonded sandstone blocks with an unlined base. The drain was capped with either cement slabs, large rectangular sandstone blocks or timber sleepers. A section of the drain was removed during construction and rebuilt on site in the vicinity of its original location.</p> <p>This excavation provides additional information about the influence of the landform on historical archaeology. There is likely to be more fill used to raise and consolidate ground levels on the eastern side of the site. Archaeological layers would therefore be located at a greater depth below the current ground surface in this part of the site. This site also demonstrates that late nineteenth-century redevelopments may have utilised the components of the building they were replacing, such as cellars.</p>

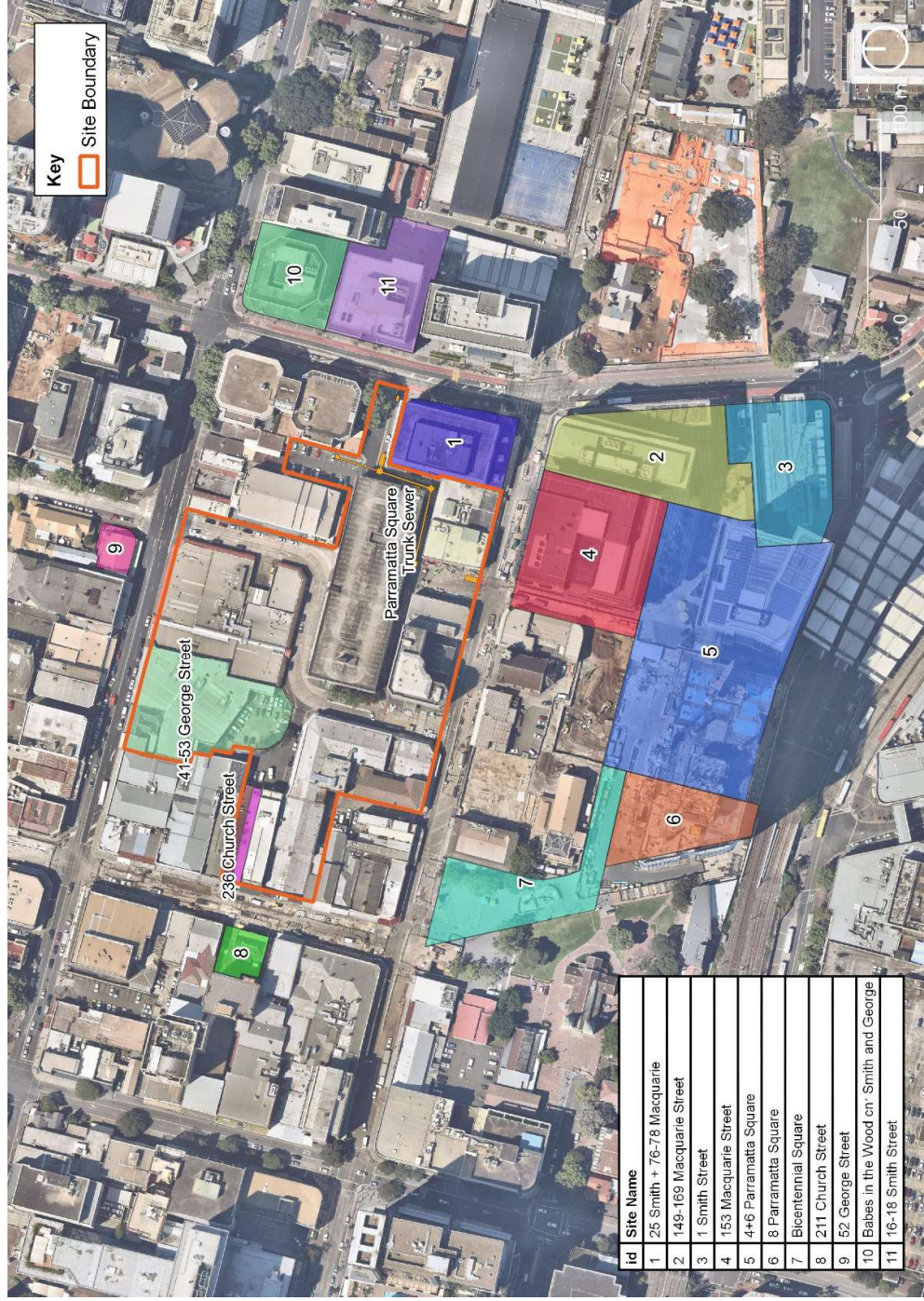


Figure 4.8 The locations of previous archaeological excavations within and immediately surrounding the site. Note the extent of excavation at 41-53 George Street is an estimate based on the building footprint. (Source: Nearnmap with GML overlay 2021)

4.4 Geotechnical data

Geotechnical data from four boreholes drilled within the site was reviewed to inform the assessment of archaeological potential (Figure 4.9).³²⁴ While additional data was available for boreholes drilled within Church Street and Macquarie Street, the information gained from these boreholes is considered to have limited application to the site.

A summary of the data from the four boreholes is presented in Table 4.4. As the borehole logs provide very limited descriptions of fill layers, it is not possible to determine how much of this material may be of archaeological interest. However, the data does provide generalised information on the potential depth of archaeological deposits across the site. The description of some soils identified as fill may be reworked historical topsoils/subsoils and may contain archaeological remains.

In general, the data suggests that potential historical topsoil and subsoil deposits in the western part of the site may be up to 0.4 metres deep, while towards Smith Street the deposits may be up to 1 metre deep. While it is unlikely that this equates to 1 metre of archaeological deposits, this may be an indication of ground-raising or reclamation in this part of the site, an action that will have potentially buried earlier archaeological remains. Additionally, borehole BH705 in Macquarie Place (behind 68 Macquarie Street) encountered a layer of reddish-brown bricks at a depth of 0.5m below the modern surface. It is not known whether this is a modern feature, but it does indicate the potential for archaeological remains to survive below Macquarie Place and possibly at similar depths below the adjacent buildings along Macquarie Street.



Figure 4.9 Location of geotechnical boreholes within and surrounding the site. The 'fill' depths are provided beside each location. (Source: Nearmap with GML overlay 2021)

Table 4.4 Interpretation of borehole logs drilled within the site. Depths describe the thickness of the material. (Source: Borehole logs from Golder and Douglas Partners, November 2020, supplied by Sydney Metro)

Borehole No.	Depth of modern	Description of modern	Depth of 'fills'	Description of 'fills'
BH002	0.3m	Asphalt, road base (dark grey-brown gravel)	1.0m	Brown silt and clayey silt
BH003	0.35m	Asphalt, dark grey sand (road base?)	0.4m	Pale brown slightly silty clay
BH704	0.3m	Concrete, brown sand (bedding?)	1.2m	Brown-grey clayey silt
BH705	0.4m	Concrete, brown or orange brown sand	0.6m	Layer of red-brown bricks, 100mm thick above a 500mm thick layer of grey silty clay identified as alluvium

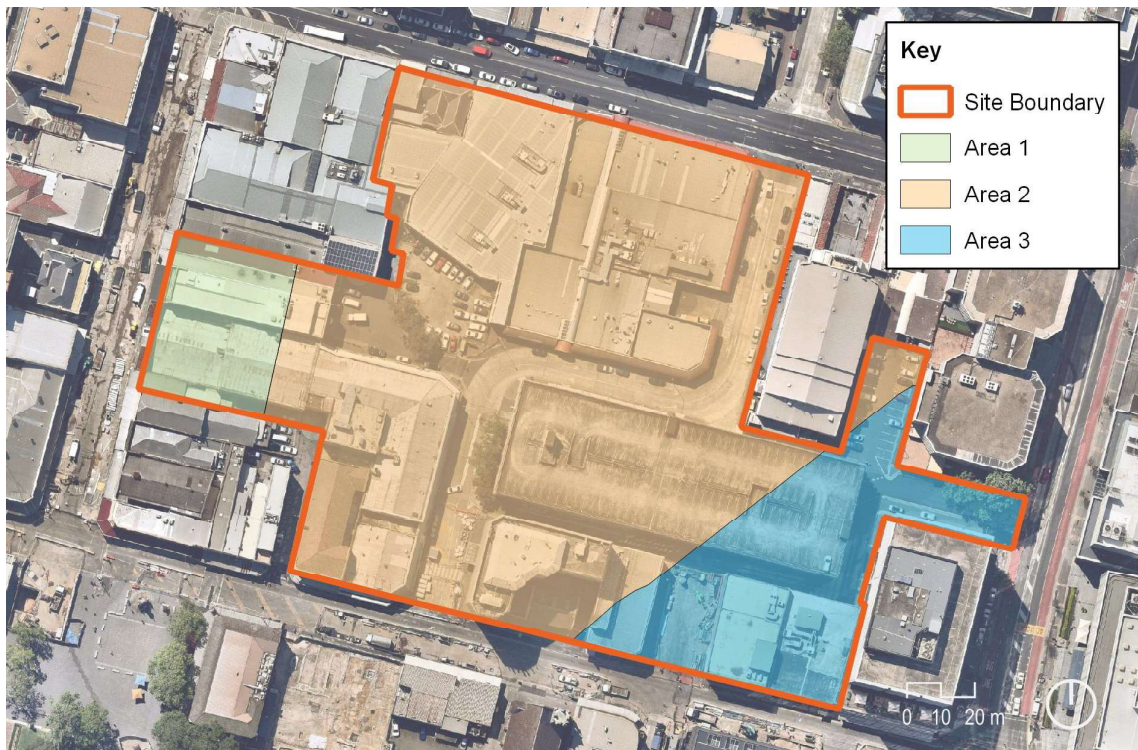
4.5 Predicted depths of historical archaeology

The review of available geotechnical and archaeological data for the site has enabled the following predictions to be made about the expected general depths of the historical archaeological layers or deposits within the site. Three areas have been identified:

- Area 1 (Church Street)—historical archaeology remains are expected to be encountered directly below the existing building floor slabs. Generally, the historical archaeology layers would be about 300mm deep.
- Area 2—historical archaeological remains may be capped by modern fills and would be present about 300–400mm below the modern ground surface. Historical archaeological layers across this area could be up to 300–500mm deep.
- Area 3—this area is associated with a former creek line and historical archaeological remains would be present at 300–400mm below the modern ground surface. Historical archaeological layers including levelling or reclamation fills could be up to 600mm+ deep..

The Area are illustrated in the figure below.

These depths provide a general profile for the historical archaeological layers. Features and structures will be cut in to and extend deeper into the natural soils. Examples include wells, cellars, drains, cisterns, cesspits and backfilled or reclaimed natural creeks. In Areas 1 and 2, the natural soils also have potential to contain Aboriginal archaeological objects and features extending to depths of 200–300mm below historical archaeological layers. In Area 3, the natural soils may contain Aboriginal archaeological objects and features up to 500mm below historical archaeological layers.



4.6 Previous impacts

A review of previous developments within the site has been undertaken to inform the potential for survival of archaeological remains. This has focused primarily on existing buildings and developments post-1960s that are considered more likely to have had an impact on archaeological survival. This is based on developments in construction techniques that allowed for taller buildings that would have had substantial foundations and/or basement. Documents and resources reviewed include aerial photographs from 1943, 1951, 1961, 1970, 1978, 1986 and 1991 (available via NSW Spatial Portal); Google Maps Street View; and reports relating to previous archaeological investigations both within and around the site that have provided information on previous building methods and their impact on archaeological survival.

The following general interpretations can be made regarding developments within the site:

- The site is relatively flat, with a very gradual slope in the eastern half of the site towards Smith Street. There is no evidence for extensive landscaping (ie excavation or terracing for lower floors or basements, or significant ground-raising) based on an external view of the site using Google Maps Street View (accessed on 14 July 2021 and 15 July 2021).
- Post-1980 three–four storey and higher buildings will have involved extensive excavations for building footings and are more likely to contain basement levels that will have entirely removed any archaeological deposits within the site. This was demonstrated at 149–169 Macquarie Street.³²⁵
- 1930s–1970s two–three storey buildings will have involved deep excavation for strip and pier footings that will have resulted in localised impact and removal of archaeological deposits within their footprint. There is moderate to high potential for archaeological deposits to survive

between these footings directly below existing floor slabs. The survival of archaeological remains below this kind of development has been demonstrated at sites such as 3 Parramatta Square, 25 Smith Street and 74–76 Macquarie Street.³²⁶

- 1960s–1990s single-storey buildings are likely to have a combination of strip and pier footings that will have had localised impact on archaeological survival within their footprint. There is high potential for archaeological deposits to survive below the floor slab of these structures.
- Excavation for service utilities, including substations and trenches, will have had localised impacts across the site.

A detailed discussion of the existing buildings within the site and the implication for archaeological survival is presented in Table 4.5.

Table 4.5 Summary of development impacts within the site, discussed by street address.

Address	Lots	Development impacts
41–59 George Street	12 (part), 14, 15 (part)	Two-storey building constructed c1996–1997. The western and southern parts of the site have been subject to archaeological investigation. Construction in the eastern half of the site did not involve excavation below the existing ground level. Archaeological remains of a convict hut may survive within the eastern half of the site below the existing floor slab.
Parramall, 61B George Street	15, 16	Single-storey mall constructed in 1977/1978, likely supported by pier and strip footings. A petrol station was constructed in the northern part of Lot 16 in the 1930s. This may have had underground tanks that would have removed any archaeological deposits within their footprint. Leaking from these tanks may have also caused localised contamination.
74 Macquarie Street	74 (part)	Single-storey building constructed on the western half of block in 1950s, demolished in 1970s. The existing two-storey 1970s building was likely constructed using strip and pier footings.
72 Macquarie Street	75 (part)	1970s three-storey building likely supported by pier and strip footings.
70 Macquarie Street	76 (part)	c1910–20 two-storey building with three-storey mid-twentieth century façade. Demolished in 2019. Likely supported by combination of strip and pier footings.
68 Macquarie Street	77 (part)	Mid–late 1960s three and four-storey brick building. Likely supported by a combination of strip and pier footings.
62–64 Macquarie Street	77 (part)	Kia Ora, 1840s two-storey brick house. Heritage item—not proposed for demolition.
58–60 Macquarie Street	78 (part)	Late 1970s or early 1980s seven-storey building. It is understood this building has a single basement level. The building would have piled footings.
Greenway Plaza, 222–230 Church Street	80, 81 (part), 15a (part)	One and two-storey steel-framed structure originally built in 1961, converted to Greenway Plaza in 1981. The building façade was likely upgraded or replaced when it became Greenway Plaza. A small basement area was added when the buildings were converted. The ground floor of the Macquarie Street section of the arcade is slightly raised above street level.
48 Macquarie Street and part of Union Lane	81	Three-storey brick building built in 1954, likely supported by strip and pier footings. The ground floor is raised above street level and accessed by three steps. The building does not feature a basement. ³²⁷ A disused vehicle turning table was located at the end of United Lane when an assessment of this site was carried out in 2017. Construction of this feature will have had an impact on archaeological survival.

Address	Lots	Development impacts
220 Church Street	15a (part)	Two-storey c1870s–1880s building without basement.
232 Church Street	15a (part)	Three-storey building constructed in late 1970s or early 1980s. Does not appear to have basement. The building is likely to have strip footings.
236 Church Street	10 (part)	1901–1903 brick shop, rebuilt in 2006. Archaeological remains retained on site, with known potential for additional archaeological remains.
238 Church Street	10 (part)	Two-storey building constructed c1901–1903, extended at the rear in the 1960s with a slightly raised rear floor. Based on the adjacent excavation at 236 Church Street, the building has brick and steel strip footings.
71 George Street (City Centre car park)	Parts of 28, 74, 75, 76, 77, 78	Five-storey car park. Originally constructed in the early 1980s as three storeys, with an additional three storeys added at a later date. The structure is supported by concrete pillars and features brick shops along its northern side fronting onto Horwood Place.
Horwood Place and Macquarie Place	17, 79, 15 (part), 16 (part)	Construction of the road and excavation for service utilities will have had localised impacts on archaeological survival. Recent archaeological works for the Parramatta Light Rail have demonstrated the potential for archaeology to survive within the existing road corridors along Church, George, Smith and Macquarie streets.

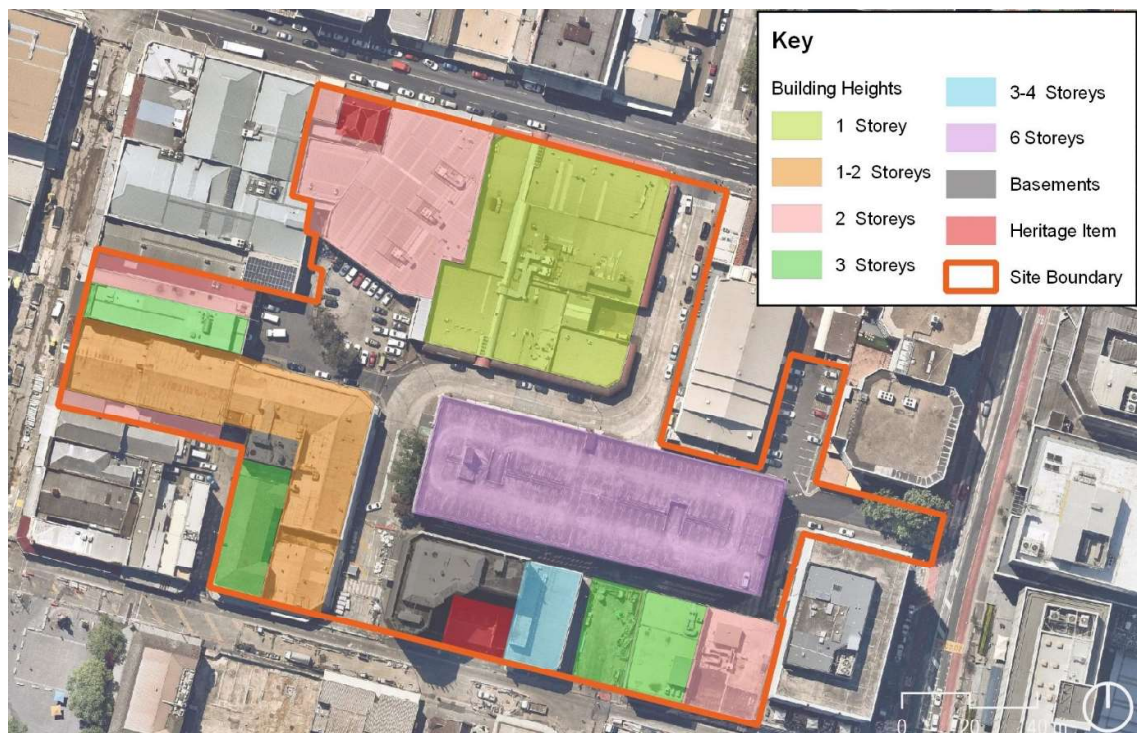


Figure 4.10 Plan showing heights of individual buildings and location of known basements within the site. (Source: Neamap with GML additions)

4.7 Archaeological phases

The historical development and occupation of the site is complex. It includes all or part of seven original allotments with five recorded buildings in the 1790s. By the end of the nineteenth century the site included 33 subdivisions with over 80 structures (buildings, sheds, outhouses, wells/cisterns) recorded on historical plans. However, the historical development can be divided into five broad phases that would generally be reflected in the archaeology across the site. These phases are used to frame the discussion of archaeological potential to allow for comparisons between individual properties. The phase boundaries are in decades and each phase overlaps with the next. The phasing for the site and each allotment will be refined further as part of the archaeological investigation process.

4.7.1 Phase 1: Early colonial settlement (1788–c1820s)

This phase is associated with the establishment of Parramatta as a penal settlement and the beginnings of its transformation to a free town. The phase encompasses an approximate 42-year period and includes the convict hut allotments and their occupation, permissive occupancy by free occupants (emancipists and free settlers), and reconfiguration of the allotments for formal leases in 1823. This phase includes the initial occupation and development by free occupants in the early nineteenth century and during the 1820s.

The town grid was laid out and included George Street, Church Street and Macquarie Street. Convict huts were built within large garden allotments. Subdivision, development and occupation by free settlers and emancipated convicts began soon after. There are six of the original convict hut allotments recorded on the 1792 plan within the site—four complete and two partially within. In 1823 a formal lease system resulted in a reconfiguration of the initial convict hut allotments. The allotments on George Street were also extended as the street was narrowed. Twelve allotments (or parts thereof) within the site were recorded as occupied and developed with buildings during the 1820s. Several emancipated convicts and free settlers were issued leases within the site and developed the lots during the 1820s.

Archaeological remains could include evidence of the convict huts and a complex sequence of alterations, demolition and rebuilding by emancipists and free settlers. The site could also include archaeological evidence of early colonial adaptation to the environment, early cultivation and 'kitchen gardens', cottage industry and development of local manufacture, and the domestic and working life of convicts, emancipists and free settlers, and the transition period from a convict settlement to a free town. There is also potential for contact archaeology during this phase. The allotments along Macquarie Street remained undeveloped until the early-mid nineteenth century. These areas may have been used by Aboriginal people in the early years of the colony.

Phase 1—Types of archaeology

The types of archaeological remains expected for Phase 1 occupation would vary depending on the location. Archaeology would be concentrated towards the front of the allotments and surrounding the building locations recorded on historical maps.

- Buildings and associated deposits—Structural remains of the main buildings, and alterations/additions, including postholes, slot trenches for base plates, sandstock brick chimney bases or hearths, stone or sandstock brick footings and sandstock brick or stone drains. Associated deposits such as modified historical topsoils and fills containing artefacts, underfloor

- deposits containing artefacts and demolition deposits containing building materials (mortar, nails, bricks, stone, tile etc).
- Yard features and deposits—Remains of outbuildings, property boundaries and other features such as postholes, slot trenches, stone or brick footings, drains, wells and cesspits, timber-lined subsurface storage pits, brick or stone paving, rubbish pits and spreads containing artefacts, modified topsoils and fills containing artefacts, garden soils, field drains and drainage channels, water dams with backfills containing artefacts, furrows, plough and hoe marks.
 - Contact archaeology—Deposits containing traditionally modified ceramic, glass or flint, hearths and other archaeological evidence demonstrating interactions between Aboriginal people and the colonists.

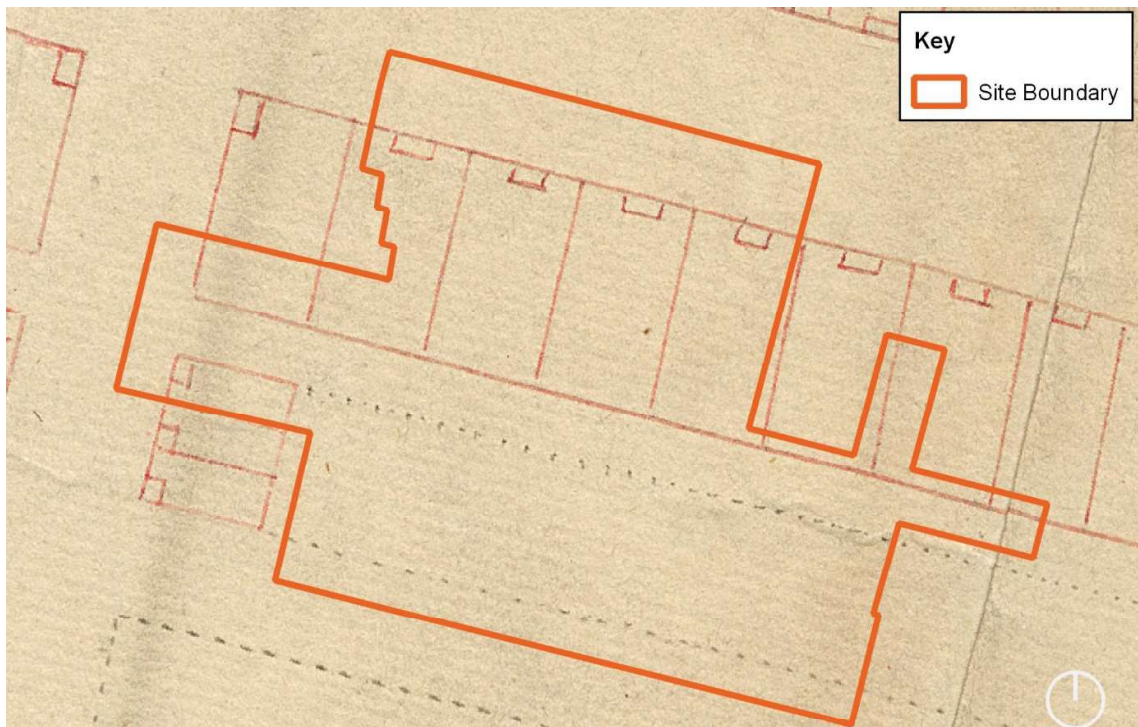


Figure 4.11 The 1792 plan illustrating the subdivision and rows of convict huts lining George (then High) Street and showing the absence of development along Macquarie Street. (Source: The National Archives UK with GML additions)

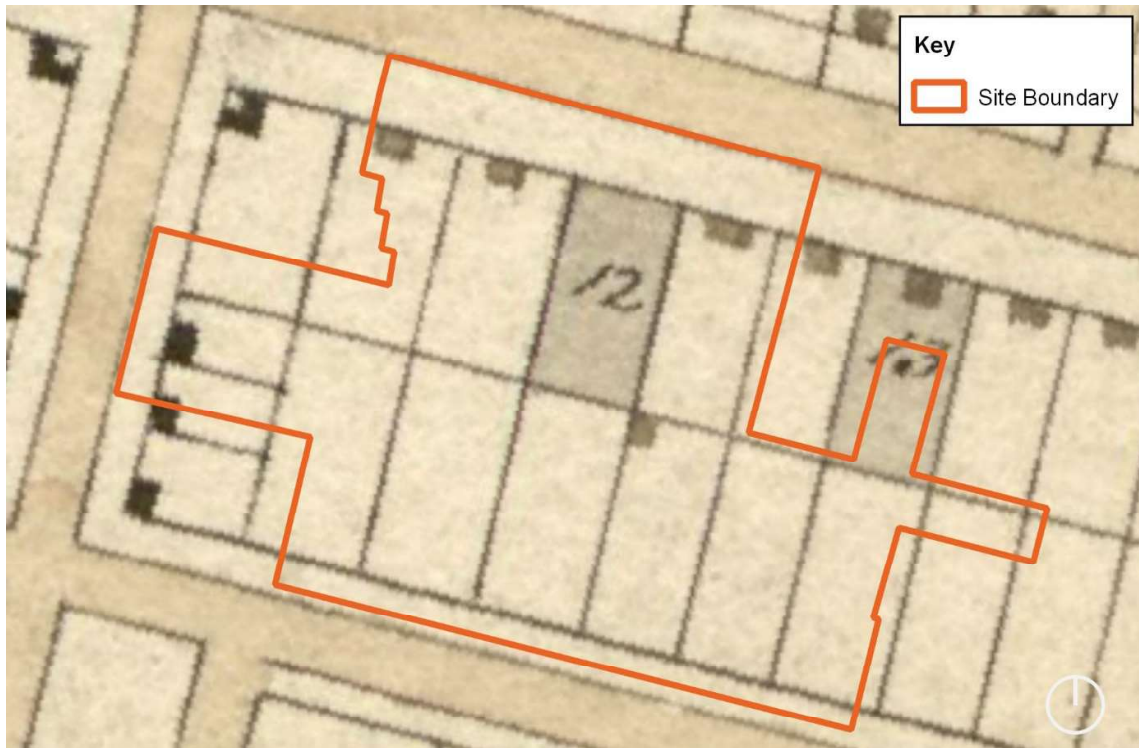


Figure 4.12 The 1804 plan showing the subdivisions, the convict huts and an additional structure in the centre of the site. An early lease (12) is illustrated. (Source: The National Archives UK with GML additions)

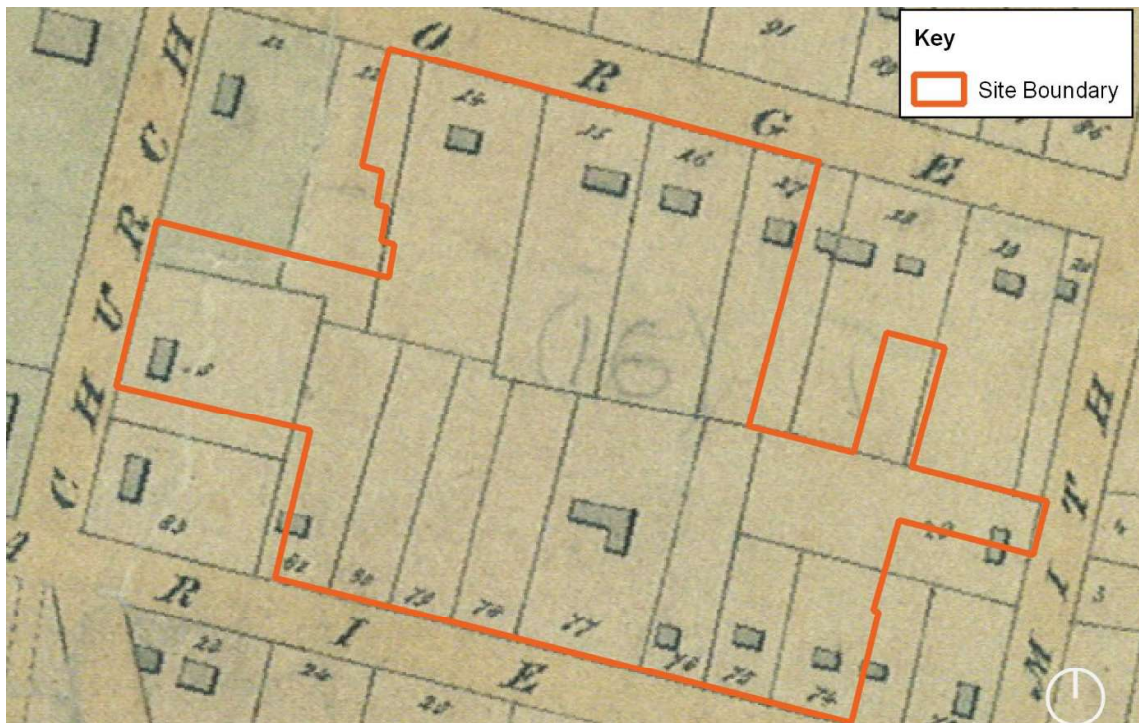


Figure 4.13 The 1823 plan showing the convict huts (or adapted versions) and additional development on Macquarie Street. (Source: SLNSW with GML additions)

4.7.2 Phase 2: Leases and town development (c1820s–c1860s)

In 1823 the first formal leases were issued for land in Parramatta, providing security for residents and facilitating development across the town. Convicts working in Parramatta were moved to the barracks on Macquarie Street, completed by c1821. These factors both mark and facilitate the transition of Parramatta to a free town. Though it is noted this transformation began prior to the 1820s, Parramatta continued to grow into the commercial centre for the region. However, like the rest of the colony, its fortunes were influenced by economic conditions during the early-mid nineteenth century. Phase 2 is characterised by growth in private development, residential and commercial properties within the site. Initial free occupants who developed and were issued leases during the 1810s and 1820s (Phase 1), sell up, and properties change ownership, are leased and tenanted, subdivided and redeveloped at a faster rate.

By the mid-1840s all but two of the 17 allotments within, or partly within, the site are recorded as being developed and occupied. Many of the allotments contain multiple buildings—fronting the street and to the rear—demonstrating both residential and commercial or light industrial activities. There is limited historical map evidence for the site between the 1840s and 1860s. Historical records and the 1855 map showing just the street frontage indicate some development and subdivision, mainly on the Church and George Street properties.

Archaeological remains are likely to include evidence of an increasingly complex sequence of buildings, alterations, additions and occupation phases. Evidence of unrecorded outbuildings and features associated with domestic, commercial and perhaps industrial activity is likely to be present in rear yard spaces. Larger quantities of artefacts could be expected from this phase due to the increased density of occupation and use, and subsequent increased rubbish disposal, within the site.

Phase 2—Types of archaeology

The density and distribution of archaeology is expected to increase across the site during this phase. It would still be concentrated towards the street frontage and surrounding the main buildings. However, changes in development and use of rear yard spaces would result be notable in the archaeology. Changes in building materials and artefact types are also expected during this phase.

- Buildings and associated deposits—Structural remains of the main buildings, and alterations/additions, including stone or brick footings and chimney bases, stone hearths, brick or stone drains, postholes and slot trenches for base plates, stone flagging or brick pavers. Associated deposits such as underfloor deposits containing artefacts, fills containing demolition deposits containing building materials (mortar, plaster, nails, bricks, stone, slate etc).
- Yard features and deposits—Remains of outbuildings, property boundaries and other features such as postholes, slot trenches, stone or brick footings, drains, wells, cisterns and cesspits, brick or stone paving, yard surfacing, rubbish pits and spreads containing artefacts, historical topsoils and fills containing artefacts, garden soils, garden beds, field drains and drainage channels, and levelling fills.

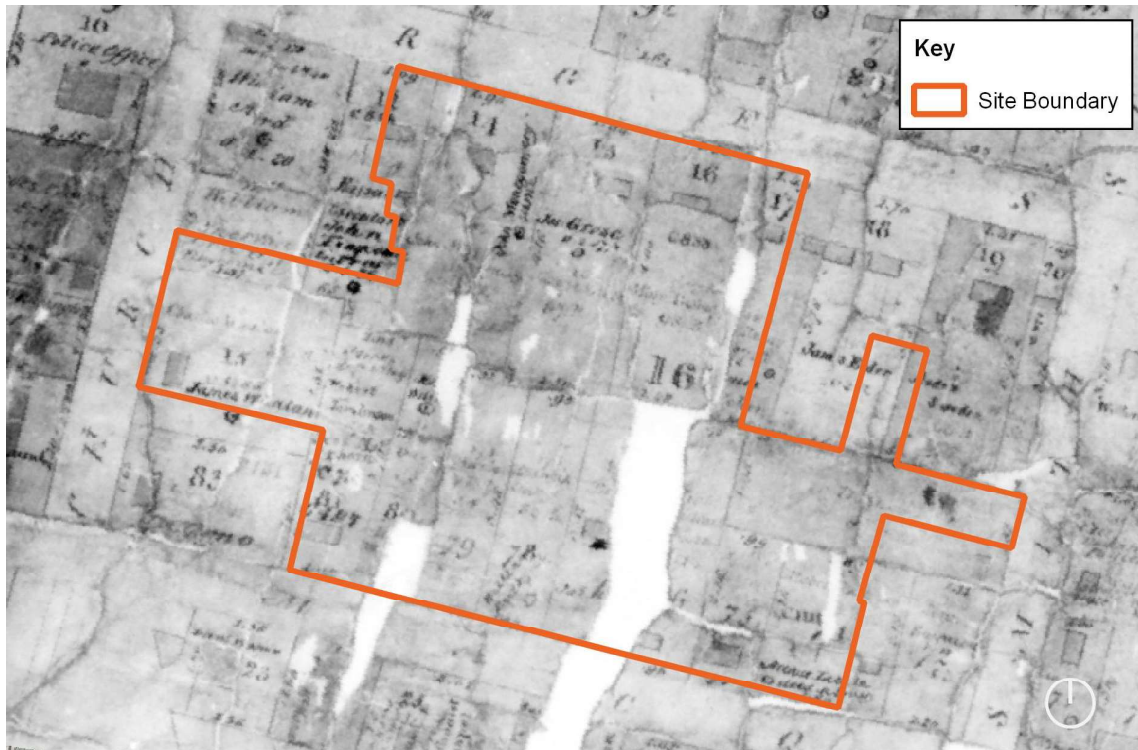


Figure 4.14 Buildings and leaseholders illustrated on the 1836 plan. (Source: NSW State Archives and Records with GML additions)

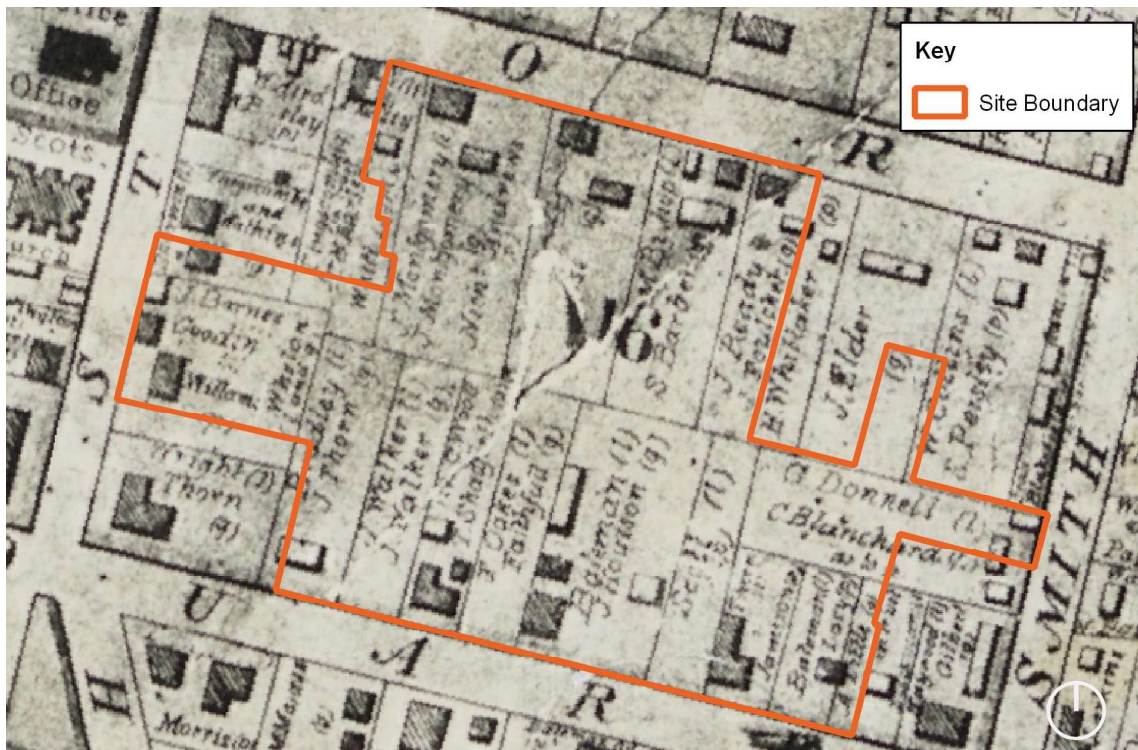


Figure 4.15 Development of the lots with additional buildings and subdivisions illustrated on the 1844 plan. (Source: SLNSW with GML additions)

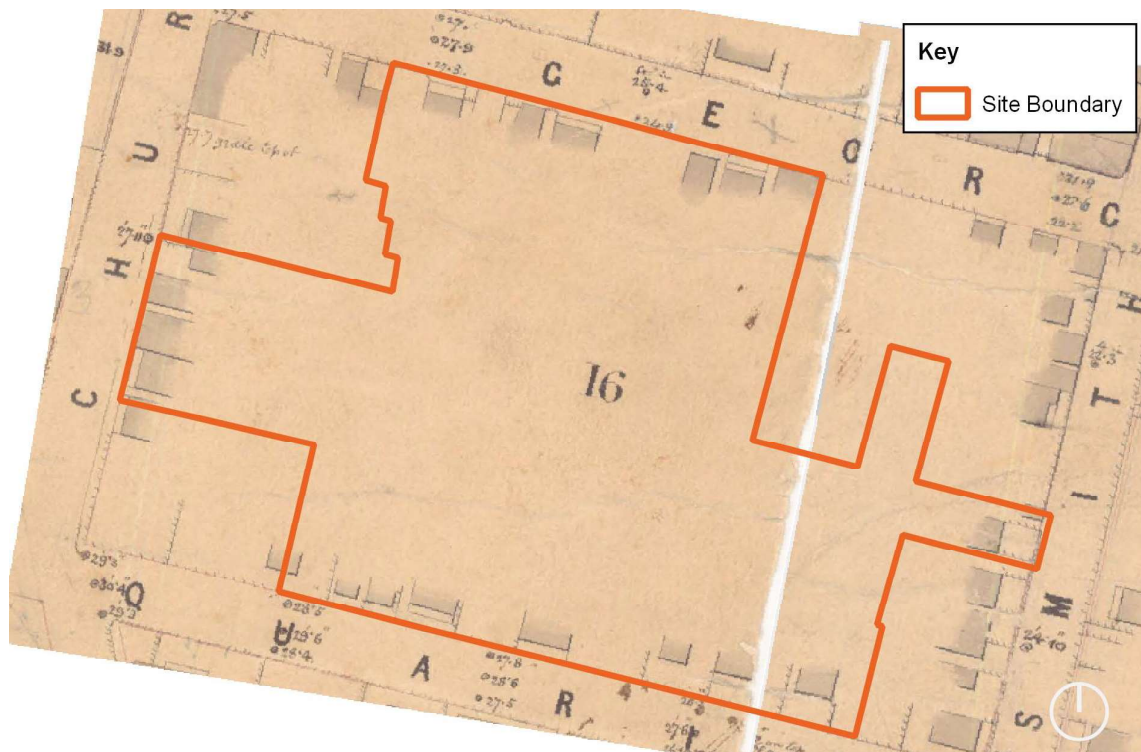


Figure 4.16 Street frontages, illustrated on the 1855 plan, show some further development. (Source: City of Parramatta Research and Collections with GML additions)

4.7.3 Phase 3: Urbanisation and industry (c1860s–c1880s)

The arrival of the railway in 1860 and the establishment of local government fostered the urbanisation of Parramatta. Church Street became the primary focus for commercial development and local industrial enterprises such as Ritchie’s ironworks were established. Occupation along Macquarie Street and Smith Street remained primarily residential. Archaeological remains of Phase 3 could include evidence of the ironworks, its layout, structures, features and operations. There may also be artefacts associated with the various activities and processes of the ironworks. Archaeology of residential and commercial activities is likely to be similar to that of Phase 2. The increased availability of mass manufactured consumer goods in the global market is likely to be reflected in the archaeology. Substantial increases in artefact deposits are to be expected from this phase.

Phase 3—Types of archaeology

The types of archaeology from the previous phase are likely to continue to this phase. The main change in the archaeological profile is expected to be related to the industrial activity on site. More yard areas are also developed and these areas are expected to have greater densities of archaeology in this phase. Changes in building materials and artefact types are also expected, with technological changes and increased availability of mass-produced materials and goods available.

- Buildings and associated deposits—Structural remains of the main buildings, and alterations/additions, including brick or stone footings and chimney bases, stone hearths, ceramic drains and metal service pipes, postholes and slot trenches for base plates, stone flagging or brick pavers. Associated deposits such as underfloor deposits containing artefacts,

- fills containing artefacts and demolition deposits containing building materials (mortar, plaster, render, nails, bricks, stone, slate etc).
- Yard features and deposits—Remains of outbuildings, property boundaries and other features such as postholes, slot trenches, stone or brick footings, drains, ceramic sewer pipes, metal waterpipes, cisterns, cesspits and toilets, brick or stone paving, chimney bases, lined pits and stone/concrete machinery bases, rail track, industrial waste pits and deposits, yard surfacing, rubbish pits and spreads containing artefacts, historical topsoils and fills/backfills containing artefacts, garden soils, garden beds, field drains and drainage channels, and levelling fills.

4.7.4 Phase 4: Commercial development (c1880s–c1950s)

Redevelopment and growth of commercial businesses along Church Street continued, with many of the early–mid nineteenth century premises replaced in the 1880s with new two-storey shops and residences. Many industrial businesses grew and then collapsed during the 1890s depression. Residential development along Macquarie Street gradually gave way to commercial properties and small-scale industries in the early twentieth century. The 1895 plan illustrates the subdivision and development that had occurred within the site by the end of the nineteenth century. Of the 33 properties within (or partly within) the site, only one was undeveloped at this time. An assortment of building types is recorded on the plan, as well as outbuildings such as toilets. The archaeology is likely to include evidence of multiple alterations, additions and new buildings, with a range of building materials within each property. Rubbish continued to be disposed of within rear yards of properties until the end of the nineteenth or early twentieth centuries when municipal services were provided. This change is likely to be reflected in the archaeology with the frequency of artefact deposits decreasing and the presence of services (ceramic and metal pipes) increasing. Dumps of commercial or industrial related material containing artefacts may still be present in the archaeological record.

Phase 4—Types of archaeology

Significant changes in the types of archaeological remains are expected during this phase. Industrial activity ended early in the phase and redevelopments for commercial use increased. Mass-produced building materials such as bricks, concrete, iron and other metals were more frequently used. There will be a sharp decline in artefact deposits as municipal services in the twentieth century meant waste was generally no longer disposed of within properties.

- Buildings and associated deposits—Structural remains of the main buildings, and alterations/additions, including brick or concrete footings, ceramic drains and metal service pipes, postholes and slot trenches for base plates, stone flagging, brick pavers and cement/concrete floors. Associated deposits such as levelling fills and demolition deposits containing building materials (mortar, plaster, render, nails, bricks, stone, slate etc).
- Yard features and deposits—Remains of outbuildings, property boundaries and other features such as postholes, slot trenches, brick or concrete footings, ceramic sewer pipes, metal water pipes, cisterns and toilets, brick, stone or concrete/cement paving, bitumen surfaces, chimney bases, lined pits and stone/concrete machinery bases, rail track, industrial waste pits and deposits, yard surfacing, rubbish pits and spreads containing artefacts, garden soils and fills/backfills containing artefacts and levelling fills.

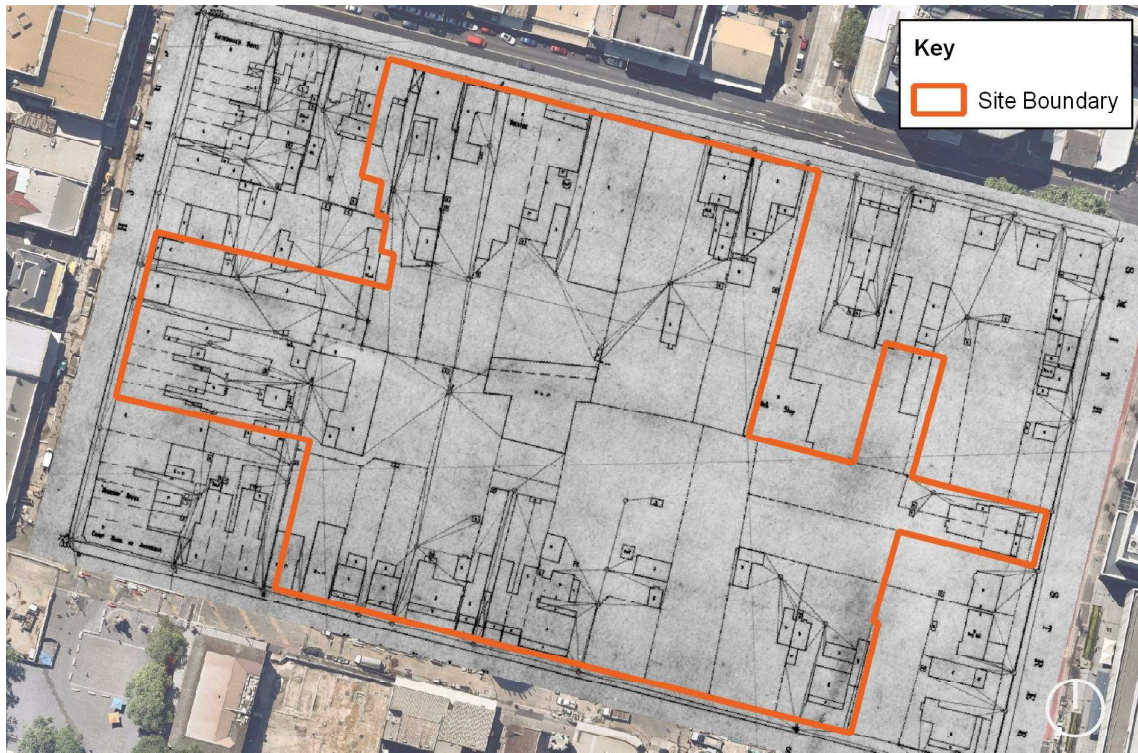


Figure 4.17 1894 Water Board plan showing details of the sewer and stormwater connections to the various houses, shops and structures fronting the streets and outbuildings to the rear. (Source: Sydney Water with GML additions)



Figure 4.18 1895 Parramatta detail survey, sheet 18, showing redevelopment of most of the lots in the mid-late nineteenth century. (Source: SLNSW)

4.7.5 Phase 5: Modern developments (c1950s–present)

This period is associated with the postwar growth and modernisation of Parramatta. The construction of the office buildings and shopping arcades that now characterise the site commenced in the 1960s with the construction of Greenway Plaza. Archaeology associated with this phase may include evidence of demolition of earlier buildings.



Figure 4.19 Aerial photograph from 1943 showing a mix of commercial and residential development and buildings fronting the streets, with large yard and warehouse-type structures in the centre. (Source: SIX Maps with GML additions)



Figure 4.20 Aerial photograph from 1961 showing a mix of commercial and residential development and buildings fronting the streets, with large carparking area the centre. (Source: NSW Spatial Portal with GML additions)



Figure 4.21 Aerial photograph from 1978 showing mostly commercial buildings fronting the streets, with the large carparking area in the centre and the development of Parramall in progress (Source: NSW Spatial Portal with GML additions)



Figure 4.22 Aerial photograph from 1986 showing the Parramall and the multilevel carpark developments. (Source: NSW Spatial Portal with GML additions)

4.8 Archaeological potential assessment

Development of the allotments within the site from the late eighteenth to early twentieth centuries would have resulted in multiple phases of historical archaeology across the site (Figure 4.23). Figure 4.24 to Figure 4.27 illustrate the overlay of buildings and features recorded on historical plans from the 1790s to 1950s. The potential for archaeological remains from the phases identified in Section 4.7 will vary across the site as it is influenced by the lot-specific development and occupation, particularly in the later nineteenth and twentieth centuries. Phase 1 convict and early colonial occupation evidence is likely to have been impacted by subsequent Phase 2 and 3 nineteenth-century urban development.

The depth and intactness or integrity of archaeological deposits is also likely to vary across the site. Most of the site occupies an area of higher ground within the Parramatta CBD landscape and is unlikely to have been built up through deliberate ground-raising or reclamation. Later nineteenth-century and twentieth-century development is more likely to have impacted on the survival of earlier phases of occupation, particularly along the street frontages where development was more frequent. The excavation at 236 Church Street suggests that along the Church Street frontage archaeological remains are expected to be present, and relatively shallow, directly below the building floor slab. Across the centre of the site archaeological deposits may be deeper, particularly within areas that historically were yard spaces. The nature of occupation and development in yard spaces is more likely to have resulted in the accumulation of archaeological remains from successive phases.

The southeast part of the site occupies lower-lying ground that may be associated with a former creek line (see Section 4.8.3 below). This area may have been built up through deliberate ground-raising or reclamation actions and may have potential for buried or stratified archaeological deposits, which could also be more intact. The excavation at 76–78 Macquarie Street recorded clay fills capping historical topsoil deposits that were found at 500–700 millimetres below the modern ground surface. Similar results were found at Parramatta Square where water-logged ground was filled with thick layers of clay. These results suggest that the layer of ‘fill’ recorded in Macquarie Lane (borehole BH002) may in part be the result of ground-raising or reclamation in this part of the site, an action that will have potentially buried earlier archaeological remains.

It is noted that the depth and intactness or integrity of archaeological remains will vary within these areas. Previous archaeological investigations have also demonstrated the potential for deep cut features, such as wells and cisterns, to extend up to 5 metres deep. The truncated bases of these features may survive below deeper impacts (ie deeper footings or possibly basements) across the entire site and may contain artefact deposits, as these structures were often used for rubbish disposal after they went out of use.

4.8.1 Terminology

The following archaeological potential gradings have been developed for this project, taking into consideration the specifics of this site’s development history.

- Nil—area subject to major construction activity that removed all historical archaeology, such as where it can be demonstrated that there are basements for modern buildings.
- Low—unlikely that extensive or intact archaeological evidence of the area’s historical development survives due to high levels of disturbance from twentieth-century construction and other activities. May have localised areas of archaeological deposits and potential for truncated remains of deep cut features (ie cellars, wells, cisterns or cesspits).
- Moderate—likely that archaeological evidence of the area’s historical development survives. Multiple phases of archaeology are expected. Localised impacts to the archaeology are expected and some areas may be less intact.
- High—likely that archaeological evidence of the area’s historical development survives. Multiple phases of archaeology are expected. Previous disturbances appear to be minimal and the archaeology is likely to be relatively intact.
- Unknown—partial archaeological salvage excavation(s) have been completed in the area. The excavation extent is not known and the area may still retain archaeology.

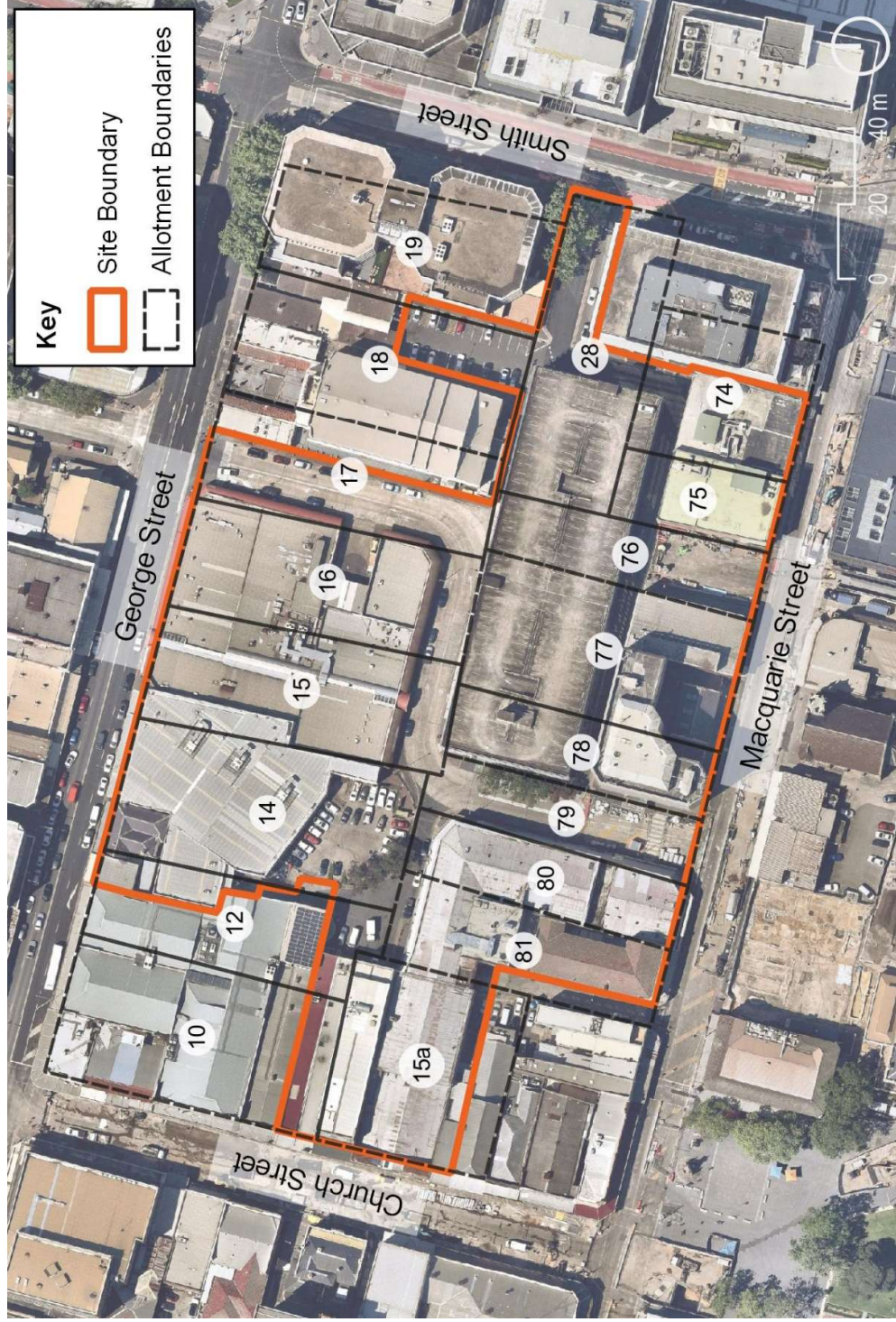


Figure 4.23 Aerial photograph of the site showing the historical allotments (which are used as the framework to discuss the archaeological potential). (Source: Nearmap with GML overlay 2021)

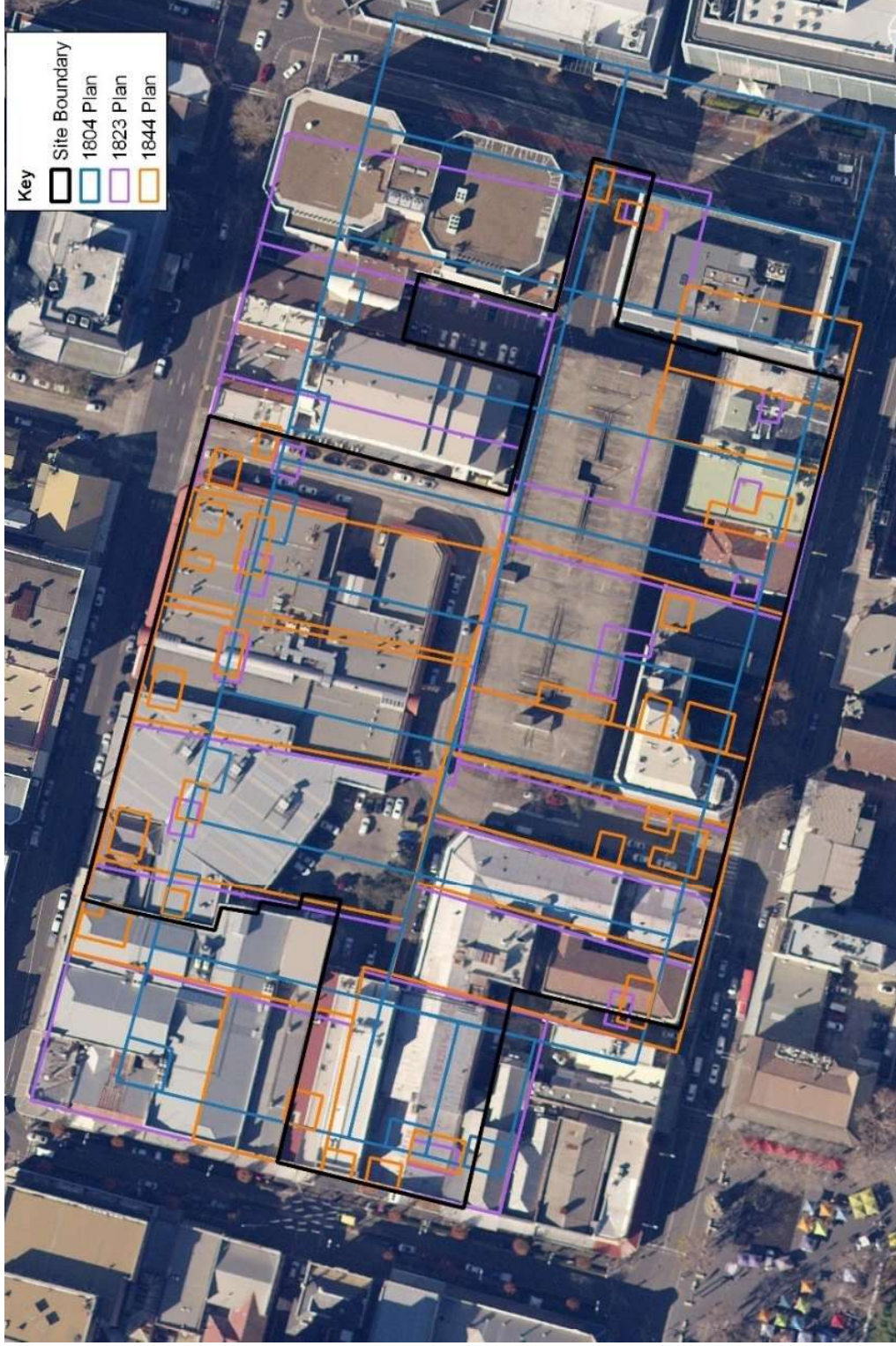


Figure 4.24 Overlay of buildings and features recorded on the 1804, 1823 and 1844 plans. (Source: Nearmap with GML overlay 2021)



Figure 4.25 Overlay of buildings and features recorded on the 1844, 1855 and 1895 plans. (Source: Nearmap with GML overlay 2021)

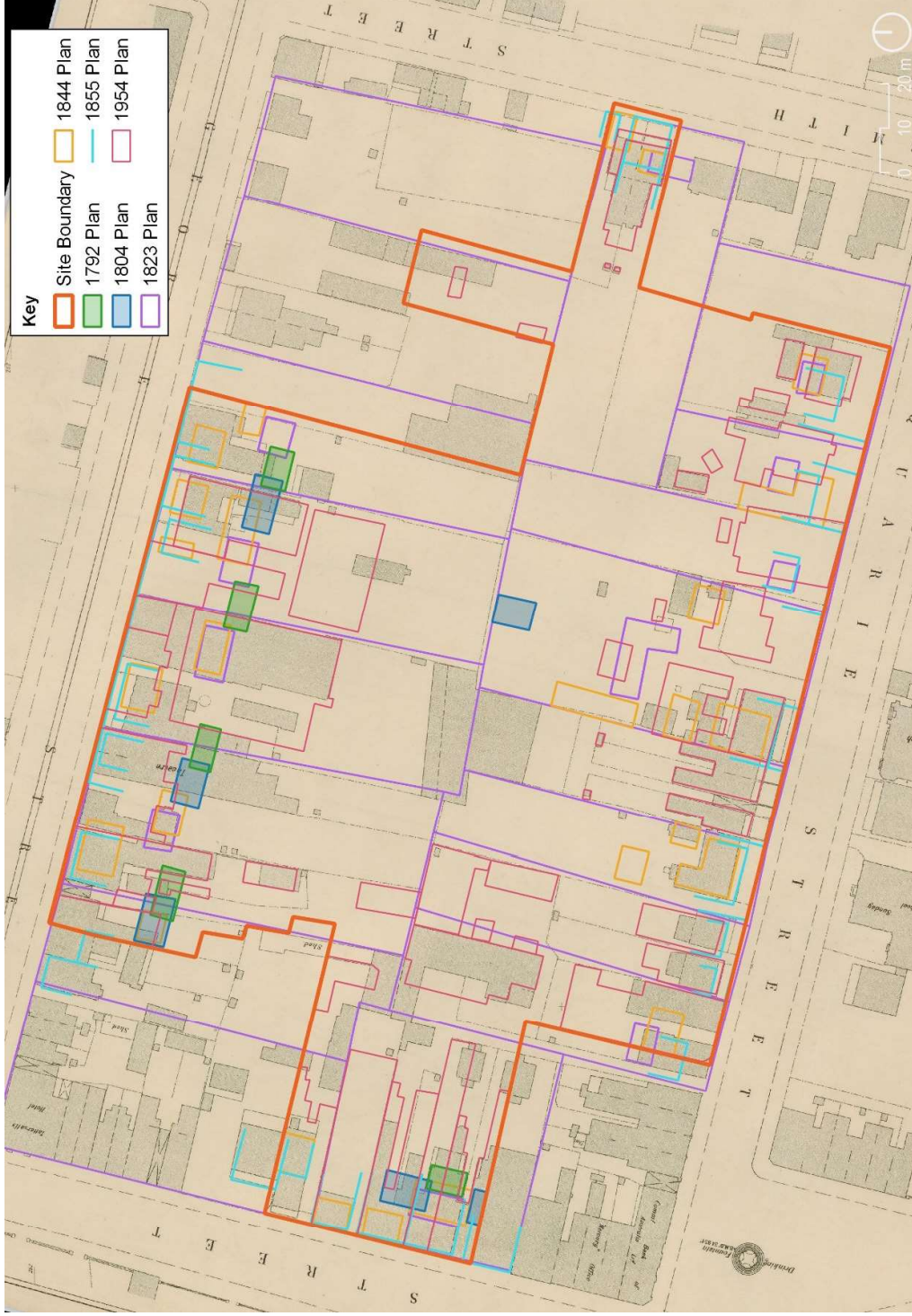


Figure 4.26 The 1895 plan with overlay of buildings and features recorded on the 1792, 1804, 1823, 1844, 1855 and 1954 plans. (Source: SLNSW with GML overlay 2021)

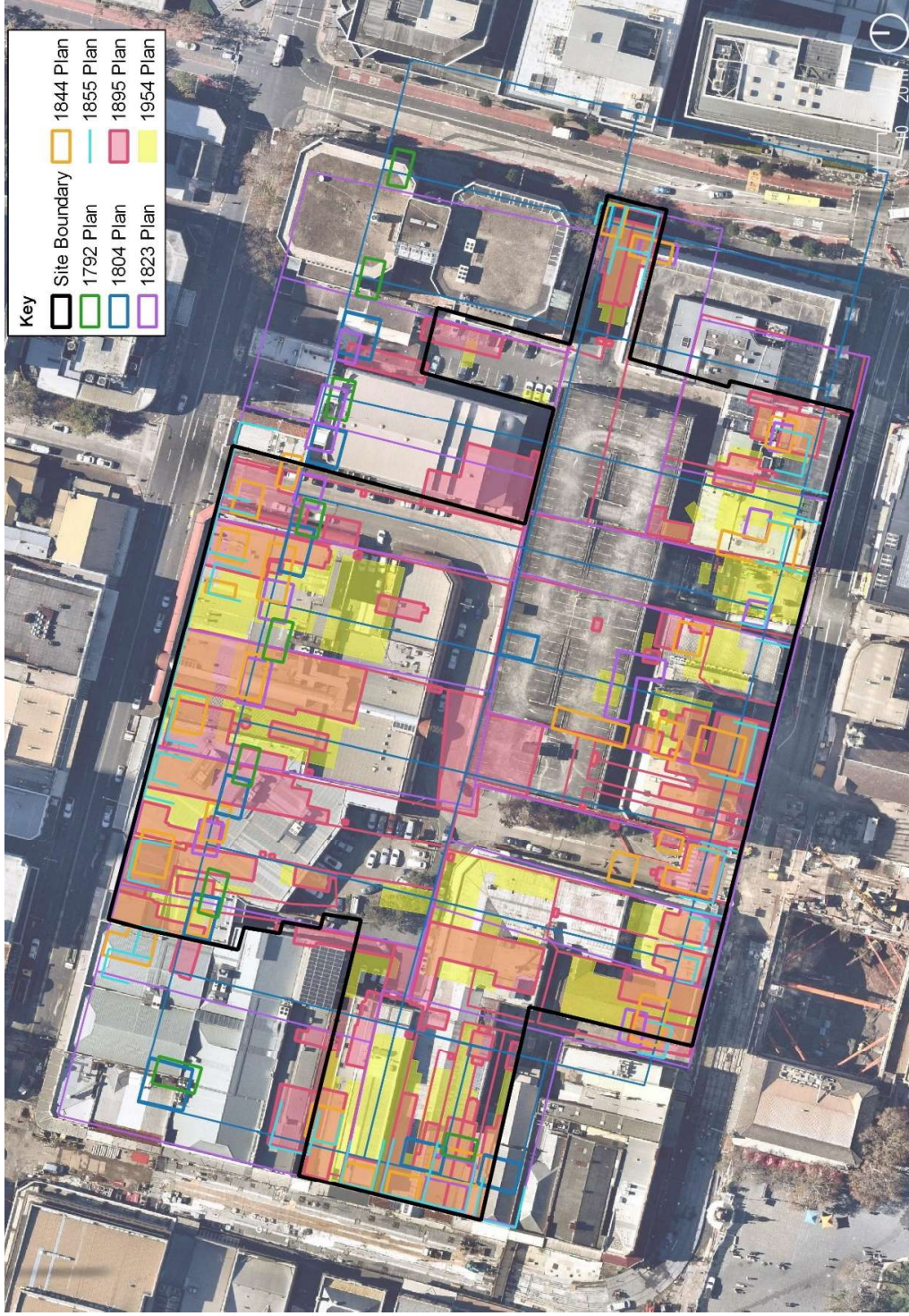


Figure 4.27 Overlay of buildings and features recorded on the 1792, 1804, 1823, 1844, 1855, 1895 and 1954 plans. (Source: Nearmap with GML overlay 2021)

4.8.2 Convict huts

The site is located within the original 1790s town layout that was centred along Church Street, George Street and Macquarie Street. Historical plans show five, possibly six, convict huts (and the associated allotments) within the site boundary and portions of the yard spaces of several other allotments. This section presents a discussion on the archaeological remains of convict hut sites based on the results of previous excavations. Locating the convict huts within the site using the historical plans is discussed further below. The term ‘convict hut’ is used to describe the small structures and their associated features which were built c1790–1800 initially to house convict workers and were then later occupied by free settlers. The huts were generally situated towards the street frontage of large allotments.

Watkin Tench described the huts on George Street (then High Street) in November 1790 as being two-room timber post-built structures measuring 12 feet (3.65 metres) wide and 24 feet (7.31 metres) long, with wattle and daub walls, a thatched roof and a brick chimney.³²⁸ He also noted they were designed to accommodate 10 men, though also noted that 12 or 14 were living in them. Importantly for this site, Tench also noted smaller huts along ‘a cross street’—which must be Church Street—designed for unmarried women. He also noted other smaller huts exclusively for convict families of ‘good character’. These may be the huts within smaller allotments recorded at the western end of Macquarie Street on the 1792 plan. Archaeological evidence confirms the general layout and dimensions, although small deviations from these have been observed.³²⁹

Convict huts generally survive in the archaeological record as rows of postholes marking the external and internal walls of the structure. Often found in association with these postholes are brick chimney bases and organic rich clay layers being remains of the wattle and daub walls. Many of these huts were poorly built and show evidence of repairs in the form of either additional timber posts or replacement of original posts. Many sites also contained evidence of outbuildings, usually timber post-built structures, and other features that are not documented on historical plans.

Several sites have provided evidence for the continued use of these structures by free settlers and emancipists into the 1830s to 1850s. One example comes from 45–47 Macquarie Street,³³⁰ where evidence was preserved for the ongoing use and refurbishment of three of the four convict huts excavated. These huts were expanded, with additional rooms added to the rear and sides and verandahs. One building featured the addition of sandstone footings that replaced the earlier timber posts, while another was converted to a timber frame. A cellar and well was found at one hut that may have been added in the early 1820s.

In addition to the huts and outbuildings, archaeological investigations have also demonstrated the potential for significant archaeological remains to survive within the yard spaces surrounding these huts. Rubbish pits, subterranean storage pits and cesspits, fences and allotment boundaries have also been found. Recent archaeological investigations at Parramatta RSL found a timber-lined cesspit and multiple rubbish pits that contained substantial quantities of late eighteenth and early nineteenth-century ceramics, including locally made lead-glaze items.³³¹

A list of known convict hut archaeological excavations and sites where hut remains have been preserved in situ in Parramatta is presented in Table 4.6 and their locations shown on Figure 4.29.



Figure 4.28 Fernando Brambilla’s 1793 view of Parramatta showing convict huts within large garden allotments lining George Street (then High Street) and the northern side of Macquarie Street (then South Street). The detail is showing the illustration of the convict huts on Church Street (arrow) and along George Street (circle) within the site. (Source: British Library, maps T.TOP.124 Supp F44)

Table 4.6 List of known ‘convict hut’ archaeological investigations in Parramatta. (The numbers correspond to the site locations numbered on Figure 4.29.)

No.	Site name	Address	No.	Site name	Address
1	Parramatta RSL (Club Parramatta)	2 Macquarie Street	8	Philip Ruddock Heritage Centre	134–140 Marsden Street, 45–47 Macquarie Street
2	Parramatta Park Gardens	Near George Street gatehouse, O’Connell Street	9	Telephone Exchange Site	21A George Street
3	Parramatta Children’s Court	2 George Street	10	N/A	41–53 George Street

No.	Site name	Address	No.	Site name	Address
4	New Blood Bank	4 George Street	11	The 'Babes in the Woods' Site	20 Smith Street
5	Parramatta Hospital	174 Marsden Street	12	N/A	95–101 George Street
6	Parramatta Justice Precinct	160 Marsden Street	13	N/A	180–180A George Street, 30–32 Charles Street
7	1985 site	9 George Street			

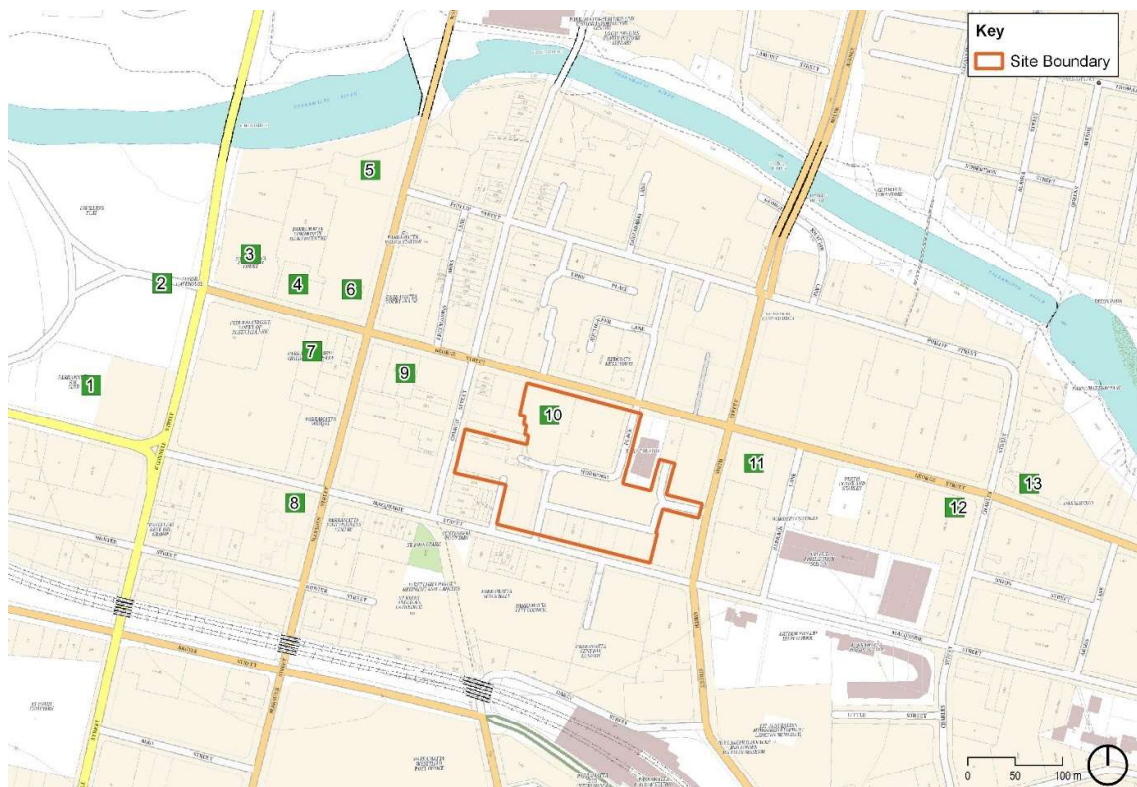


Figure 4.29 Locations of previous convict hut excavations or investigations (where still in situ). (Source: Google maps with GML overlay 2021)

Locating convict huts with the 1792 and 1804 plans

Two historical plans, dating from 1792 and 1804, show the location of convict huts within Parramatta (Figure 4.30). The 1804 plan has been used for this site as it is considered a more accurate representation of what was built, based on excavation results, than the 1792 plan. However, overlaying the 1804 plan onto a modern plan demonstrates this map is also not completely accurate. Casey & Lowe undertook a detailed review of the predicted locations of convict huts in the Gardens Precinct, Parramatta Park.³³² Using existing data from a nearby excavation, and historical data on the proposed space of huts (100 feet or 30.5 metres), Casey & Lowe concluded that the 1804 plan is accurate to within ± 5 metres.

The locations of convict huts at the 'Babes in the Woods' site and the 45–47 Marsden Street site were also used to inform the geo-referencing the 1804 plan for this site. Information on the location of the convict hut preserved below the development at 41–47 George Street was not available at the time of

preparing this assessment. Attempting to use both sites as control points for the map resulted in a similar level of accuracy to that determined by Casey & Lowe. Here, the difference between the actual hut locations and the 1804 map was found to be around 2 metres north–south and 3–5 metres east–west. Following Higginbotham’s assertion that the alignment of George Street has not altered,³³³ the ‘Babes in the Wood’ hut location was used to geolocate the 1804 plan for this project.

The approximate location and potential for archaeological remains of convict huts and other evidence of Phase 1 activities is discussed below for each allotment. These provide adequate parameters to identify potential archaeology associated with the convict huts. Archaeological investigations will be needed to test the assumptions made in our georeferencing and confirm both the location and survival of remains.

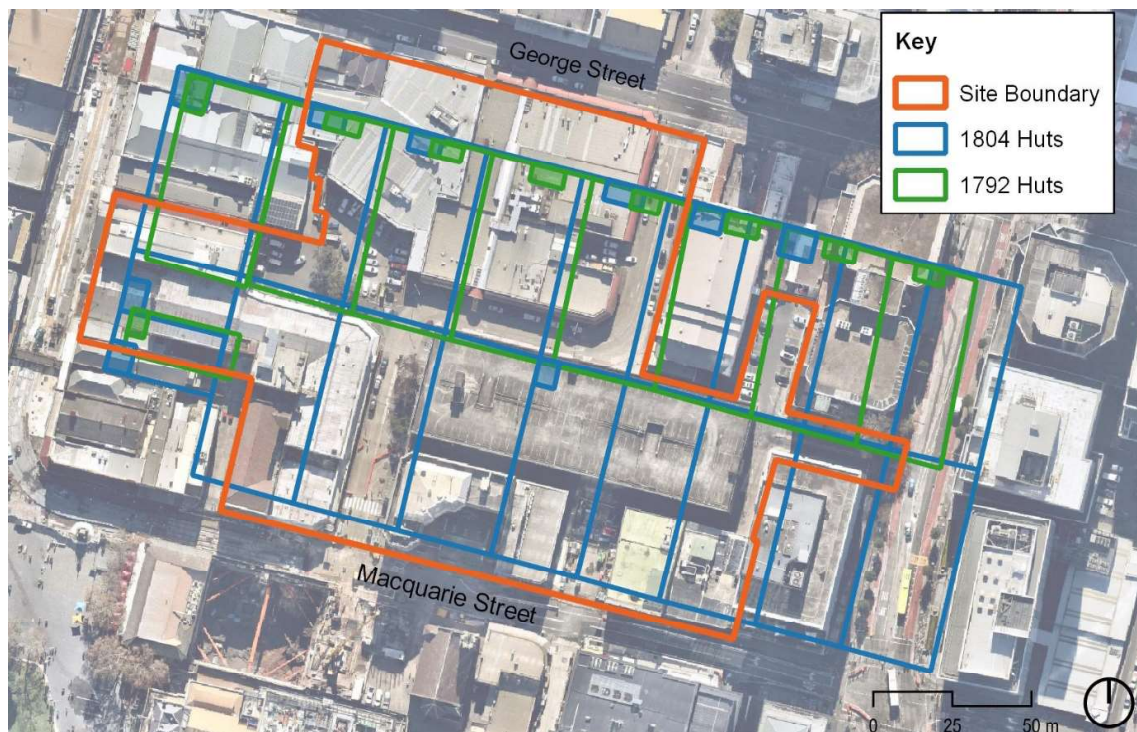


Figure 4.30 Approximate location of convict huts and allotments within the site based on the 1792 and 1804 plans. (Source: Nearmap with GML overlay 2021)

Understanding development of convict huts using the 1823 and 1844 plans

The 1823 plan shows the first formal leases issued in Parramatta. Comparing this plan with the 1804 plan of the convict huts allows for the potential identification of sites where convict huts may have survived and housed free settlers or emancipated convicts, or where they were removed and redeveloped. As discussed above, projecting the 1823 plan onto a modern plan is not completely accurate. Two excavations of convict hut sites (New Blood Bank and Philip Ruddock Heritage Centre) have demonstrated the survival and continued use of convict huts into the 1820s. These sites were reviewed to assess how well the actual locations of the buildings aligned on the 1804 and 1823 plans. This showed that while the buildings closely overlapped at the Philip Ruddock Heritage Centre site (within 1 metre), the buildings at the New Blood Bank site are in alignment along the north–south axis, but do not overlap. The difference observed at the New Blood Bank site presumably relates to issues with projecting historic plans and has been taken into consideration in the discussion below. The 1844

plan has also been reviewed as this plan records the material of each building (ie brick, stone or weatherboard/timber), as many of the buildings shown on the 1823 plan survived into the 1840s.

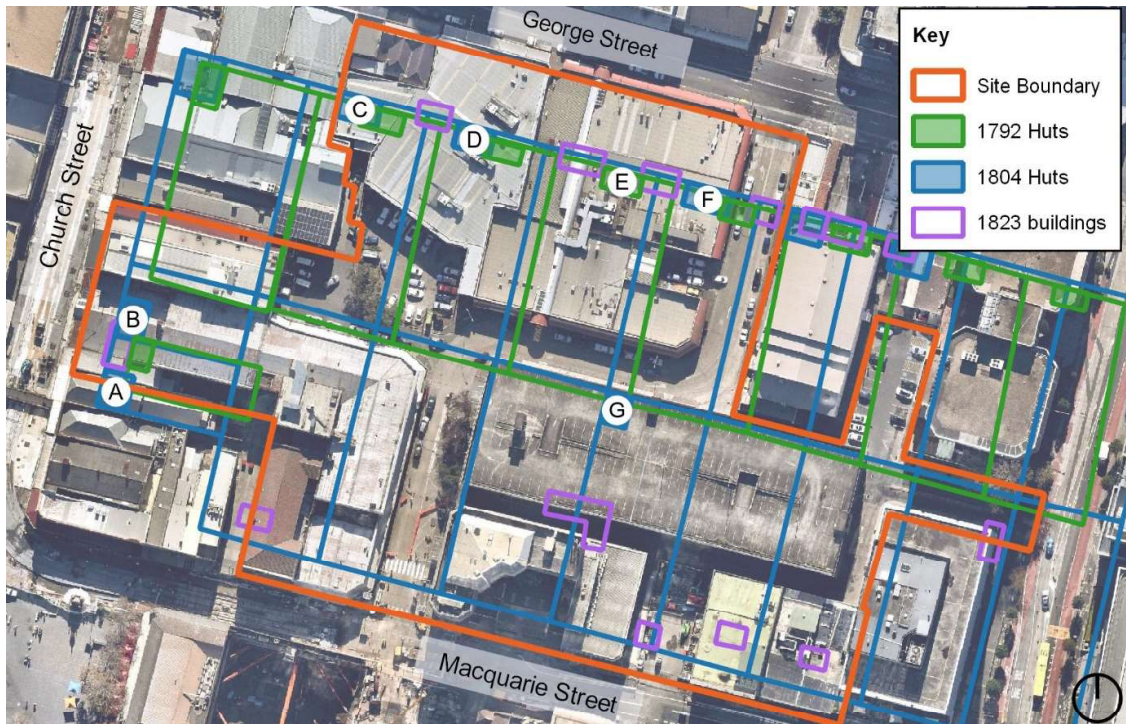


Figure 4.31 Approximate location of convict huts and allotments within the site using the 1792 and 1804 plans and cross referencing with the 1823 plan. The hut sites within the site are labelled A to G. (Source: Nearmap with GML overlay 2021)

The following observations can be made regarding the survival of convict huts into the 1820s through a comparison of the 1804 and 1823 plans.

- Huts A and B, Lot 15a—the building shown on the 1823 plan is immediately west of the hut on the 1792 plan, northwest of Hut A and southwest of Hut B on the 1804 plan. As the 1844 plan shows a brick or stone building on the same location as the 1823 plan, it is probable that both Huts A and B were demolished and replaced by 1823.
- Hut C, Lot 12—this hut was archaeologically excavated in 1996. The hut was repaired on multiple occasions and the rear wall was rebuilt in masonry. However, the report does not identify when these modifications occurred or at what date the building was demolished. While the hut is not shown on the 1823 plan it may have continued to be used into this period as a secondary structure on the property that was not recorded on this plan.
- Hut D, Lot 14—the building shown on the 1823 plan lies about 4 metres west of Hut D and overlies the boundary line between two allotments on the 1804 plan. The 1844 plan shows a brick or stone building partially overlapping the 1823 building. This would suggest that Hut D was demolished and replaced by 1823.
- Hut E, Lots 15 and 16—Hut E was not shown on the 1804 and had presumably been demolished by this date. The 1823 plan shows two buildings on either side of Hut E, one within

Lot 15 and the other in Lot 16. It is unlikely that either of the buildings shown on the 1823 plan are the same as the building on the 1792 plan.

- Hut F, Lots 16 and 17—Hut F appears to have been demolished by 1823. A review of the overlays shows a close alignment between two convict huts that are immediately east of Hut F on the 1804 plan with two buildings on the 1823 plan. Given the close correlation between these structures on the plans, it would be expected that the location of Hut F on the 1804 plan would overlap with the location of the buildings on the 1823 plan. As this is not the case, it likely that Hut F was demolished by 1823 and replaced with new buildings.

4.8.3 Contact archaeology

British colonisation of Parramatta marked the beginning of great upheaval for Aboriginal groups living in and around Parramatta. Aboriginal people continued to live in the area and interact with the early colonists. Initially a barter system was developed; however, this soon ended as the colonists continued to push Aboriginal people from their land, leading to violent exchanges. In the late 1790s Parramatta was subject to several raids led by the warrior Pemulwuy. The Parramatta Native Institute was established by Governor Macquarie to manage the relationship between the colonising power and the Aboriginal population. It was located near the site at the corner of Macquarie and Church Streets and operated between 1814 and 1832. Interactions from this point on were increasingly characterised by policies of assimilation and control.

The site has potential for contact archaeology. Archaeological evidence suggests that Aboriginal people may have pushed to the town fringes and to farmland on the outskirts during the early years. Contact archaeology has recently been identified at the Parramatta Square site to the south³³⁴, Arthur Phillip High School and Parramatta Public School further east along Macquarie Street³³⁵, and at Robin Thomas Reserve.³³⁶ The southern half of the site along Macquarie Street remained undeveloped until the early nineteenth century. Aboriginal people may have continued to use this area and archaeological evidence could include hearths, and traditionally modified ceramic, glass and flint artefacts, within the natural and modified natural soils.

4.8.4 Parramatta Convict Drain

The Parramatta Convict Drain, also known as the Town Drain, was constructed to aid drainage of water runoff from the surrounding high ground on the south side of the early town of Parramatta. It was constructed in sections from the 1820s until the 1840s. The earlier section of the drain lay closer to Parramatta River, roughly north of George Street, and was constructed as a brick barrel-vaulted oviform drain in the 1820s. The later section south of George Street was a sandstone box drain that appears to have been constructed c1840–1841.

Based on the results of nearby excavations, a section of the Town Drain alignment is known to pass through the southeast corner of the site. Archaeological excavations at 25 Smith Street, 3 Parramatta Square, below Macquarie Lane for the Parramatta Square Trunk Sewer and below Macquarie Street for the Parramatta Light Rail have provided information on the drain's location, size and construction. The results of previous investigations have also allowed for a reasonably accurate plot of the drain's location with the site through 72 and 74 Macquarie Street and Macquarie (Figure 4.33). A brief description of the Town Drain based on the results of these excavations follows.

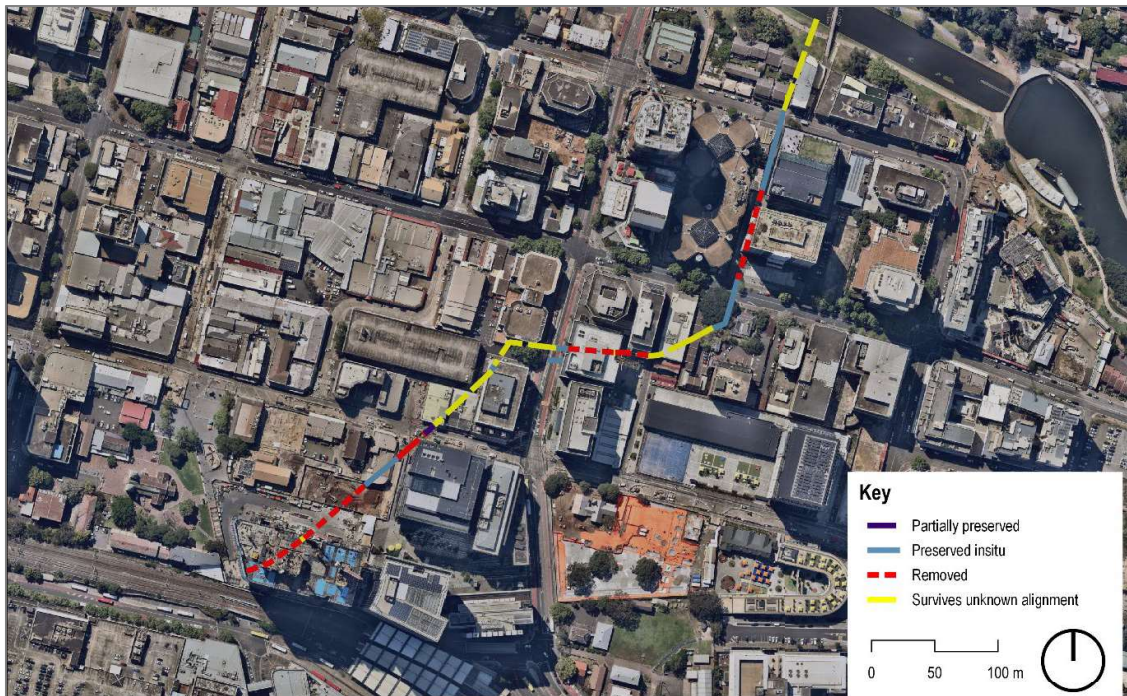


Figure 4.32 Alignment of the Town Drain showing where it has been removed and where it survives, or potentially survives, in situ. (Source: Nearmap with GML overlay 2021)



Figure 4.33 Projected alignment of the Town Drain through the southeast corner of the site—from Macquarie Street through Lot 28 and through Lot 74. (Source: Nearmap with GML overlay 2021)

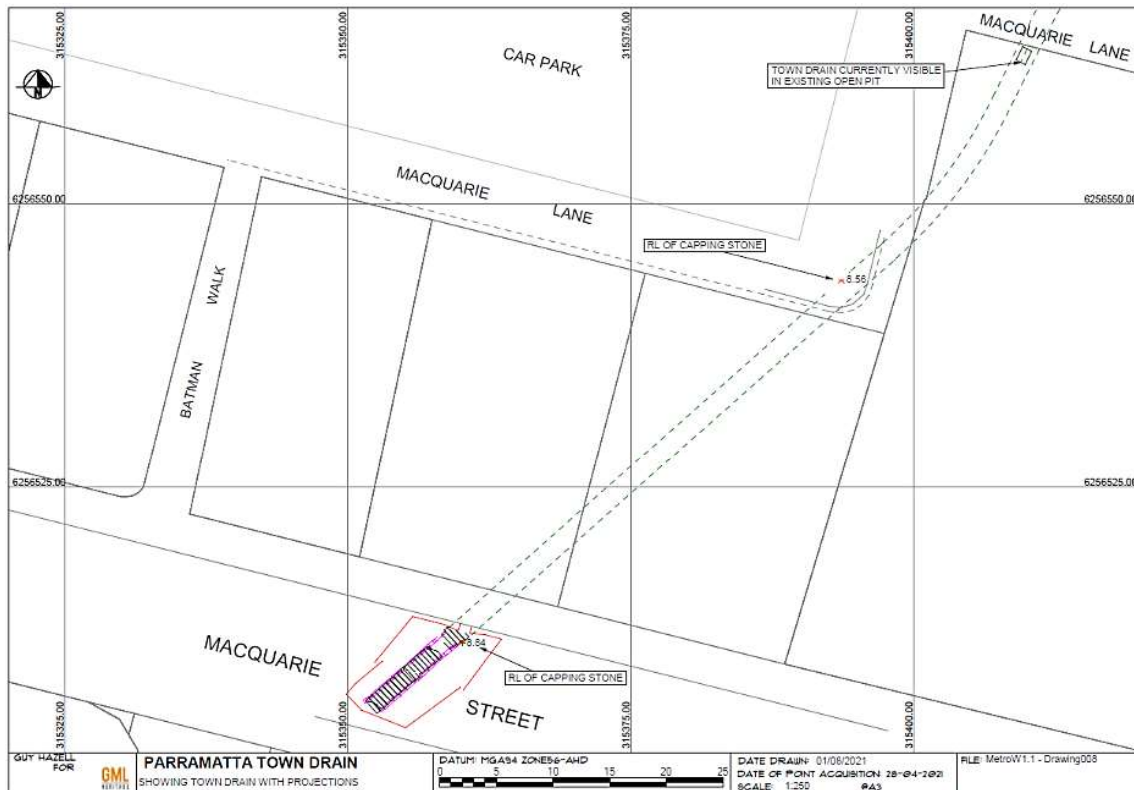


Figure 4.34 Survey of the Town Drain uncovered within Macquarie Street for Parramatta Light Rail with project alignment to two confirmed locations in Macquarie Lane. (Source: Guy Hazell for GML 2021)

A 9-metre section of the Town Drain was uncovered below Macquarie Street during archaeological investigations for the Parramatta Light Rail project in 2020. This section of the Town Drain measured 1.84 metres wide, with an internal width of 1.2 metres and depth of 0.9 metres (Figure 4.35). The top of the drain is at about 8.9 metres above AHD. It was constructed of four courses of ashlar sandstone blocks, bonded with a yellow sandy mortar. The base of the drain was a 100-millimetre-thick layer of poured concrete, and it was capped with a double layer of reinforced concrete slabs. The slabs were precast and surviving newspaper impressions on the underside suggest these were added in the 1930s. The base and capping were later modifications to the original sandstone drain.

The drain was built in a 3.8-metre-wide construction cut (Figure 4.35). The cut had vertical sides and was cut into a truncated A₂ horizon (subsoil). A series of levelling fills were introduced after the drain was constructed, which may have been put down to build the road over the drain. Two split timber logs were found towards the base of the construction cut, parallel with the second course of the drain. These logs may have been put down to create a stable work platform during the drain's construction.

No evidence was found in Macquarie Street for the continuation of the infilled creek line found below the Town Drain during excavations by Casey & Lowe at 153 Macquarie Street (PS3) in 2015–2016. It is likely that the creek shallowed out before reaching the Macquarie Street roadway, or that the drain no longer followed the course of the creek at this point. It is also possible that the drain diverted or rechannelled the original course of the creek. Further archaeological investigations within the Parramatta Station construction site may provide evidence to answer this query.

The exterior of the drain was exposed during the sewer works in Macquarie Lane carried out by Casey & Lowe.³³⁷ This section of the drain was three courses of sandstone blocks with a concrete capping. There was no evidence to suggest that the drain was built within a creek line. Here the top of the drain is at 8.56 metres AHD, 380 millimetres below the modern road surface.

The results of archaeological excavations at 25 Smith Street suggest that the drain became wider and shallower as it moved upslope to the south. Here, the drain had an internal width of 0.8 metres and was 0.45 metres deep. This section of the drain was two–three courses high, featured a clay base and was also capped with concrete slabs. The top of the drain was recorded at 8.35 metres AHD. A section of the drain in the northwest corner of the site has been preserved in situ (Figure 4.37). The Town Drain alignment within the site is in Lots 28 and 74. The archaeological potential is discussed in Sections 4.8.12 and 4.8.13 below.



Figure 4.35 View southwest showing the Town Drain with halved trunks in situ on either side. Excavation in the southern (westbound) lane of Macquarie Street. Scale is 1 metre. (Source: GML 2020)



Figure 4.36 Northeast-facing section showing levelling fills on the eastern side of the drain. Excavation in the northern (eastbound) lane of Macquarie Street. (Source: GML 2020)



Figure 4.37 The location of the conserved section of Town Drain at the northwest corner of 25 Smith Street and 76–78 Macquarie Street, marked by different coloured paving tiles. (Source: Google Maps Street View, accessed 15 July 2021)

4.8.5 Lot 15a—220, 222–230 and 232 Church Street

The 1792 and 1804 plans record one convict hut and part of another within what was later to become Lot 15a. These huts are likely to be those referenced as being designed for unmarried women. By 1823 the boundaries of the lot had changed and it had been leased to Charles Whalan. One building set back from the Church Street frontage is recorded in the lot on the 1823 plan. Whalan was a convict

(arrived 1791) who later served with the New South Wales Corps and became a sergeant in the Governor's Bodyguard (retired 1822). According to the 1828 census he and his family were not living at the property at that time.

The lot was granted to his son, James Whalan, in 1843. The 1844 plan records two additional buildings on the street frontage. The lot was occupied by James Urquhart, a coach manufacturer, when it was subdivided and sold in 1844. The subdivisions were developed as shops and residence in the mid-late nineteenth century, including a victualler, a shoemaker, a draper, a chemist, a tobacconist, a hairdresser, a bakery and a dentist. In the twentieth century, the mercantile use continued and businesses included Hunter's Boots. The *Cumberland Argus* operated from part of the lot, a chamber (office suites) was also developed in the 1930s and a Coles building opened in the 1950s.

The historical development and subdivision pattern of Lot 15a is complex. The current street addresses within the lot are used to discuss the archaeological potential below.

Phase 1: 1788–1820s

The 1804 plan shows a convict hut set back from the Church Street frontage below the building on 222–230 Church Street. A phase of redevelopment, likely demolition of the original structure, prior to the 1820s is recorded on the 1823 plan, as a larger building is shown in a slightly different location. Part of a second hut extends into the southern part of 220 Church Street. However, this appears to have been demolished by 1823 as it is not recorded on the plan. Potential archaeology includes evidence of the original hut structures, deposits and features associated with its occupation by convicts within the building and in the surrounding yard space. There may also be artefacts or other material evidence associated with female convicts, if these huts were those referenced as being designed specifically for unmarried women.

As other archaeological investigations have found, it may be difficult to identify a distinct convict occupation layer, or 'archaeological signature', within Phase 1 given the subsequent alterations and redevelopment by free settlers. Structural remains of timber buildings (postholes etc) may not survive alterations or replacement with brick or stone structures. Occupation deposits may get modified, mixed or removed. The building recorded on Whalan's lease on the 1823 plan is later identified as a brick building on the 1844 plan—the archaeology of this building, associated deposits and features within the structure and the yard is likely to be more legible. The archaeological evidence of this redevelopment during Phase 1 is associated with Whalan—an emancipated convict who became a sergeant in the Governor's Bodyguard during King and Macquarie's tenure. It is not clear from the records if Whalan and his family built and lived in the house up to the 1820s, though it is possible.

The types of archaeological remains generally expected for Phase 1 are outlined in Section 4.7.1. Multiple phases of redevelopment of this lot in the nineteenth and twentieth century is likely to have resulted in impact to this earliest phase. There is low-moderate potential for archaeological remains of Phase 1 below 222–230 and 232 Church Street. There is moderate potential for archaeological remains of Phase 1 below 220 Church Street, as this property has not had substantial redevelopment since the 1880s.

Phases 2 and 3: 1820s–1880s

The brick building within Whalan's lot (Charles and then son James) survives until the 1840s and possibly also the 1850s. The 1844 plan records two additional buildings fronting Church Street—one below 222–230 Church Street and the other below 232 Church Street. The archaeological remains of

these buildings and later alterations, associated deposits and features within the buildings and surrounding yards are associated with Urquhart, who lived and worked as a coach builder in Lot 15a in the 1830s and 1840s. There may have been other occupiers prior to the 1830s; however, they have not been identified in our historical research so far. The archaeological evidence may provide further information about the occupancy in the 1820s.

Following the sale and subdivision in the mid-nineteenth century, redevelopments and occupation associated with an array of retail and trade businesses would have resulted in a strong archaeological signature. Archaeological remains associated with these properties could include brick or stone footings, postholes and timber beam slots, occupation deposits, cellars, brick or timber outbuildings (such as kitchens, stables and workshops), wells, cisterns, yard surfaces, artefact scatters, cesspits and rubbish pits containing both domestic and commercial related artefacts.

The types of archaeological remains generally expected for Phases 2 and 3 are outlined in Section 4.7.2 and 4.7.3. Later nineteenth and twentieth-century redevelopment is likely to have resulted in some impact to archaeology from Phases 2 and 3. There is moderate potential for Phases 2 and 3 archaeology below 222–230 and 232 Church Street. There is high potential for Phases 2 and 3 archaeology below 220 Church Street.

Phase 4: 1880s–1950s

There is also a moderate potential for Phase 4 archaeological remains, including brick footings of the c1880s shops built along the Church Street frontage below 222–230 Church Street. The existing shop at 220 Church Street dates to the 1880s and there is high potential for Phase 4 archaeological remains at the rear of the structure. Potential archaeological remains could include brick footings, concrete footings of the Post Office Chambers, occupation deposits, outbuildings including the baker's oven, a brick stable and hayloft that may be shown at the rear of 222–230 Church Street on the 1895 plan, yard surfaces, cisterns, and cesspits and rubbish pits with associated domestic and commercial related artefacts. The types of archaeological remains generally expected for Phase 4 are outlined in Section 4.7.4.

Summary

Excavation for footings of the Phase 5 (1950s–present) 1960s arcade and c1980s office building will have resulted in localised impacts across Lot 15a. However, there is potential for multiple phases of archaeology to survive.

- 220 Church Street—moderate to high potential for archaeological remains associated with Phases 1–4 below the existing 1880s building
- 222–230 Church Street—low to moderate potential for archaeological remains associated with Phases 1–4 below the existing buildings
- 232 Church Street—low to moderate potential for archaeological remains associated with Phases 1–4 below the existing buildings.

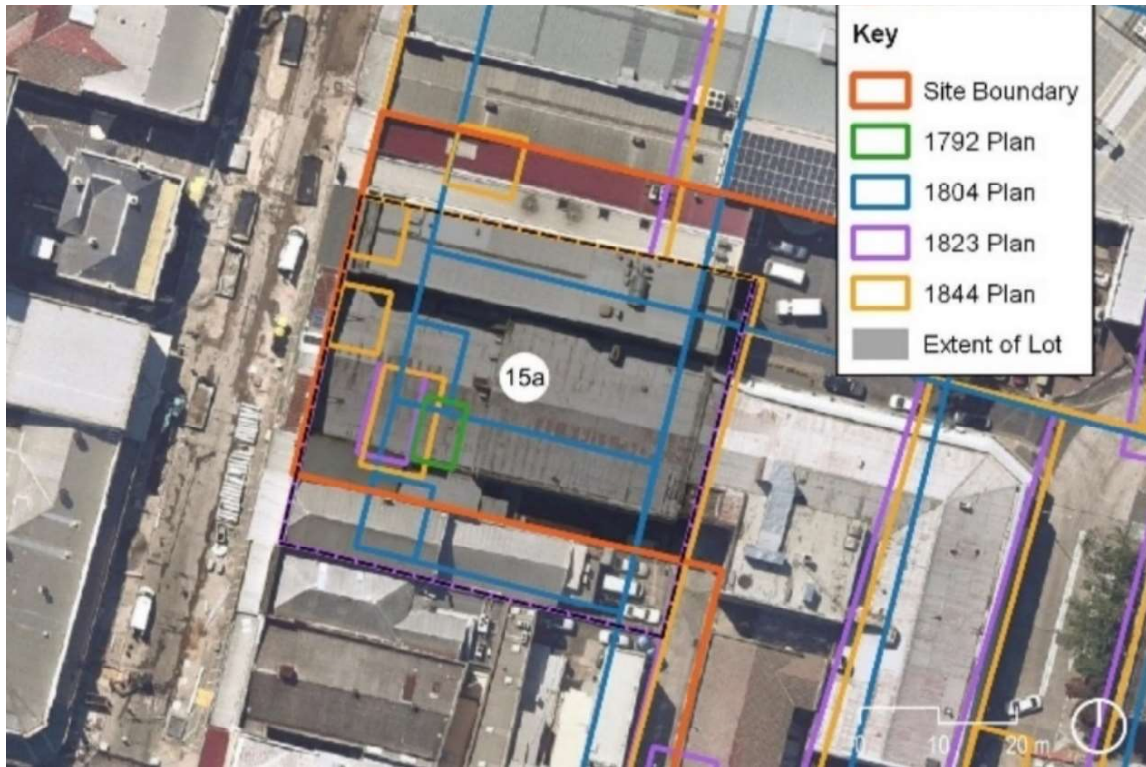


Figure 4.38 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 220, 222–230 and 232 Church Street. (Source: Nearmap with GML overlay 2021)

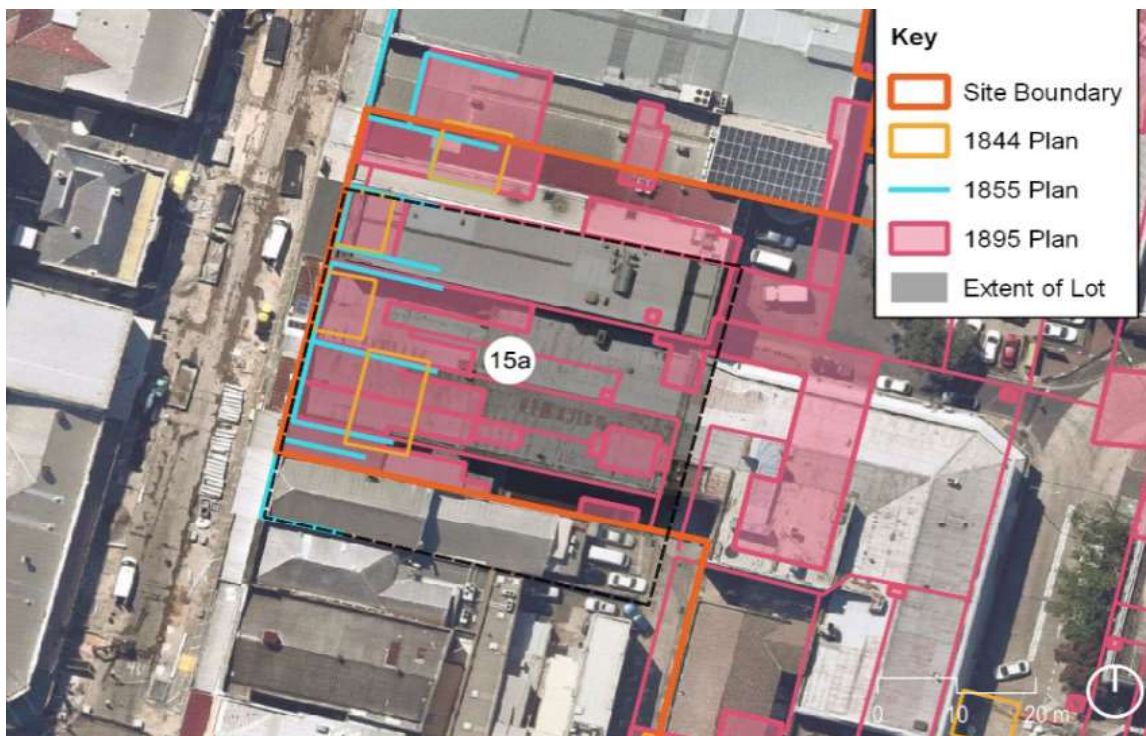


Figure 4.39 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 220, 222–230 and 232 Church Street. (Source: Nearmap with GML overlay 2021)

4.8.6 Lot 10, Lot 12 (part)—236 and 238 Church Street

Nos 236 and 238 Church Street were formed from the rear yards of two convict hut allotments that fronted George Street—Lots 10 and 12—both with buildings recorded on plans from 1792 (but outside the site) (Figure 4.40). Lot 10 was leased to William Sherwin in 1823 and a building was recorded on the Church and George Street corner. It was granted to John Tingcombe in the 1840s, though it was likely he was associated with the lot from the 1830s. Subdivision and development was recorded on the 1844 plan with a brick building fronting Church Street within the site (Figure 4.41). The rear of the property was still part of Lot 12. Part of Lot 12 is associated with Abigail Kelly, a convict who arrived in 1821. It had been subdivided by the 1840s, when the whole lot was granted to Francis Watkins. The development by this time is illustrated on the 1844 plan. The development from this point was focused to the Church Street frontage and what was later to become 236 and 238 Church Street. It was associated with Watkins and his store until the 1860s, and then Hugh Taylor, a prominent local figure and butcher. In the early twentieth century Rawlinson Bros grocers, a butcher and various other retail businesses operated from the site.

Phase 1: 1788–1820s

This part of the site was the very rear yard of two convict hut allotments. Potential archaeological remains could include evidence of original lot boundaries, cultivation, water management and waste disposal. It would be unlikely that archaeology of the convict occupation would be distinguishable from subsequent occupation by emancipists and free settlers during Phase 1. The types of archaeological remains generally expected for Phase 1 yard areas are outlined in Section 4.7.1. There is low potential for archaeology from Phase 1 as later nineteenth-century development is likely to have disturbed and truncated the earlier evidence.

Phases 2 and 3: 1820s–1880s

The archaeology from Phase 2 is associated with Sherwin and then Watkins. Watkins was involved in various business activities in Parramatta and operated a store on Church Street from the 1830s. This later became associated with Hugh Taylor, the butcher, from the 1860s. The partial remains of a c1840s sandstone cellar is preserved below 236 Church Street (Figure 4.3). The remainder of the cellar is also expected to survive below 238 Church Street. The excavation report for 236 Church Street does not identify whether other structural remains of this building were uncovered. Available photos of the excavation show little of the site beyond the cellar, although a section of later brickwork west of the cellar suggests remains of later additions may be preserved. Based on these results, this part of the site is considered to have a moderate potential for other structural remains of the c1840s building and c1870s timber extension. This would include sandstone and/or brick footings, timber beam slots or posts, and occupation deposits. Remains of a c1870–1880 brick floor is also preserved below the existing building at the rear of 236 Church Street. There is high potential for other remains of this structure, including brick footings and/or timber beam slots and postholes. There is also a high potential for wells, cesspits and rubbish pits to be present at the rear of both these properties. The types of archaeological remains generally expected for Phases 2 and 3 are outlined in Section 4.7.2 and 4.7.3.

Summary

There is a low potential for archaeological remains from Phase 1 and a moderate to high potential for archaeological remains from Phases 2–4 to survive below 236–238 Church Street.



Figure 4.40 The 1804 plan showing Part Lot 10 and 12 that later forms 236 and 238 Church Street. (Source: GML overlay 2021)



Figure 4.41 The 1844 plan showing Part Lot 10 and 12 and the property that later becomes 236 and 238 Church Street following subdivision. (Source: GML overlay 2021)



Figure 4.42 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 236 and 238 Church Street. (Source: Nearmap with GML overlay 2021)

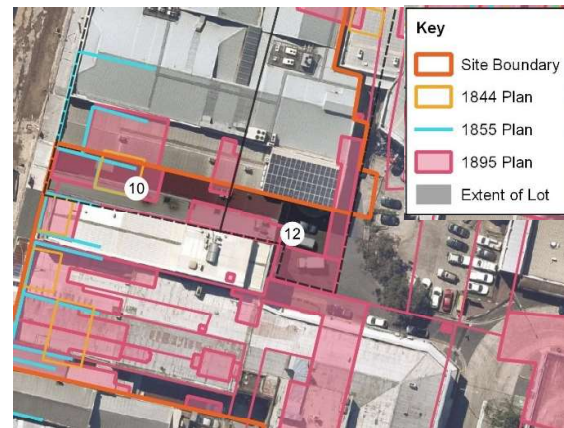


Figure 4.43 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 236 and 238 Church Street. (Source: Nearmap with GML overlay 2021)

4.8.7 Lot 12 (part)—41 George Street

This property was part of an original convict hut allotment on the 1804 plan. The subdivision leased to Abigail Kelly, an Irish emancipated convict, did not have buildings recorded on the 1823 plan. The lot was granted to Francis Watkins. The eastern portion of the lot, and the building recorded on the 1844 plan, was occupied by Henry Whitaker and family from the 1830s to 1850s. Whitaker was a chemist/druggist. The site was redeveloped after the 1850s and leased to Cyrus Fuller, a bookseller and printer, who lived at and operated his business from the site between the 1850s and 1880s. Various local newspapers were associated with the site at this time. The rear of this property was part of a redevelopment in the 1990s and included archaeological investigations. Most of Lot 12 within the site has been subject to previous archaeological investigation, excluding the early twentieth-century brick building in the northwest corner. The extent of these excavations is shown in Figure 4.2.

Phase 1: 1788–1820s

The 1996 archaeological excavation found remains of a 1790s convict hut within Lot 12. Remains of the hut included timber postholes, evidence for repairs and later additions. The site of the hut and rear yard was subject to archaeological investigations and there is low potential for any further remains associated with this phase of occupation to survive within Lot 12.

Phases 2–4: 1820s–1950s

The archaeology from these phases is associated with both domestic and commercial occupation by Whitaker (chemist) and Fuller (bookseller/printer). The extant brick building in the northwest corner of the site was outside the areas subject to archaeological investigation in 1996. This building was likely constructed in the early twentieth century, replacing a c1870–1880 brick building. There is a moderate potential for remains of the earlier building, including brick or stone footings, and a low potential for occupation or underfloor deposits. There is also potential for undocumented structures associated with the building shown on the 1844 plan immediately outside (west) of the site. Archaeological remains could include brick or stone footings, postholes or timber beam slots, and occupation deposits. The range of archaeology types for Phases 2–4 is outlined in Section 4.7.2 to 4.7.4.

The 1996 archaeological excavation also found remains of a well and beehive cistern that have been preserved in situ below the existing building.

Summary

There is a low potential for archaeological remains from Phases 1 and 2 and a moderate potential from Phases 3 and 4 below the early twentieth-century shop front in the northern part of the lot. Truncated remains of a well and cistern are preserved below the existing building. The remainder of this lot was subject to archaeological excavation in 1996 by AMAC and the potential for archaeological remains is low.



Figure 4.44 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 41 George Street. (Source: Nearmap with GML overlay 2021)

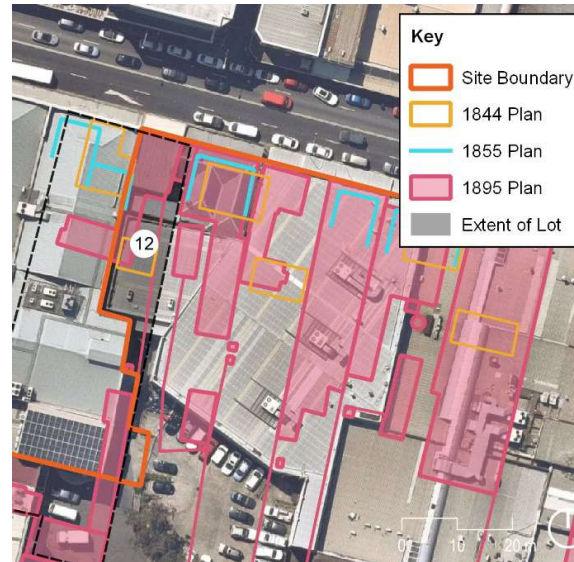


Figure 4.45 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 41 George Street. (Source: Nearmap with GML overlay 2021)

4.8.8 Lot 14—43–59 George Street

Lot 14 includes part of two original convict hut allotments illustrated on the 1804 plan. The lot was leased to John Montgomery, an emancipated convict, in the 1820s. He may have operated an inn from the site (Saint Patrick's Inn) and perhaps it was the building illustrated on the 1823 plan. Two buildings are illustrated on the 1844 plan and the lot was further subdivided into three lots in the mid-nineteenth century. Lot 1 was occupied by a baker, several chemists and various tenants throughout the rest of the nineteenth century. Lots 2 and 3 included various shopkeepers and a draper, and both were redeveloped in the 1880s for the Parramatta Assembly Hall Company. This became a bank in 1900 and a movie theatre (Victoria Theatre) in the 1920s. Various other shops operated from the site in the twentieth century.

This lot was redeveloped in the 1990s, with the western third and southern part of this lot subject to archaeological excavations. The extent of these excavations is shown in Figure 4.2.

Phase 1: 1788–1820s

The predicted location of the convict hut in Lot 14 (on the eastern side) was not subject to archaeological investigation and remains of the hut are expected to survive below the existing building floor slab. If present, the convict hut is expected to be located close to the eastern edge of this lot based on the 1804 plan (Figure 4.46). Archaeological remains could include evidence of the original structure, features and deposits and alterations through Phase 1. The hut may have been replaced by the 1820s and evidence of the inn operated by Montgomery may survive. The rear of the lot has moderate potential for various yard features and deposits (refer to Section 4.7.1) associated with the original convict huts and later development by emancipists during Phase 1.

Phases 2–4: 1820s–1950s

The 1996 archaeological excavation found remains of the 'smithy', kitchen and stables shown on Figure 2.53, a well (preserved in situ below the existing development), and large artefact dumps associated with commercial operations from the 1850s–1870s. The northeast part of Lot 14, outside those areas previously excavated, has moderate potential for archaeological remains of residential and commercial buildings from the 1820s, 1840s, c1850–1870s, 1880s and 1890s (Figure 4.46, Figure 4.47). There is also a moderate potential for archaeological remains from Phases 2 to 4 in the southeastern half of Lot 14 (in the rear yard area). There are no buildings shown on available historical plans or title documents, which suggests the rear of this lot remained largely undeveloped until the mid-twentieth century. Archaeological remains could include undocumented brick or timber outbuildings, yard surfaces and artefact scatters, fences (postholes), wells, cisterns, cesspits or rubbish pits. A range of commercial and manufacturing ventures operated from the buildings on this allotment, and the summary description of the excavation refers to bottle dumps associated with a cordial factory and chemist.³³⁸ There is potential for other substantial artefact dumps associated with the commercial operations to be present across the rear of Lot 14.

Summary

The western and southern parts of this lot has been subject to archaeological investigations as part of the redevelopment for the current building in the 1990s. There is moderate potential for archaeology associated with Phases 1–4 in the eastern part of this lot, including the potential for remains of a convict hut in the northeast of Lot 14. There is low potential for archaeological remains within the areas subject to archaeological investigation in 1996. Remains of a well are preserved below the existing building in the western part of Lot 14.

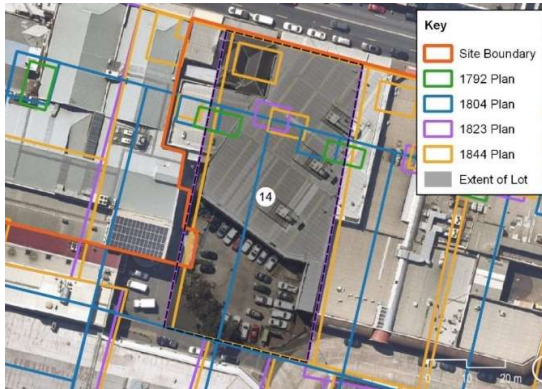


Figure 4.46 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 43–59 George Street. (Source: Nearmap with GML overlay 2021)



Figure 4.47 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 43–59 George Street. (Source: Nearmap with GML overlay 2021)

4.8.9 Lot 15—Parramall, 61B George Street (western half), Horwood Place

Lot 15 includes most of an early lease identified on the 1804 plan (lease 12). It was leased to Sarah Brabyn, a free settler who was involved in farming and cattle. Part of a convict hut recorded on the 1792 plan could be within the lot. However, there are no structures recorded on the 1804 plan. In 1823 the lease was granted to Joseph Grose, an emancipated convict, and a building was recorded on the plan at this time. Grose operated a store from the property until the early 1830s when it was sold to William Byrnes. Byrnes was a storekeeper, brewer and an estate agent, and was formally granted the lot in 1839. Two buildings are recorded on the 1844 plan. In the 1860s the lot was sold to Robert Adam Ritchie, who developed it as an ironworks that operated until the 1880s. During the 1890s and through to the mid-twentieth century various produce and goods markets and auctioneers operated from the site. It was transferred to the council in the 1950s and Parramall was developed on the site in the 1970s.

There have been multiple phases of historical development in this lot and the overlay of recorded features are illustrated in the figures below (Figure 4.48 and Figure 4.49). An aerial photograph taken during construction of Parramall shows that the area was stripped to ground level (Figure 4.50). However, the extent of any bulk excavation below the ground level is not known. The building is low-rise and would not necessarily have needed substantial foundations and perhaps the site was capped rather than excavated. It is likely the building is supported on strip and pier footings, which would have resulted in localised impacts and removal of archaeological deposit within their footprints.

The northwest corner of Lot 15 forms part of the adjacent property at 43–53 George Street, and this area may have been included in the archaeological excavations carried out prior to the development in 1996. The southern end of Lot 15 is below Horwood Place (the road), which was constructed in the 1950s and may not have involved extensive excavation to construct it. There will be localised deep impacts for services within the road.



Figure 4.48 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans. (Source: Nearmap with GML overlay)



Figure 4.49 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans. (Source: Nearmap with GML overlay)



Figure 4.50 1978 aerial photograph during construction of Parramall. (Source: NSW Spatial Portal img 2707–13–144)

Phase 1: 1788–1820s

There is a moderate potential for archaeological remains of the convict hut shown on the 1792 plan. While the 1792 plan places part of the hut within the footprint of the c1870s ironworks workshop, the 1996 salvage excavation in Lot 14 demonstrates the potential for Phase 1 structural remains to survive below later developments within this part of Parramatta. If present, remains of the hut site could include postholes, occupation deposits, outbuildings, rubbish pits and cesspits, and deposits containing artefacts. There is also potential along the western part of Lot 15 for yard features associated with the convict hut in Lot 14, such as boundary markers (postholes or ditches), outbuildings, cesspits and rubbish pits. A comprehensive list of the types of archaeology from Phase 1 is outlined in Section 4.7.1.

Phase 2: 1820s–1860s

There is also a moderate potential for remains of a c1820s brick or stone building within the eastern part of this lot, also within the footprint of the later ironworks workshop. Archaeological remains could include brick or stone footings, occupation deposits and features, undocumented outbuildings, yard surfaces and artefact scatters, well(s), cistern, cesspits and rubbish pits. These remains are likely to be associated with Joseph Grose and William Byrnes, who both lived at and operated a store from the site. A list of the types of archaeology from Phase 2 is provided in Section 4.7.2.

Phases 3 and 4: 1860s–1950s

There is a moderate to high potential for archaeological remains associated with Ritchie's ironworks to survive within this lot. The ironworks was operating on this lot by 1867, and an illustration and accompanying article about the ironworks in 1880 shows it contained the following structures (Figure 4.51):

- Brick house in the northwest corner, fronting George Street. This was occupied by Ritchie and his family. It is not known whether this building replaced the earlier structure shown on the 1844 plan, or if the earlier building was retained and extended. The 1895 plan also shows a possible cesspit or tank and well at the rear of the house.
- Double-storey brick shed and single-storey timber shed at the rear of the house. A second cesspit or tank was located to the west of the timber shed.
- Timber and galvanised iron workshop in the northeast corner, fronting George Street. This building contained a smith shop with 13 forges, an engineer's shop and a timber mill. The engine and boiler house were built on the western side of the workshop and included a substantial smokestack based on the illustration (Figure 4.51). The southern half of this building survived within the site until at least 1967³³⁹ and was presumably demolished prior to construction of Parramall.
- Carriage building workshop at the rear of the lot. Associated with this workshop were several tramways laid down through the site, including one which ran through Lot 78 to the south, exiting onto Macquarie Street.

There is a moderate to high potential for archaeological remains of the buildings in the northwest part of this lot. This would include brick or stone footings, postholes and timber beam slots from the house and sheds; remains of a possible cesspit and well; yard surfaces, artefact scatters and rubbish pits. There is a low to moderate potential for occupation deposits within the house.

There is moderate to high potential for remains of the workshops in the eastern and southern parts of this lot. This could include timber footings, postholes and surfaces of the workshop buildings; brick or stone bases for the forges and other machinery; remains of the engine house and smokestack. Within the yard space there is potential for tram tracks, brick or timber outbuildings and sheds, rubbish pits and industrial waste deposits.

The buildings were taken over by Coates' timber milling in the 1880s and there is also potential for archaeological evidence associated with this phase of occupation, including modifications to the layout and function of the workshops.

Summary

There is a moderate, possibly high, potential for archaeological remains from Phases 1–4 within Lot 15 below Parramall.

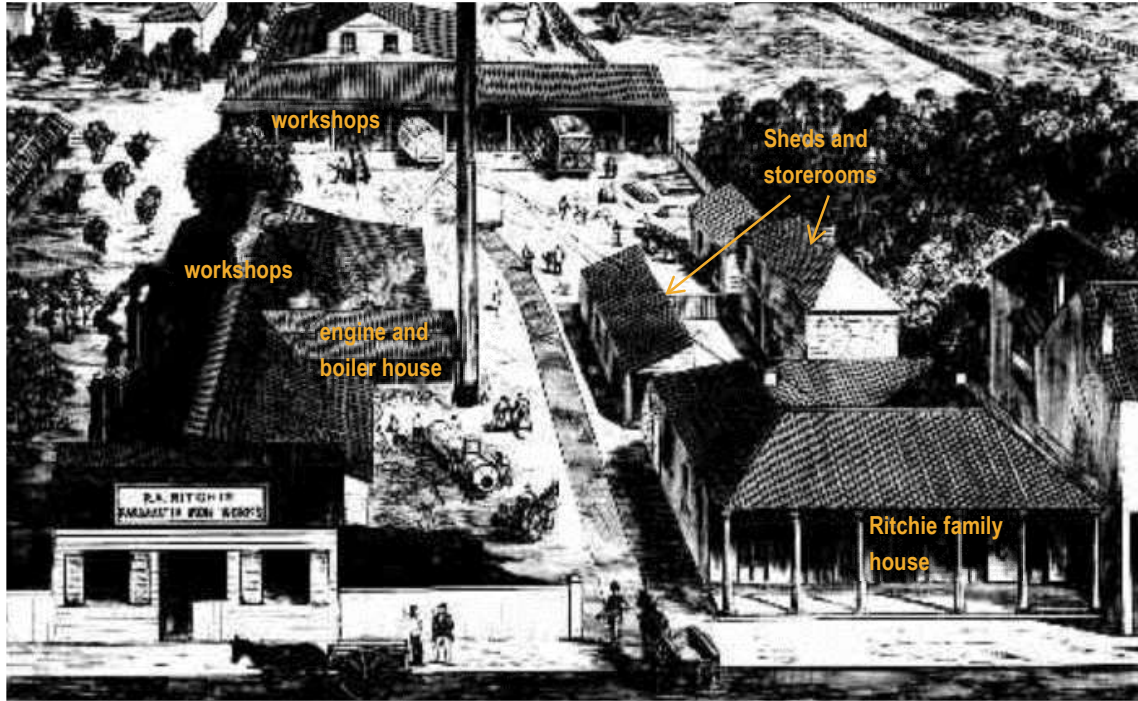


Figure 4.51 Illustration of Ritchie's ironworks, 1880, showing the primary buildings within Lot 15. (Source: <https://trove.nla.gov.au/newspaper/article/64973613?searchTerm=ritchie%20AND%20parramatta#>)



Figure 4.52 Oblique aerial photo, c1935, showing the former site of Ritchie's ironworks with the former workshop still present (yellow arrow). (Source: Frank Hurley, NLA)

4.8.10 Lot 16—Parramall (eastern half) and Horwood Place (road)

The 1792 plan records part of a convict hut within this lot. Part of the lease (No. 12) recorded on the 1804 plan is also within the lot. This has been identified as leased to Sarah Brabyn (see Section 4.8.8) at that time. However, Mary Bishop leased it from 1809. There were several people by that name in the colony and she was most likely the convict who arrived in 1792. The 1823 plan illustrates the changes in the allotment boundaries and a building that are likely associated with Bishop's lease. Additional buildings are also recorded on the 1844 plan and the lot was granted to Samuel Barber in 1846. Barber built a new house—known as Myrtle Cottage—and lived there until his death in 1875. Various tenants are associated with the property from the 1870s and it also operated as a boarding house in the 1880s. It continued as a rented property until the Barber family sold it in the 1930s. The site was redeveloped as the Parramatta Parking and Service Station, and Myrtle Cottage was altered or redeveloped as an office. Horwood Place was constructed in the 1950s and Parramall in the 1970s.

As discussed in Section 4.8.8, an aerial photograph taken during construction of Parramall shows that the area was stripped to ground level, but it is not known what impact this may have had on the survival of archaeological remains. Construction of the building will have also had localised impacts on the survival of archaeological remains with the excavation of strip and pier footings. If present, excavation for underground fuel tank(s) for the 1930s petrol station will have had a localised impact removing any archaeological remains within their footprint.

Phase 1: 1788–1820s

There is moderate potential for archaeological remains associated with the Phase 1 convict huts. This could include postholes and occupation deposits associated with the hut, outbuildings, rubbish pits and cesspits, and lot boundary markers such as postholes or ditches. The convict huts were likely redeveloped—whether altered/adapted or demolished is not clear from the historical sources. There is also moderate potential for archaeology associated with Mary Bishop, an emancipated convict, after the initial convict hut occupation. She may have built and lived in the building shown on the 1823 plan. A range of archaeological structural remains, deposits and yard features are anticipated. Section 4.7.1 provides the general types of archaeology associated with Phase 1 occupation.

Phase 2 and 3: 1820s–1880s

The timber building on the 1823 plan is likely the same as that shown on the 1844 plan, by which time it had been extended. There is also a moderate potential for remains of the 1840s Myrtle Cottage, which appears to have been demolished in the 1930s, and a small timber building, possibly a shop, demolished by 1895. The archaeology is associated with the Barber family until the 1870s and various tenants/boarders during the 1880s. Remains of these buildings could include stone or brick foundations, beam slots and postholes, and occupation deposits. There is a moderate to high potential for yard features, including yard surfaces and artefact scatters, wells, cisterns, cesspits and rubbish pits. The types of archaeology expected for these phases are outlined in Sections 4.7.2 and 4.7.3.

Phase 4: 1880s–1950s

Domestic occupation of the lot continued until the 1930s. There is moderate potential for archaeological features associated with the various tenants and uses. There is potential for structural remains associated with the service station and low potential for artefact deposits after this point.

Summary

There is moderate, possibly high, potential for archaeological remains associated with Phases 1–4.

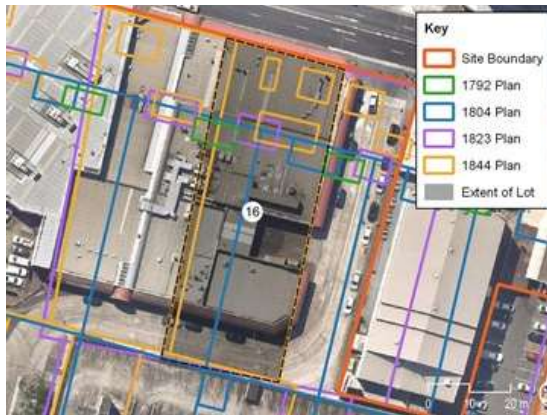


Figure 4.53 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 61B George Street. (Source: Nearmap with GML overlay)

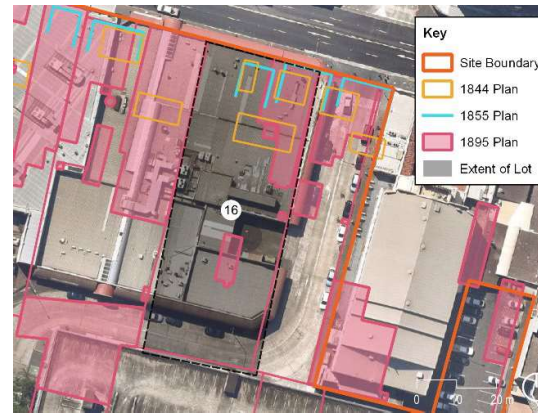


Figure 4.54 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 61B George Street. (Source: Nearmap with GML overlay)

4.8.11 Lot 17—Horwood Place (road)

Lot 17 includes part of two convict hut allotments recorded on the 1804 plan. The early lease was to John Ready, a convict who arrived in 1814. Several buildings are recorded on plans dating to the early 1830s when the lot was granted to James Foulcher. Foulcher was born in the colony and may have operated an inn, the 'Native Companion', from the site until 1833. It was then leased to Henry Whitaker, who continued the inn for a period and also established a chemist at the property. Whitaker is associated with the lot until the 1870s when it was sold to Herbert Coates, a painter and decorator. The buildings that were recorded on the 1844 plan were demolished and the site was redeveloped by Coates. It became part of the Coates and Harper timber yard in the 1890s. All buildings were demolished in the late 1920s when it became a parking area for the Parramatta Parking and Service Station. It was bought by the council in the 1950s and became Horwood Place.

Construction of Horwood Place may not have involved deep excavation and archaeological layers could survive below. Installation of services within the road would have resulted in localised impacts.

Phase 1: 1788–1820s

The 1792 plan shows a convict hut within Lot 17, although the 1804 plan places this hut farther west and partially within Lot 16. It is not known whether the building shown on the 1823 plan is the same as that shown on the 1804 plan or a new building. Archaeological remains of the convict hut and early 1820s building (if these are not the same structure) would include postholes, occupation deposits, and a brick chimney base. There may be wells, cesspits, rubbish pits and other deposits in the yard areas. The building and other archaeological evidence from Phase 1 may be associated with convicts and, later, John Ready, an emancipated convict. There is moderate potential for Phase 1 archaeology. Typical types of archaeology associated with Phase 1 activity are outlined in Section 4.7.1.

Phases 2 and 3: 1820s–1880s

Several buildings are depicted on the 1831 plan of the lot (refer to Figure 2.10). These buildings are likely Foulcher's inn and outbuildings. There is potential for structural remains of these buildings and associated deposits and features in the rear yards. The 1844 plan records an additional brick building on the street frontage. This may be the chemist business developed by Whitaker. There is potential for structural remains of this building, associated deposits and yard features such as a well, cistern,

cesspits and rubbish pits. There is moderate potential for archaeology from Phases 2 and 3. The types of archaeological remains expected for Phases 2 and 3 are described in Sections 4.7.2 and 4.7.3.

Phases 4: 1880s–1950s

The site had been redeveloped by the 1880s and potential archaeology associated with the late nineteenth and early twentieth-century use of the site could include structural remains of additions and alterations to the house, various timber yard buildings, and rubbish deposits. There is moderate potential for archaeology from this phase. A description of the typical types of remains for Phase 4 archaeology is provided in Section 4.7.4.

Summary

There is a moderate potential for archaeological remains from Phases 1–4 to survive below the road surface.

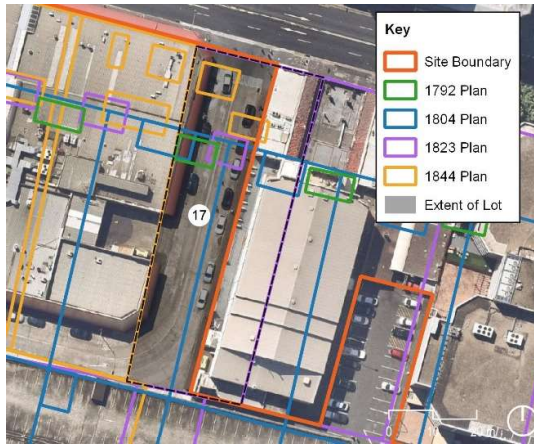


Figure 4.55 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans within Horwood Place. (Source: Nearmap with GML overlay)

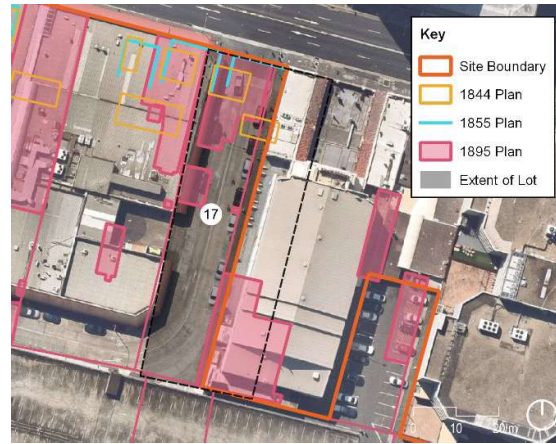


Figure 4.56 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans within Horwood Place. (Source: Nearmap with GML overlay)

4.8.12 Lot 18—Macquarie Lane

The 1792 and 1804 plans show this part of the site was located within the rear of an allotment with a convict hut built along the George Street frontage. The 1823 and 1844 plans show this area continued to be undeveloped. The 1895 plan shows part of a long building, possibly a workshop or shed, located along the eastern edge of this lot. This building had been demolished by the time of the 1943 aerial photograph, which shows it occupied by two small sheds. This part of the site has been in use as a car park since the 1950s. Excavation for services will have had localised impacts on archaeological remains.

There is a high potential for archaeological evidence associated with Phases 1–4, which could include undocumented outbuildings (brick, stone footings, postholes, timber beam slots), footings of building on the 1895 plan, yard surfaces, artefact scatters, wells, cisterns, cesspits and rubbish pits.



Figure 4.57 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at Macquarie Lane. (Source: Nearmap with GML overlay)

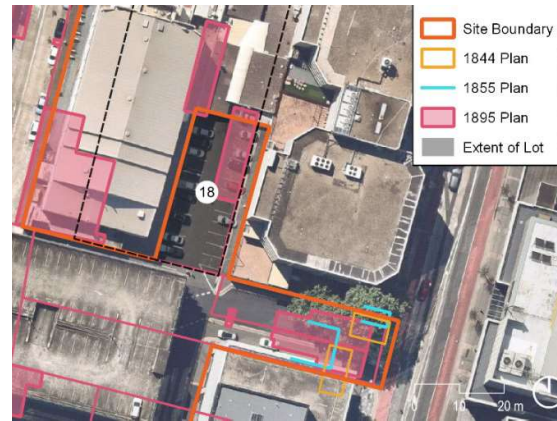


Figure 4.58 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at Macquarie Lane. (Source: Nearmap with GML overlay)

4.8.13 Lot 28—Macquarie Lane and 71 George Street (multistorey car park)

This lot was first leased to Hugh O'Donnell (or O'Donald), a free settler from Ireland who arrived in 1810. The first recorded development is on the 1823 plan, with a building fronting Smith Street. The lot was tenanted from the 1830s and there are two buildings recorded on the 1844 plan. Various tenants are associated with the property throughout the nineteenth century, including Betsy McSorley in the 1860s. It was subdivided and redeveloped in the 1880s.

Phase 1: 1788–1820s

There is no recorded development or activity on the lot until the 1820s. There is a low potential for archaeology associated with undocumented ephemeral uses (cultivation, drainage and levelling, isolated rubbish dumping) from Phase 1.

Phases 2 and 3: 1820s–1880s

There is a low potential for archaeological remains to survive in the western half of Lot 28 below the car park at 71 George Street (multistorey car park) (Figure 4.59, Figure 4.60). Construction of the car park structure is likely to have impacted on the survival of archaeological deposits through excavation for the concrete floor slab, piling and drainage trenches. There are no buildings documented within this part of the lot, and archaeological remains, if present, would include undocumented features from Phases 2 and 3 such as truncated wells, cesspits or rubbish pits.

There is high potential for remains of the Town Drain to survive below Macquarie Lane. Multiple sections of the drain have been excavated that demonstrate its survival at depth below twentieth-century developments. Excavation for service utility trenches within the road corridor may have had localised impacts on the drain.

There is a moderate potential for other archaeological evidence within the eastern part of Lot 28 below Macquarie Lane. Excavation of a trench at the eastern end of Macquarie Lane by Casey & Lowe for the Parramatta Square Trunk Sewer found remnant historical topsoil deposits at 380 millimetres below the modern road surface. Potential archaeological evidence associated with this phase could include timber or brick footings of the buildings shown on the 1823, 1844 and 1855 plans, along with evidence

of kitchen gardens or storage yard use such as garden soils, dumps and fills, along with wells, cisterns, cesspits or rubbish pits.

Phase 4: 1880s–1950s

The recent excavation by Casey & Lowe for the trunk sewer also found a sandstone wall footing and brick pad directly below the road surface that is likely to be associated with two buildings shown on the 1895 plan. There is a moderate for further remains of these buildings along with undocumented yard and garden features including cisterns, cesspits or rubbish pits.

Summary

There is a moderate to high potential for archaeological remains t below the road surface along Macquarie Lane. There is a low potential for archaeological remains below the multistorey car park.



Figure 4.59 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at Macquarie Lane and 71 George Street. (Source: Nearmap with GML overlay)

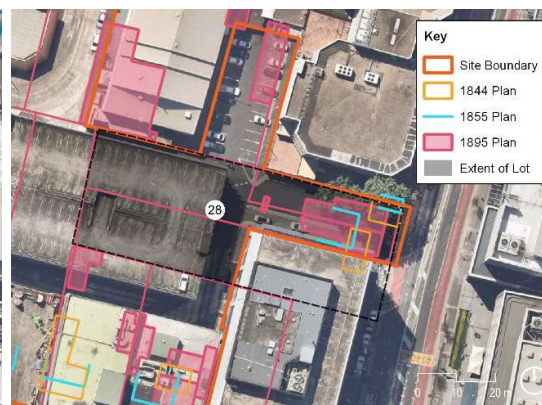


Figure 4.60 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at Macquarie Lane and 71 George Street. (Source: Nearmap with GML overlay)

4.8.14 Lot 74—74 Macquarie Street, Macquarie Lane

There is no recorded development or occupation of this lot until the 1820s when it was leased to Robert Bateman (also referred to as Batman). Robert was a child when he arrived in the colony in 1797—his father, William, was a convict who leased Lot 77 on Macquarie Street. Robert was involved in several different business ventures (supplying meat and firewood to the government, cedar and property dealing) and was also a constable. There are two buildings recorded on the 1823 plan in the lot and the western one was within the site. The land titles and shareholding associated with the lot in the 1830s and 1840s was complicated. Others associated with the lot were Elizabeth Lacy and William Shaw, a storekeeper. It is not clear if any of these people lived or operated a business from the lot. Hugh Taylor and James Byrnes owned the lot in the 1850s and 1860s respectively. A building was recorded on the 1855 plan in roughly the same location as the 1844 plan. However, this may have been a redevelopment. It changed hands to William Fullager, who leased it to various tenants in the 1870s and 1880s. Several additions were recorded on the 1895 plan and these were part of a boarding house which operated until the 1920s when it was leased to Coastal Farmers Co-op. The site was redeveloped in the 1970s.

Phase 1: 1788–1820s

The 1792 and 1804 plans indicate that the construction of convict huts did not extend this far east along Macquarie Street and there is low potential for archaeology associated with undocumented ephemeral uses (cultivation, drainage and levelling, isolated rubbish dumping) from Phase 1.

Phases 2 to 4: 1820s–1950s

The archaeological excavation by Higginbotham on the eastern half of Lot 74 showed the preservation of archaeological remains below 0.5–1 metres of fill (Figure 4.63), and a similar level of preservation may be present within this part of the site. Excavation for footings of the 1950s and 1970s buildings will have had an impact on archaeological survival, although remains are expected to survive between the footing impacts.

Archaeological remains within this area could include brick or stone footings of the buildings shown on the 1823, 1833, 1844 and possibly 1855 plans, and brick or stone footings of the house and three outbuildings shown on the 1894 plan. There is also potential for undocumented features including outbuildings, yard deposits, artefact scatters, wells, cisterns, cesspits and rubbish pits.

There is a moderate potential for remains of the Town Drain to survive below the existing buildings at 74 Macquarie Street. This section of the drain is expected to be less intact and may have been impacted by deeper footings of the existing buildings. There is a high potential for remains of the drain below Macquarie Place. This section of the drain was uncovered by Casey & Lowe during recent archaeological investigation for the trunk sewer and is confirmed to be intact.³⁴⁰

There is low potential for archaeological remains within the northern part of Lot 74 below the car park. Construction of the car park structure is likely to have impacted on the survival of archaeological deposits through excavation for the concrete floor slab, piling and drainage trenches. Archaeological remains in this area could include truncated remains of wells, cisterns, cesspits and deep rubbish pits.

Summary

There is a moderate potential for archaeological remains associated with Phases 2–4 within the southern part of Lot 74 below 74 Macquarie Street and Macquarie Lane. There is a moderate potential for the Town Drain below the current building fronting Macquarie Street and high potential for it below Macquarie Place. There is high potential for the Town Drain below Macquarie Lane.

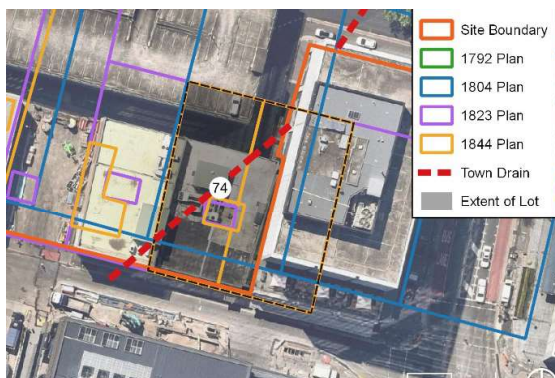


Figure 4.61 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 74 Macquarie Street. (Source: Nearmap with GML overlay)

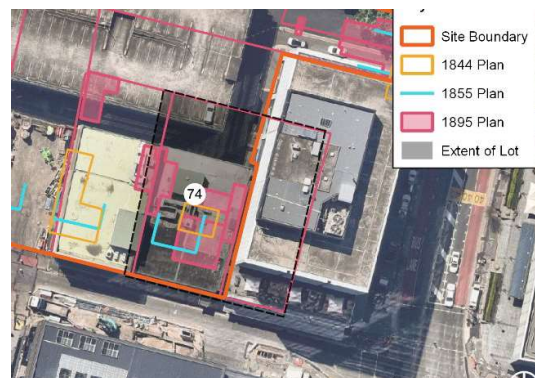


Figure 4.62 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 74 Macquarie Street. (Source: Nearmap with GML overlay)



Figure 4.63 Remains of a timber building (postholes outlined in yellow) shown on the 1823 plan within the eastern half of Lot 74 excavated by Higginbotham at 76 Macquarie Street, facing southwest. (Source: Higginbotham 2004)

4.8.15 Lot 75—72 Macquarie Street

There is no recorded development or occupation of the lot until the 1820s when it was leased to John Thorn, who was born in Parramatta. Thorn was the chief constable in Parramatta, a juror and bailiff. A building was recorded on the 1823 plan, though it is not clear whether Thorn lived at this property as he held several other leases in the town. The house was extended and Mr Jamieson was recorded as the resident in the 1840s. A stable and coach house was also referenced within the lot. There is little information on the ownership and occupation of the lot until the late nineteenth century. The house was demolished by 1895 and the lot advertised for sale. It was sold to John Taylor in 1904 and then in 1913 to Septimus George Rawlinson, who redeveloped it and built a house called 'Hollingarthe'. This lot was redeveloped in the 1960s.

Phase 1: 1788–1820s

The 1792 and 1804 plans indicate that the construction of convict huts did not extend this far east along Macquarie Street and there is low potential for archaeology associated with undocumented ephemeral uses (cultivation, drainage and levelling, isolated rubbish dumping) from Phase 1.

Phases 2 to 4: 1820s–1950s

There is a moderate potential for archaeological remains associated with Phases 2–4 below the existing building at 72 Macquarie Street and Macquarie Lane (Figure 4.64, Figure 4.65). Excavation for footings of the existing three-storey building are likely to have resulted in localised impacts and archaeology may survive between them.

Archaeological remains within this part of the site would include brick or timber footings of a building shown on the 1823 plan, and brick or stone footings of an L-shaped building on the 1844 plan. It is not clear if the 1823 building is the same as that shown on the 1844 plan. Remains of a weatherboard coach house built against the eastern lot boundary by 1894 would include postholes and timber beam

slots. There is potential for footings and features associated with the early twentieth-century house ‘Hollingarthe’. There is also potential for undocumented outbuildings, wells, cisterns, cesspits and rubbish pits. The typical types or archaeological remains associated with Phases 2–4 are provided in Sections 4.7.2 to 4.7.4.

There is also a moderate potential for remains of the Town Drain to survive below the existing building in the southeast corner of the site. This section of the drain is expected to be less intact and may have been impacted by deeper footings of the existing buildings.

Summary

There is moderate potential for archaeological remains from Phases 2–4 within this lot.

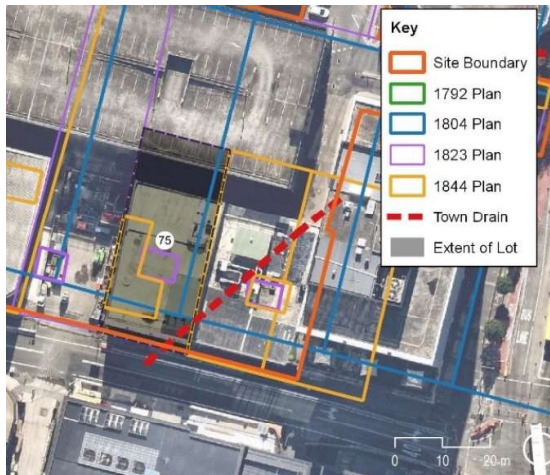


Figure 4.64 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 72 Macquarie Street. (Source: Nearmap with GML overlay)



Figure 4.65 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 72 Macquarie Street. (Source: Nearmap with GML overlay)

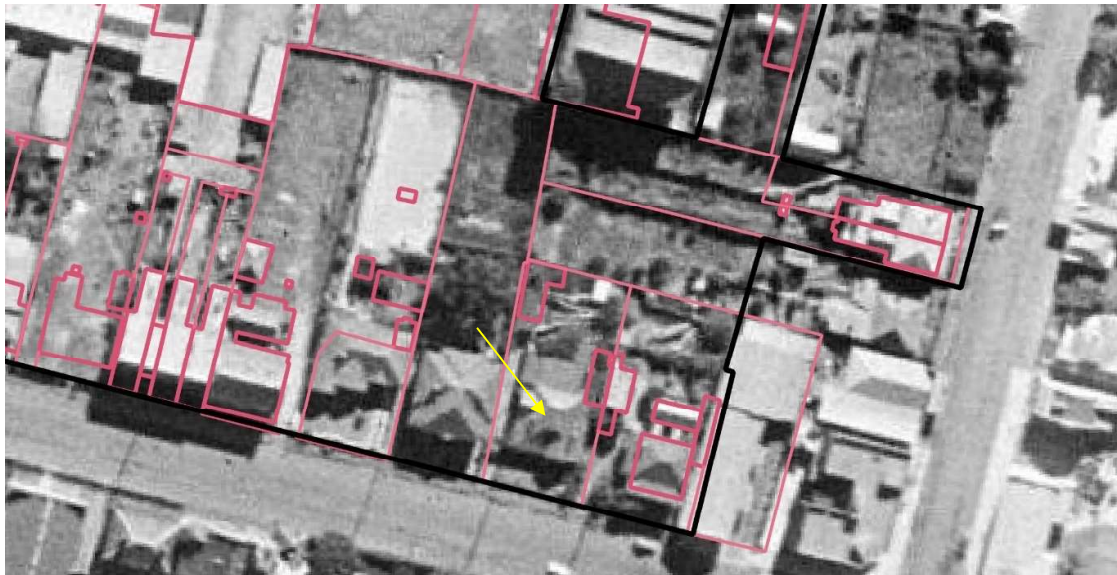


Figure 4.66 Overlay showing buildings recorded on the 1895 plan on the 1948 aerial. The house ‘Hollingarthe’ (marked with an arrow) was built at 72 Macquarie Street in the early twentieth century. (Source: Nearmap with GML overlay)

4.8.16 Lot 76—70 Macquarie Street

There is no recorded development or occupation of the lot until the 1820s when it was leased to William Scott, a convict who arrived in 1805. He was identified as a labourer on the 1828 census. There was a small building recorded on the 1823 plan and Scott and his family are likely to have lived here during the 1830s and 1840s. The house was still there on the 1855 plan and the lot was sold to James Houison in 1858. The house was demolished by the 1870s–1880s and it remained undeveloped until the early twentieth century.

The recent excavation by Casey & Lowe for the Parramatta Square Trunk Sewer included two trenches within Lot 76. In Macquarie Lane a sandstock brick scatter was found within historical topsoil at 900 millimetres below the modern surface. A trench in the southern part of 70 Macquarie Street found a modified historical topsoil but did not identify any structural remains or cut features.

Phase 1: 1788–1820s

The 1792 and 1804 plans indicate that the construction of convict huts did not extend this far east along Macquarie Street and there is a low potential for archaeology associated with undocumented ephemeral uses (cultivation, drainage and levelling, isolated rubbish dumping) from Phase 1.

Phase 2: 1820s–1860s

There is a moderate potential for archaeological remains within the southern half of Lot 76 below 70 Macquarie Street and Macquarie Lane (Figure 4.67, Figure 4.68). While excavation for footings of the early to mid-twentieth century building would have had localised impacts on archaeological deposits, archaeological remains are expected to survive between these impacts. Potential archaeological remains within this lot could include timber, brick or stone footings of the building shown on the 1823 plan along with undocumented outbuildings and features, a well or cistern, cesspits and rubbish pits, and other artefact deposits. Any archaeological remains from the early part of Phase 2 are likely associated with Scott and his family.

Phases 3 and 4: 1860s–1950s

There is also potential for undocumented structures or evidence for use of the land during the 1860s–1890s when the land was vacant. An illustration of Houison’s land in 1880 shows this part of the site covered in dense vegetation; the site may have been cultivated as a garden in the mid–late nineteenth century (Figure 4.69). Archaeological evidence of this could include garden beds, paths, plant boles and topsoil deposits, and artefact spreads or dumps.

There is a low potential for archaeological remains within the northern half of Lot 76. There are no documented structures within this part of the lot, and construction of the car park is likely to have disturbed or completely removed any archaeological deposits within this area. There is a low potential for deep cut features such as wells, cisterns or cesspits in this part of the site.

Summary

There is a moderate potential for archaeological remains from Phases 2–4 in the southern part of the lot. There is a low potential in the northern part of the lot below the multilevel car park.



Figure 4.67 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 70 Macquarie Street. (Source: Nearmap with GML overlay)



Figure 4.68 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 70 Macquarie Street. (Source: Nearmap with GML overlay)

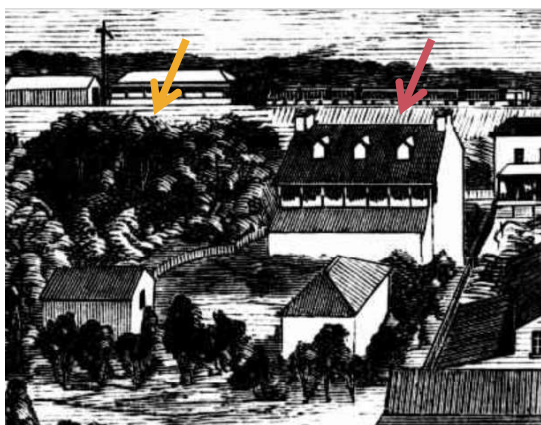


Figure 4.69 1880 illustration showing the rear of yards of Kia Ora (red arrow), including part of Lot 76 that is covered in dense vegetation (yellow arrow). (Source: *Illustrated News*)

4.8.17 Lot 77—62–64 and 68 Macquarie Street

Development along this part of Macquarie Street is not illustrated on the 1792 plan. The lot was established by 1804 and is associated with William Bateman (also known as William Batman) who was a convict transported in 1797. Historical references indicate he and his family were living in a cottage on the lot (64 Macquarie Street) in 1801. This may be the structure illustrated as set back from the street frontage on the 1804 plan. The 1823 plan records a larger building in a different location, indicating a redevelopment had occurred by this time. Bateman died in the 1830s and the lot was granted to James Houison, who built the house Kia Ora, with a detached kitchen and stable, in c1842. Houison was a prominent local builder, architect and public figure in the mid–late nineteenth century. The family lived there until 1865 and after this the property was rented to various tenants. The main house Kia Ora still exists in this lot today. The old Bateman cottage reportedly survived into the twentieth century, as it was included in the sale notice in the 1930s. At the time, the site was recognised as the birthplace of John Batman (William’s son)—a prominent historical figure associated with the foundation of Melbourne.

The heritage listed building Kia Ora is being retained and works are not proposed. The archaeological potential of this part of the site has not been assessed.

Previous impacts to potential archaeology vary between the south and north of the lot. The multilevel car park goes across the northern half of this historic lot. Construction of the car park structure is likely to have impacted on the survival of archaeological deposits through excavation for the concrete floor slab, piling, stair/lift pits and services. There is a low potential for archaeology below the car park footprint. The portion of Lot 77 behind Kia Ora occupied by the multistorey building at 58–60 Macquarie Street has low to nil archaeological potential. It is understood that this building has at least one basement level, which will have removed all archaeological deposits within its footprint. There is a low potential for the base of a truncated well or cistern to survive below the basement level.

Phase 1: 1788–1820s

Two structures from this phase are recorded on historical plans. The building on the 1804 and 1823 plans are likely to have been lightweight timber-framed buildings. Archaeology associated with this type of construction is not expected to survive impact from the 1970s car park construction. There is a low potential for evidence of the 1823 building where it is recorded as below the present-day Macquarie Lane. There is also a low potential for other truncated archaeological features such as wells, cesspits and rubbish pits below the car park and road.

The location of the convict hut shown on the 1804 plan at the rear of the lot rather than fronting Macquarie Street may indicate the presence of a creek or drainage line within the southern part of this lot. This was seen in Parramatta Park Gardens, where a convict hut was found at the rear of the allotment, farther south than the location shown on the 1792 plan, to avoid a creek line. Remains of a structure recorded on the 1804 plan (but not the 1792 plan) in a similar location at the rear of a convict hut allotment were found at Parramatta RSL. This too appeared to have been situated away from a creek line and swampy area. The southeast part of the lot has low to moderate potential for archaeological remains associated with the natural landscape, and Bateman's responses to it, during Phase 1. Archaeological remains could include drainage channels, backfilled water dams, levelling fills, rubbish deposits and other evidence of improvement.

Phases 2 to 4: 1820s–1950s

The southeast part of Lot 77, at 68 Macquarie Street, has moderate potential for archaeological remains. Archaeological remains could include the timber building (postholes, timber beam slots) shown on the 1844 plan against the eastern lot boundary, and brick footings of two outbuildings shown on the 1895 plan that are part of the later Kia Ora property. Below the car park and road there is low potential for truncated remains of a cistern and cesspits shown on the 1895 plan, along with earlier wells, cesspits and deep rubbish pits below the car park floor slab. The types of archaeology associated with Phases 2–4 are described in Section 4.7.2 to 4.7.4. The archaeology from Phases 2 and 3 is associated with James Houison and family. They were prominent local figures in the mid to late nineteenth century.

Summary

The northern half of this lot has low potential for truncated remains of deeper cut features such as wells, cesspits and cisterns. The southwest part of the lot is unlikely to have archaeology as there is a modern office building with a basement. Kia Ora will be retained.

The remaining L-shape part of the lot has low potential for Phase 1 archaeology and moderate potential for archaeology from Phases 2–4, including evidence of Houison’s occupation of the site. It is unlikely that intact archaeological deposits that can be securely associated with William Bateman and family survive.



Figure 4.70 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 62–64 and 68 Macquarie Street. (Source: Nearmap with GML overlay)

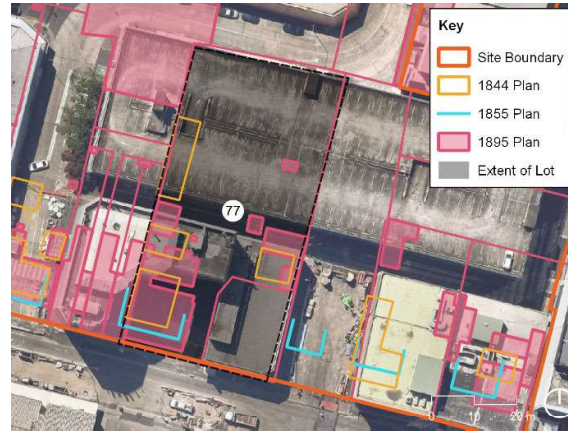


Figure 4.71 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 62–64 and 68 Macquarie Street. (Source: Nearmap with GML overlay)

4.8.18 Lot 78—58–60 Macquarie Street

There was no recorded development on this lot until the late nineteenth century. It was leased to Francis Oakes, a free settler, in 1823. It was later granted to William Faithfull, also a free settler, in the 1840s. Robert Adam Ritchie eventually purchased the vacant lot in 1880 and consolidated it with Lot 15 to expand the ironworks and provide dual access from George and Macquarie Streets. The ironworks had closed by the 1890s. Several buildings were recorded on the 1895 plan—the northern half of the lot contained a large workshop and the southern half had been subdivided and redeveloped with terraces.

This lot has been subject to extensive previous impact from construction of the car park in the 1970s and a modern office building with a basement level. There is no potential for archaeological remains within the southern half of Lot 78 below 58–60 Macquarie Street. This seven-storey building has at least one basement level, which will have removed any archaeological remains within its footprint.

Phases 1 to 3: 1788–1880s

The 1792 and 1804 plans do not show a convict hut within this lot and it is unlikely there will be archaeological remains from Phase 1. There is also no recorded development during Phase 2 and 3. There is a low potential for undocumented and ephemeral use of the land, with archaeological remains such as evidence of landscaping, improvement, drainage and rubbish dumping.

Phases 4: 1880s–1950s

There is a moderate potential for archaeological remains below Macquarie Place associated with Phase 4 development. Archaeological remains could include undocumented outbuildings, yard surfaces, remains of the tramway associated with Ritchie’s ironworks (Figure 4.74), as well as other undocumented features such as cisterns, rubbish pits and lightweight shed or workshop structures.

There is low potential for archaeological remains below the car park. Construction of the car park structure is likely to have impacted on the survival of archaeological deposits through excavation for the concrete floor slab, piling and drainage trenches. If present, archaeological remains could include truncated wells, cisterns, cesspits or deep rubbish pits.

Summary

There is generally low or nil potential for archaeology within this lot. The lot has been subject to extensive previous impacts. There is a small area—Macquarie Lane—where there is a moderate potential for Phase 4 archaeology associated with Ritchie’s ironworks and the 1880s subdivisions.

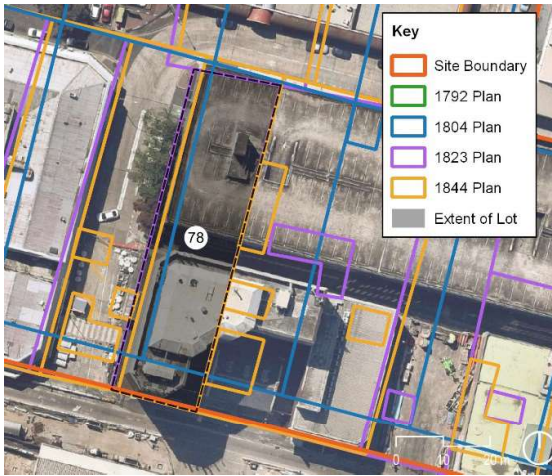


Figure 4.72 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 58–60 Macquarie Street. (Source: Nearmap with GML overlay)



Figure 4.73 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 58–60 Macquarie Street. (Source: Nearmap with GML overlay)

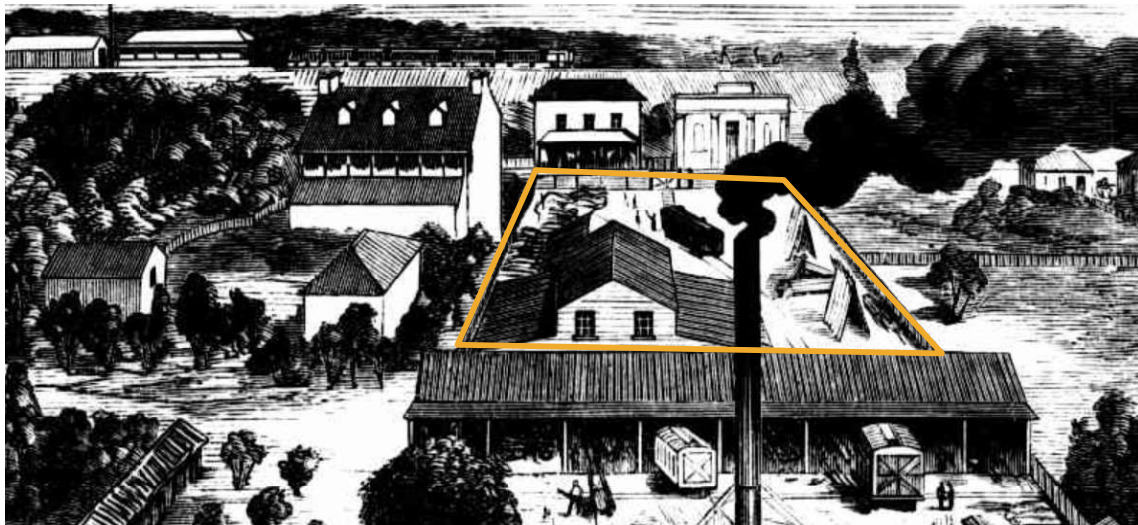


Figure 4.74 Illustration of Ritchie’s ironworks, 1880, showing the two-storey timber shed and tramway that provided access to Macquarie Street, and Lot 78 (outlined in yellow). (Source: *Illustrated News*)

4.8.19 Lot 79—Horwood Place (road)

There was no development within this lot recorded on the 1792 or 1804 plans. The lease was granted to Charles Wood in 1823, though no structures were depicted on the map of the same date. By the 1830s the lot may have been associated with James Pike and there are references in 1834 to a brick house, detached kitchen, coach house and stable. The lease was granted to Thomas Shadforth, a free settler, in 1841. Shadforth was in the military and then become involved in various businesses. The house and other buildings are illustrated on the 1844 plan, and these were likely occupied by Shadforth's daughter Frances Esther Stephen. During the 1860s and 1870s there were multiple mortgages on the property and it was sold to John Taylor (a butcher) in the 1870s. It changed hands several times until John Parsons purchased it in 1875 and lived there until the late 1880s. It continued to be leased after this, first to John Paul, a fuel merchant, then Thomas Jones, a timber merchant. The main house was demolished by the early twentieth century. It transferred to Cumberland Newspapers Ltd and then to the council in 1954 when Horwood Place was constructed.

Phases 1: 1788–1820s

The 1792 and 1804 plans do not show development within this lot and there is a low potential for archaeological remains associated with ephemeral uses (cultivation, drainage and levelling, isolated rubbish dumping) from Phase 1 across the entire lot.

Phases 2 to 4: 1820s–1950s

The lot appears to have been developed and occupied from the early 1830s, initially by James Pike and then the Shadforth family. Archaeological remains could include brick or stone footings of the house and kitchen, and associated artefact deposits and other features, and postholes or timber beam slots of the timber building shown on the 1844 plan, presumed to be the coach house and stables. The two brick or stone buildings (presumably the house and kitchen) remained on the site until the 1930s and may preserve evidence for renovations or extensions during the later nineteenth and early twentieth centuries. There is also potential for a cesspit shown on the 1895 plan against the eastern lot boundary and other undocumented structures, including wells, cisterns, cesspits and rubbish pits, associated with the occupation of the site from the c1840s to 1930s. There is a moderate potential for archaeology. The typical types of archaeology associated with domestic occupation during Phases 2 to 4 are outlined in Section 4.7.2 to 4.7.4.

Summary

There is a moderate potential for archaeological remains to be preserved below Horwood Place (road) within Lot 79. Construction of the road (grading or levelling) and trenching for services and drains will have resulted in localised impacts on the archaeological remains.

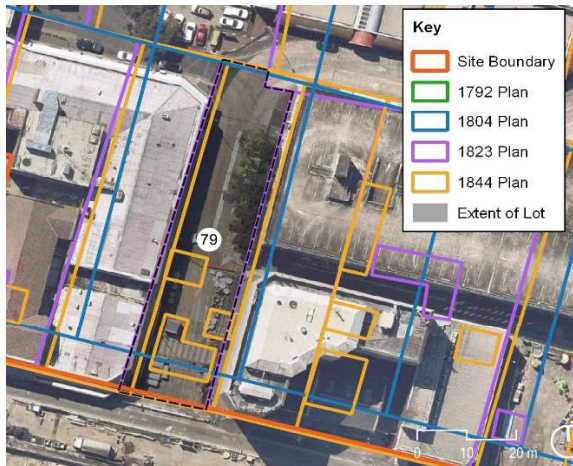


Figure 4.75 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at Horwood Place. (Source: Nearmap with GML overlay)

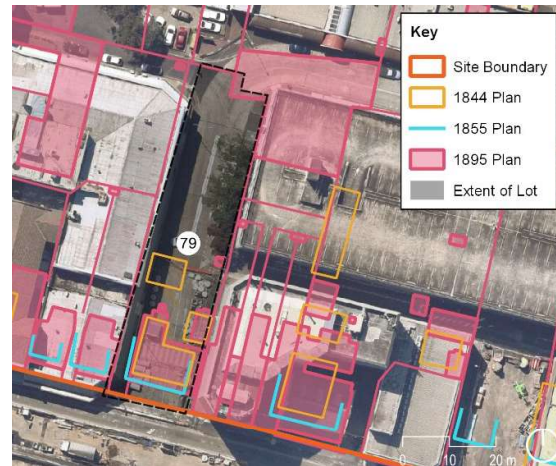


Figure 4.76 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at Horwood Place. (Source: Nearmap with GML overlay)

4.8.20 Lot 80—222–230 Church Street, 50 Macquarie Street section

The 1792 and 1804 plans do not record any development on this lot. It was leased to William Davis in 1809 and then to John Walker, a wheelwright and miller born in Parramatta. Walker was also the inspector of slaughterhouses in Parramatta during the 1830s. There are no structures on the 1823 plan and it appears that Walker did not live at this property. The land transferred to his daughter Mary Elizabeth Robertson in the 1840s. It was subdivided and sold to William Goodin in the 1860s. The sale notice for the western lot describes it being beside a stone cottage belonging to Robertson. The eastern lot was also sold, first to James Byrnes and then to Goodin. By the 1880s two brick cottages with kitchens had been constructed. Various businesses were also associated with the properties in the 1880s and 1890s—a printing works, bank and a coach builder. The printing works was the Argus Press and the coach builder was Frederick Sweeny. They remain associated with the properties in the early twentieth century and then Coles in the mid-twentieth century.

Phase 1: 1788–1820s

The 1792 and 1804 plans do not show development within this lot and there is a low potential for archaeological remains associated with ephemeral uses (cultivation, drainage and levelling, isolated rubbish dumping) from Phase 1 across the entire lot.

Phases 2 to 4: 1820s–1950s

The 1823 and 1844 map did not record any development in the lot. The 1855 plan recorded two buildings fronting Macquarie Street. Two buildings are also recorded on the 1895 plan.

The southern half of the lot has a moderate potential for remains of the two buildings fronting Macquarie Street on the 1855 and 1895 plans. While these buildings appear to occupy the same footprint, the eastern building was described in 1864 as built of stone, while the two buildings on site in 1885 were described as brick, suggesting that the earlier buildings were replaced. Archaeological remains associated with both properties would include brick or stone footings of both the c1850 and c1880 buildings, occupation (underfloor) deposits, undocumented outbuildings and yard features, wells or cisterns, and two brick cesspits shown on the 1895 plan. The site was also used by Sweeny

from 1899 as part of his coach building business (also occupying Lot 81) and there is potential for undocumented buildings and other activities associated with this business.

The northern half of the site also has a moderate potential for a square structure, presumably a brick cesspit, shown on the 1895 plan, and the footings of two late nineteenth or early twentieth-century warehouses associated with the printworks that operated on Lot 81. There may also be archaeological remains of undocumented features, such as rubbish dumps and drains.

The typical types of archaeology associated with Phases 2 to 4 are outlined in Sections 4.7.2 to 4.7.4.

Summary

There is a moderate potential for archaeological remains associated with Phases 2–4 within Lot 80. A small portion of Lot 80 contains a basement, and this part of the site has low potential for archaeological remains. The 1792 and 1804 plans do not show a convict hut within this lot and there is a low potential for archaeological remains from Phase 1 across the entire lot.

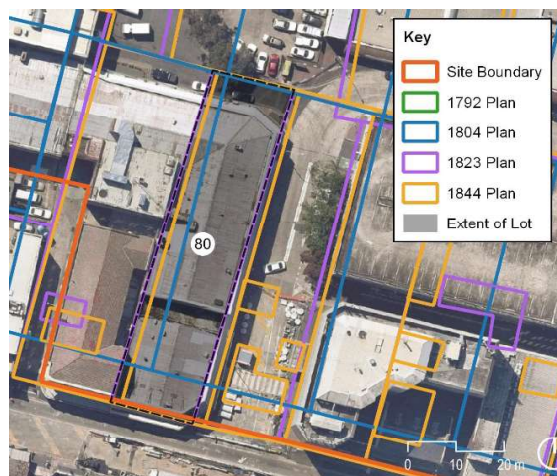


Figure 4.77 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 50 Macquarie Street / 222–230 Church Street, Macquarie Street section. (Source: Nearmap with GML overlay)

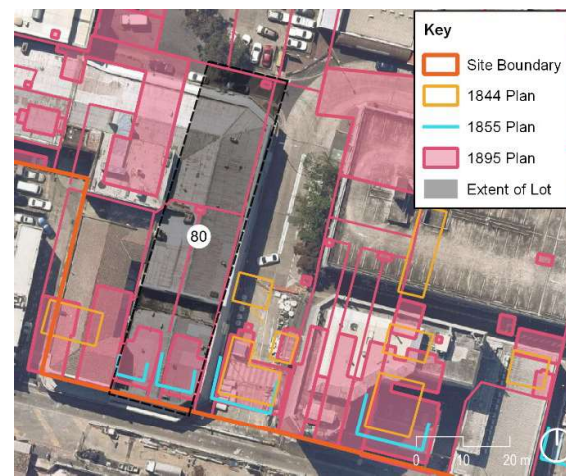


Figure 4.78 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 50 Macquarie Street / 222–230 Church Street, Macquarie Street section. (Source: Nearmap with GML overlay)

4.8.21 Lot 81—48 Macquarie Street

The 1792 and 1804 plans did not record any development on this lot. In 1809 it was leased to R. Tomilson, a convict transported in 1801. A house was noted as being on the lot in 1811. In 1823 the lease was granted to John Bradley, an emancipated convict who had been transported from Ireland in 1813. Bradley ran a school in Parramatta. The 1823 plan recorded a building in the lot and an 1826 record noted it was a weatherboard construction. The grant transferred to John Thorn and then Matilda Thorn in the 1840s. The 1844 plan recorded a timber building in roughly the same location as the 1823 plan. The property was tenanted by the 1860s, as Matilda Thorn was recorded as living in Goulburn at this time. William Goodin purchased the property in 1860 and it was subdivided and redeveloped, with two buildings fronting the street. These are both recorded as being weatherboard. Cyrus Fuller bought the lot in 1881 and established the Cumberland Mercury Printing Works at the back of the lot. Frederick Sweeny operated a coach building business from the front of the lot. The site

was occupied by Coles from the mid-twentieth century. The late nineteenth to mid-twentieth century development of the lot is connected with Lot 80 and Lot 15a on Church Street.

Phases 1 and 2: 1788–1860s

The 1792 and 1804 plans did not show development within this lot. There is a low potential for archaeological remains associated with ephemeral uses of this site prior to development—such as cultivation, rubbish dumping, drainage and improvement. There was a reference to a house on the property in 1811 and the 1823 plan recorded a building set back from the street frontage. This building appears to have survived into the 1840s. There is a moderate potential for archaeological remains of this structure and associated deposits, and undocumented yard features and deposits. There may be evidence of original structures, later repairs and additions, and sealed artefact deposits that can be associated with the various uses and occupiers up to the mid-nineteenth century. However, this also may not be possible given the later developments and formation processes (shallower deposits) in this part of the site.

The typical types of archaeology for Phases 1 and 2 are provided in Sections 4.7.1 and 4.7.2.

Phases 3 and 4: 1860s–1950s

The lot was redeveloped in Phase 3 and there is a moderate potential for archaeological remains of two large timber buildings and a small square building (presumably a cesspit) shown on the 1895 plan that are associated with Sweeny's coach building business that occupied this site. Archaeological evidence associated with Sweeny's business could also include yard surfaces, undocumented outbuildings or sheds, artefact scatters and rubbish pits.

There is a moderate, possibly high, potential for archaeological remains within the northern half of Lot 81 associated with the Phase 4 printworks building constructed in 1884–85. A 1909 photograph of the printworks building shows it was a substantial structure with a large tower and the footings of this building are likely to survive below the existing Greenway Plaza. There is a moderate potential for other archaeological remains, including brick or timber footings of later outbuildings and sheds, yard surfaces, artefact scatters and rubbish pits.

The printworks building was likely supported by substantial foundations and may have featured a sunken floor or basement level to support the printing presses, as was found during the excavation of the Cumberland Press site at 142–154 Macquarie Street.³⁴¹ It is likely to have removed any earlier archaeological remains within its footprint and there is a low potential for archaeological remains from Phases 2 and 3 to survive within the northern half of Lot 81 below the printworks building.

Summary

There is a moderate potential for archaeology from Phases 1–4 in the southern part of the lot fronting Macquarie Street. In the northern half of the lot there is low potential for Phases 1–3 and moderate (or high) potential for archaeology from Phase 4.

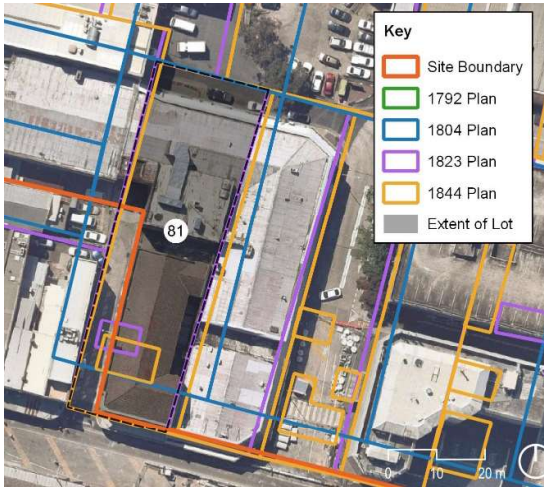


Figure 4.79 Overlay showing buildings recorded on the 1792, 1804, 1823 and 1844 plans at 48 Macquarie Street. (Source: Nearmap with GML overlay)



Figure 4.80 Overlay showing buildings recorded on the 1844, 1855 and 1895 plans at 48 Macquarie Street. (Source: Nearmap with GML overlay)

4.8.22 Historical archaeological potential mapping

The site has potential for multiple phases of historical archaeology dating from the late eighteenth century. The archaeological potential across the site and within each allotment varies—a summary of this potential by lot is provided in Section 4.9.10 below. This has been synthesised and collated in one map to illustrate the archaeological potential across the site as a whole (Figure 4.81). The potential grading relates to archaeological potential for one or all phases of occupation in the late eighteenth, nineteenth and early twentieth centuries. The grading definitions are provided in Section 4.8.1.

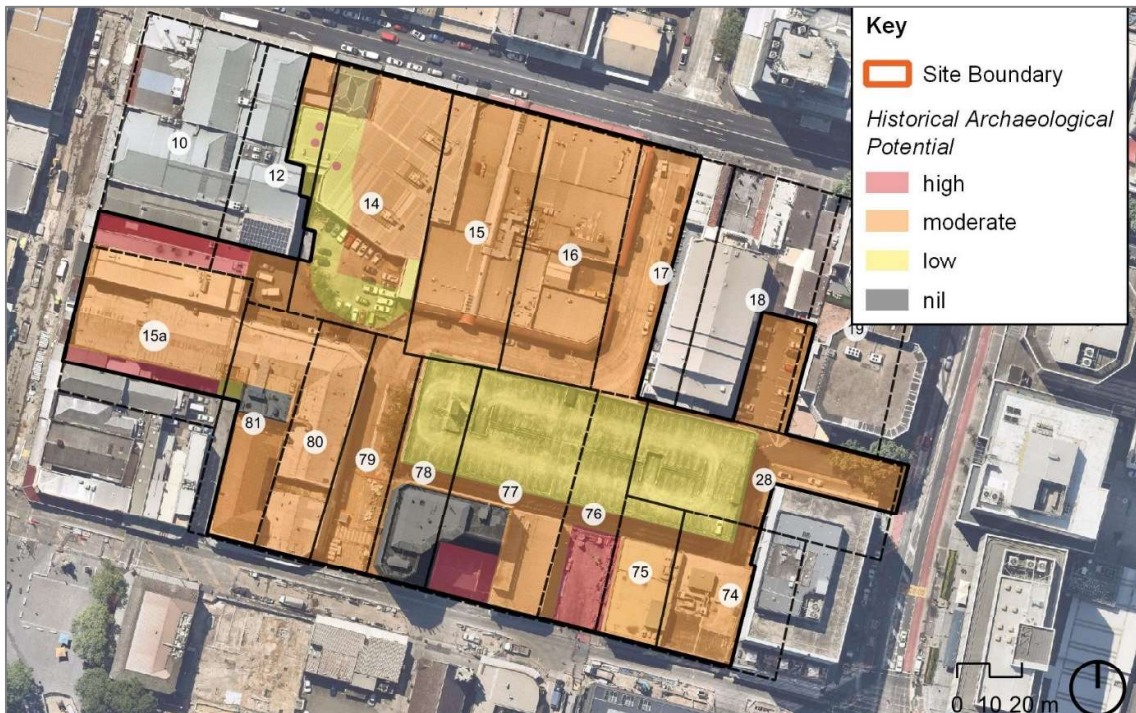


Figure 4.81 Historical archaeological potential mapping for the site. (Source: Nearmap with GML overlay)

4.9 Significance assessment

The site has potential for extensive historical archaeological remains associated with multiple phases of development and occupation from the 1790s through to the early twentieth century. Previous studies have assessed this potential archaeological resource to be a combination of locally and state significant relics (refer to Section 4.2). The following significance assessment has used the NSW Heritage Criteria framework as the potential archaeology of the site is complex and warrants consideration against each criterion separately.

4.9.1 Levels of significance

Archaeological significance levels are defined as follows:

- **Local**—in relation to a place, building, work, relic, movable object or precinct, means significance to the local area in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.
- **State**—in relation to a place, building, work, relic, movable object or precinct, means significance to the state in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.

4.9.2 Criterion A—Historic significance

An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)

As the nation's second colonial settlement, Parramatta's archaeological resource is of historical significance in evidencing the establishment and development of the colony in the late eighteenth and early nineteenth centuries. The archaeology would also demonstrate the transition from a penal to a free colony. The archaeology has the ability to demonstrate the changing patterns of Parramatta's development, buildings and occupation—residential, commercial and industrial—throughout the nineteenth century and into the early twentieth century.

The site is located within the colonial government's formally planned historic core of Parramatta and is associated with the original street alignments of George Street, Church Street and Macquarie Street. Archaeological remains of convict huts, and evidence of their adaptation by emancipists and free settlers, demonstrate a key phase in the historic evolution of the township and is of state significance under this criterion.

The properties along Church Street and George Street are part of the main retail and commercial thoroughfares in Parramatta. Archaeological evidence of these properties and their occupants would be historically significant in demonstrating the development of business enterprise over the course of the nineteenth and early twentieth centuries. The archaeology of Ritchie's ironworks would demonstrate the industrial history of Parramatta and its evolution from small-scale manufacturing to larger-scale enterprises in the second half of the nineteenth century. These aspects of the archaeology would be significant at a local level.

The Town Drain and its alignment are historically significant as evidence of urban planning and the development of municipal infrastructure in the early to mid-nineteenth century.

The archaeology of the site would also demonstrate the economic history of the colony and state, and how it affected Parramatta, through the nineteenth and early twentieth centuries. Significant economic

depressions at the end of transportation in the 1840s and in the 1890s influenced urban growth and the prosperity of Parramatta. During ‘boom’ times after the gold rush, commercial activity increased and manufacturing and industry expanded, as reflected in the lots along Church, George and Macquarie Streets, and in Ritchie’s ironworks.

The growth in and diversification of Parramatta’s urban population in the latter half of the nineteenth century is likely to be reflected in the archaeological record with evidence of intensification of development and density of artefact deposits from the 1860s to the end of the century. The archaeology is also likely to reflect the economic conditions in the 1890s as many businesses closed, the urban population became more transient, and redevelopment slowed during World War I and the Great Depression.

4.9.3 Criterion B—Associative significance

An item has a strong or special association with the life or works of a person, or group of persons, or importance in NSW’s cultural or natural history (or the cultural or natural history of the local area)

The archaeology of the site is associated with significant groups of people and individuals at state level—the convicts, and the early colonial governors and officials, who influenced life and shaped the fabric of the colony and the settlement of Parramatta. The convicts associated with the site and its archaeology are not known on an individual level. However, many would have passed through the six or so huts within the site in the 1790s. The archaeology of the convict huts on Church Street is likely to be associated with unmarried female convicts (or convicts with families). Female convicts were fundamental to the success of the colony and are often underrepresented in the historical record. The archaeology associated with female convicts during this early phase of the penal system is significant at a state level. The archaeology is also associated with Governor Arthur Phillip and Augustus Alt, who designed and implemented (to varying degrees of success) the original layout of and vision for Parramatta.

The archaeology is also associated with several emancipists, free settlers, and those first generations who were born in the colony, who were granted leases within the site in the 1800s to 1820s. These men and women contributed, through their labour and entrepreneurial endeavours, to the establishment, success and transformation of the gaol town and colony in those early years. Emancipists associated with the site, and potentially represented in the archaeology, include Joseph Grose, Charles Whalan, William Scott, John Bradley, R. Tomilson, Mary Bishop and Abigail Kelly. Free settlers and those born in the colony associated with the site whose names we know include Hugh O’Donnell, William and Robert Bateman, Mary Walker, James Whalan and Robert Sherwin. Two are longer term residents of Macquarie Street—William Bateman and family (Lot 77), and William Scott and family (Lot 76)—who initially develop the vacant allotments (not previously occupied by convicts) and live there until the 1830s.

The potential archaeological remains are associated with several individuals and organisations that contributed to the life, development and growth of Parramatta during the nineteenth century. This includes local businesspeople such as John Tingcombe, Francis Watkins, and Hugh Taylor, who was also mayor of Parramatta; chemist, Henry Whitaker; and coach builders James Urquhart and Frederick Sweeny. Ritchie’s ironworks, and later Coates and Harper, were successful local businesses that operated out of the site and there is potential for associated archaeological remains. James Houison, a prominent local builder and architect, designed and lived in the locally listed building Kia Ora and built a number of residences, including the State Heritage Register listed Perth House and

other important buildings around Parramatta. The archaeology of this lot is associated with Houison and his family, as they lived there for several decades in the mid-nineteenth century.

The site is also associated with the local newspaper *Cumberland Argus and Fruitgrowers Advocate*, which was a main source of news for Parramatta residents during its period of operation from the late 1880s to 1950. It is also a primary resource used today to research Parramatta's history. There is also an association with Edmund Mason, who operated the first local newspaper in Parramatta, the *Parramatta Chronicle*. The association of potential archaeological remains with these individuals and organisations that contributed to the growth of Parramatta would meet the threshold for local significance.

John Batman, who is associated with the founding of Melbourne, lived in Lot 77 as a child. However, there is a low potential for any archaeological remains to survive that could be associated with him.

4.9.4 Criterion C—Aesthetic significance

An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)

Archaeology of Ritchie's ironworks may display a level of technical achievement that would meet the threshold for local significance. The company started out primarily manufacturing agricultural implements, later expanding to produce a range of goods, including railway carriages under government tender. Archaeological evidence associated with the operation of the ironworks may provide evidence for technical adaptation or innovation that contributed to the success of the business. Ritchie's ironworks was one of many that operated across the state in the later nineteenth century and research undertaken for this report has not identified any technical innovations that would suggest the potential archaeological remains would meet the threshold for state significance.

4.9.5 Criterion D—Social significance

An item has strong or special association with a particular community or cultural group in NSW for social, spiritual or cultural reasons (or the local area)

While consultation has not been undertaken to inform a social values assessment, public interest in Parramatta's archaeology, history and heritage has been demonstrated by the local community on other recent projects, such as the Parramatta Light Rail. Social media posts on the archaeology findings were viewed thousands of times and two live webinars were attended by hundreds. Open days, exhibitions and talks on the archaeology of Parramatta and findings from many development projects are well attended and received. Interpretation of the archaeology, such as at Parramatta Park, and the Philip Ruddock Heritage Centre forms part of the character of Parramatta and is offered and marketed as visitor attractions. The archaeology of the site is considered to be of interest and value to the public—locals, visitors and commuters using the future Metro station—and this would be realised through public engagement activities during the archaeological investigations, publications and interpretation of the findings within the new development.

4.9.6 Criterion E—Research significance

An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)

The archaeological investigations of this site have the ability to address an extensive range of research questions and make a considerable contribution to our understanding of the historical and

cultural development of Parramatta and NSW. The range of research themes and topics include the environment and developing a colonial landscape, convict and free life, contact and interactions between Aboriginal people and the colonists, transformation from a gaol to a market town, urbanisation and improvement, economies and commerce, and industrialisation.

The archaeology can illustrate and inform our understanding of Parramatta's environment prior to the establishment of the settlement, how the landscape influenced early colonial development and how the colonists modified it or adapted to it. The archaeology may include evidence of a former wetland environment that initially hindered development along Macquarie Street and evidence of a creek that was later channelised by the Town Drain. Archaeological remains may also provide evidence of environmental degradation or change brought about by processes of urbanisation. The archaeology may also illustrate how individuals and government (colonial and local) responded to this degradation and poor sanitation as the town urbanised and made improvements to the local environment.

The archaeology has potential to answer research questions about colonialism and penal settlements, and the colonial governors' approach to governance, landscapes and control. It could also contribute to research regarding the nature of convict life, how they served their sentence and survived under military control. The archaeology could demonstrate differing material cultures between male and female convict places, as the convict huts on Church Street are likely those designed specifically to house female convicts (and perhaps families). Archaeological evidence of the convict huts could address research questions regarding vernacular architecture and construction of hut accommodation, whether their design and construction responded to the landscape and local materials, and how this differed to the original town plan. Artefacts associated with convict occupation may provide evidence of and insights into living conditions, diet, development of cottage industry, resistance and expressions of identity. The growing number of excavations of convict hut sites has also provided a large body of comparative data to interrogate variations between sites.

The development of Parramatta into a free town in the early nineteenth century and its ongoing growth into an urban centre would be represented in the archaeological record. Archaeological evidence for the occupation of former convict huts and allotments by free settlers and emancipists in the early decades of the nineteenth century could contribute to our understanding of this period of transformation. Importantly, it may also provide insights into how successful emancipists and free settlers were, and what their experience of life in the early colony was like. The archaeology associated with the longer-term residents who developed vacant allotments (the Bateman and Scott families) could provide evidence that illustrates the transition to free occupancy in the early colonial period, especially if compared with former convict hut allotments. The archaeological evidence may also reveal aspects and patterns of their behaviours, consumption and group identity. There is also potential for evidence to contribute to our understanding of early interactions between Aboriginal people and the colonists and convicts.

The site also has the ability to provide material evidence of urban households and domestic life through the nineteenth and early twentieth centuries. The archaeology could contribute to our understanding of the nature of childhood, gender identity, ethnicity, personal and religious identity, class and social standing, and consumption patterns, and how these were expressed or manifested in the fabric and material cultural of the site.

Church Street and George Street developed into the primary areas of commercial development in Parramatta and contained a wide range of businesses, including pubs, general stores, coach manufacturers, builders, chemists, printers, butchers, drapers and timber merchants. The commercial

focus shifted to Church Street in the latter half of the nineteenth century. By contrast, Macquarie Street and Smith Street continued to attract residential occupation throughout the nineteenth century. The archaeology associated with commercial and retail activities provides an opportunity to enhance our knowledge of Parramatta's local economy and manufacturing industries, and how it was influenced by colonial and global trade and economic conditions. Ritchie's ironworks grew from a small-scale industrial operation in the 1860s to a business with 60 employees in the 1880s. Archaeological remains of the ironworks could address research questions about the growth of local industries and provide evidence for technological change.

The research potential of this site is considerable. The project presents a rare opportunity to undertake extensive archaeological investigations and comparative analysis of almost an entire city block in the historic core of Parramatta. The research potential is significant at both a local and state level. The research potential of convict and early colonial archaeology is state significant. The research potential of the later urban archaeology is significant at a local level. However, there is potential for synergy in the significance when considering the opportunity for a neighbourhood study.

4.9.7 Criterion F—Rarity

An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)

The archaeology of the convict and early colonial development of Parramatta is a rare resource for both the city and NSW. Development over the last 20 or so years has reduced the archaeology resource of Parramatta and material evidence of the early convict settlement of NSW. While some convict hut sites have been retained in situ, at Parramatta Park, the Parramatta Justice Precinct and Philip Ruddock Heritage Centre, this project will further reduce the number of potential archaeological sites of this phase Convict and early colonial archaeology dating from the early 1790s to c1820s is rare at a state level. The opportunity to undertake archaeological investigations of nearly a whole city block in the colony's second settlement, and the potential for a neighbourhood and comparative analysis, is arguably rare at a state level.

The Town Drain is an early example of municipal efforts to manage stormwater and drainage through the construction of public infrastructure in Parramatta. It was built over the c1820s-c1840s—brick barrel construction in the 1820s and a sandstone box construction by the 1840s. The earlier section was built using convict labour and the later section by the council using convicts from Parramatta Gaol.³⁴² As the Town Drain is one of several examples built during the early–mid nineteenth century as part of the growth of town planning in NSW, it is not considered to be rare at a state level. While ongoing development in Parramatta has removed a large portion of the drain, several sections have been preserved in situ including a section of the 1840s sandstone below the footpath in Macquarie Lane and an 1820s brick section at the rear of 126–138 George Street. The Town Drain meets the threshold for local significance under this criterion.

4.9.8 Criterion G—Representativeness

An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the cultural or natural history of the local area)

The site would be representative of the urban archaeology of Parramatta, with Aboriginal, convict, early colonial, domestic, mercantile and industrial activities expected to be represented in the material evidence. There are other sites and archaeological collections that could also be representative of this type of archaeology. The archaeology may also be representative of particular groups of people, such

as convicts or the working classes in the nineteenth century. However, there is likely to be a great deal of variation in the material culture and interpretation of the archaeology.

4.9.9 Integrity

The intactness, or integrity, of the archaeology can influence its significance and research value. The site has been subject to continuous development since the beginning of British settlement at Parramatta. Historical, and more recent, redevelopments have an impact on archaeological deposits of earlier phases. This may result in disturbance of artefact deposits and limit the ability to associate them with certain individuals, groups or time periods. Archaeological evidence for convict occupation of the site may be somewhat ephemeral, occurring for a brief period and with material remains of structures expected to consist primarily of postholes. Subsequent improvements and development will likely have impacted these remains. Isolated features and truncated remains can be difficult to interpret and there may not be a strong archaeological signature for the convict occupation of the site. Archaeological remains of the convict and early colonial occupation in Phase 1 and the early decades of Phase 2 will have been subject to disturbances and impacts from subsequent redevelopments, particularly from the mid nineteenth century onwards (later Phase 2, Phases 3 and 4). Therefore, it is likely that the evidence for early colonial occupation will be less intact than later phases.

Archaeological remains of the Town Drain are expected within the site; however, they may not be intact. Recent archaeological investigations have identified this section drain was modified in the 1930s with concrete replacing the original capping.³⁴³ Impacts from various later twentieth century and more recent services were also noted in the section below Macquarie Street. The drain alignment is through a lot with a 1970s two-storey building. Construction of this building may have impacted the drain, or sections of it. Recent services installed through Macquarie Lane are also likely to have impacted the drain. While the Town Drain may have historical value at a state level, the archaeology is likely to be significant at a local level. This is due, in part, to the anticipated reduced level of intactness within the site and diminished integrity of the whole alignment. The assessment of local significance for the Town Drain is consistent with other recent assessments such as for the Parramatta Square archaeological investigations.³⁴⁴

4.9.10 Statement of significance

The Parramatta metro station construction site has potential to contain a range of archaeology with historical, associative, aesthetic, social, research, rarity and representative values. The archaeology has the ability to demonstrate key aspects relating to the convict penal system and establishment of the colony of NSW, and the evolution of Parramatta from an agricultural settlement to an urban centre, including its commercial and industrial development. The archaeology is associated with significant groups, such as convicts, emancipists and free settlers, whose labour and endeavours contributed to the success of the colony in the early decades. The archaeology is also associated with a range of individuals and businesses that were important to the culture and growth of Parramatta in the nineteenth century. Evidence of Ritchie's Ironworks and other local manufacturing may display technical achievements and contribution to the industrial development of Parramatta.

The research potential of the site is considerable and is significant a local and state level. Archaeological investigations of the site have the ability to address an extensive set of research questions and contribute to our knowledge and understanding of the colonial landscape, the lives of convicts and free settlers, transformation, urbanisation and improvement, commerce and industry in the late eighteenth through to the early twentieth centuries. The social value of the archaeology could be realised through public programs and interpretation of the findings. Aspects of the archaeology are

rare—particularly in the early colonial phase, including evidence of the environment, landscape, convicts and early settlers. The opportunity to undertake archaeological investigations and comparative analysis of almost an entire city block is also rare at a state level. The site, along with others, is representative of the urban archaeology of Parramatta. These would be confirmed through archaeological investigations and addressing the research design in the final reporting.

The significance level of the archaeology varies across the site. Archaeological evidence of the early colonial landscape, contact and interactions between Aboriginal people and colonists, convict hut development and occupation, and transformation by free occupants during the early nineteenth century is state significant for historical, associative, research and rarity values. This includes evidence of the environment, convicts, contact, early settlers and the transformation from a penal to a free colony. The potential for state significant archaeology is anticipated in the allotments fronting George and Church Street (Figure 4.82). Archaeology associated with the urban development of Parramatta from the early/mid to late nineteenth century—expected to be present across most areas of the site—is locally significant (Figure 4.83). This includes the archaeology associated with the development of Parramatta and the lives of those who contributed to it, and the archaeology of Ritchie’s Ironworks and the Town Drain. It is noted that the research value of late eighteenth and nineteenth century archaeology of the site could be significant at a state level given the potential for a neighbourhood study.

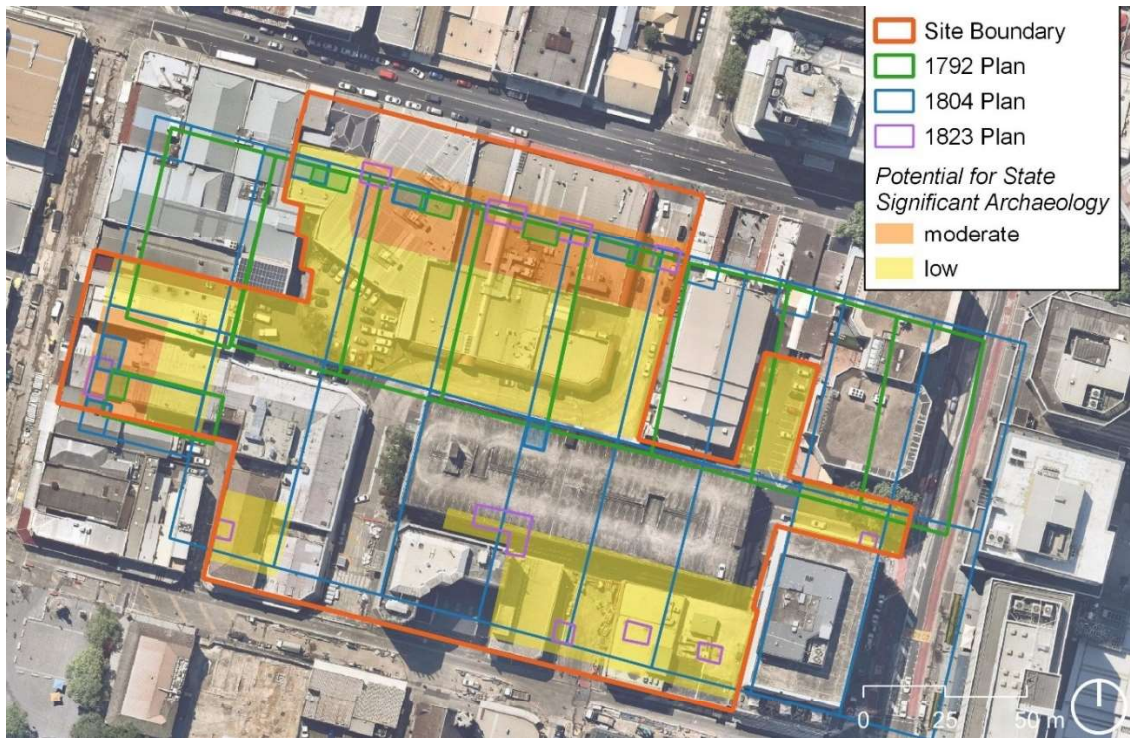


Figure 4.82 State significant historical archaeology potential mapping. (Source: Nearmap with GML overlay)

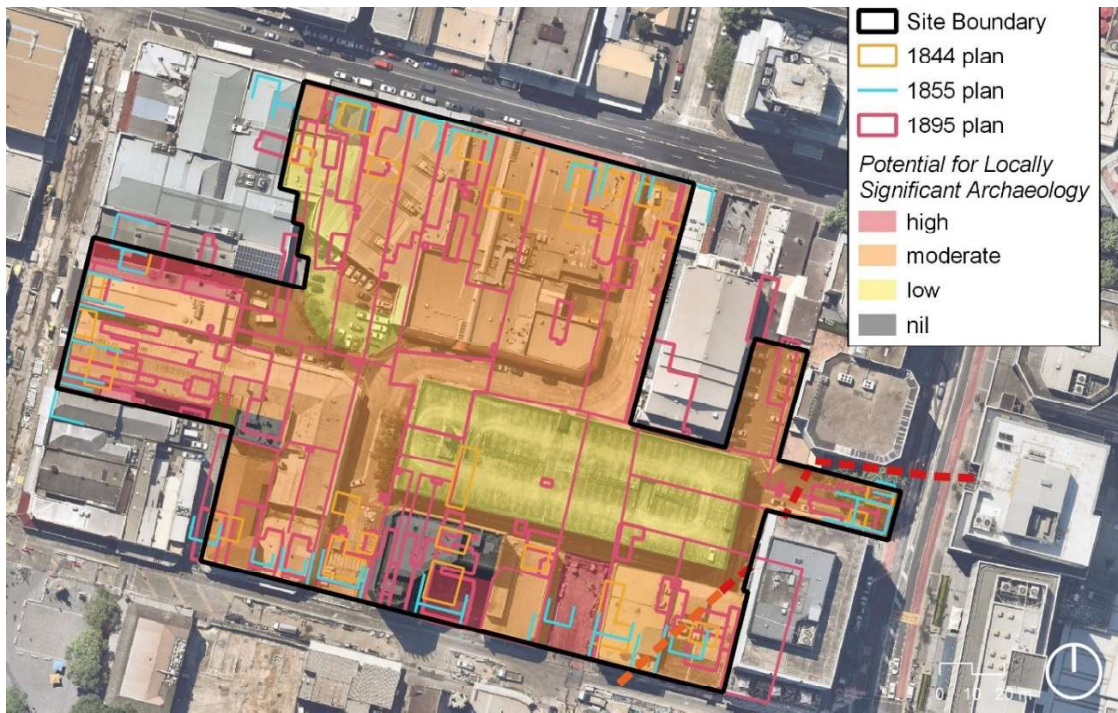


Figure 4.83 Locally significant historical archaeology potential mapping. (Source: Nearmap with GML overlay)

Table 4.7 Summary of the site's historical archaeological potential and significance by property/allotment.

Address	Lot	Phase	Description / types of archaeology	Potential	Significance	
220 Church Street	15a	1	<ul style="list-style-type: none"> Convict hut—postholes, beam slots, brick chimney base, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cesspits, rubbish pits, lot boundaries (postholes or ditches). 	Moderate	State	
			2	<ul style="list-style-type: none"> c1820s building—brick or stone footings, occupation deposits, cellar. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	High	State
			2 and 3	<ul style="list-style-type: none"> c1840s building—postholes or beam slots, occupation deposits, cellar. Kitchens, stables and workshops—brick, stone or timber footings, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	High	Local
222–230 and 232 Church Street	15a	1	<ul style="list-style-type: none"> 1880s shop—extant within site. Yard features—outbuildings, yard surfaces, artefact scatters, cistern, cesspits, rubbish pits. 	High	Local	
			2 and 3	<ul style="list-style-type: none"> Convict hut—postholes, beam slots, brick chimney base, occupation deposits. Yard features—wells, cesspits, rubbish pits, artefact scatters, lot boundaries (postholes or ditches). 	Low	State
			2 and 3	<ul style="list-style-type: none"> c1820s building—brick or stone footings, occupation deposits, cellar. c1840s buildings—brick or stone footings, occupation deposits, cellar. Kitchens, stables and workshops—brick, stone or timber footings, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	State (c1820s) Local
		4	<ul style="list-style-type: none"> c1880s shops—brick footings, occupation deposits. Baker's oven, brick stable, hayloft and other outbuildings—brick, stone or timber footings, occupation deposits. 	Moderate	Local	

Address	Lot	Phase	Description / types of archaeology	Potential	Significance
236 and 238 Church Street	Lot 10, Lot 12 (southern part)	1	<ul style="list-style-type: none"> Yard features—yard surfaces, artefact scatters, cisterns, cesspits, rubbish pits, lot boundaries (postholes or ditches). 	Low	State
		2	<ul style="list-style-type: none"> c1840s stone cellar (in situ below existing buildings). Outbuildings—brick or stone footings, postholes or beam slots, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	High	Local
41 George Street (early twentieth-century shop)	Lot 12 (northern part)	3 and 4	<ul style="list-style-type: none"> c1840s building—brick or stone footings, occupation deposits. c1870s brick surface for outbuilding. Extensions to c1840s building—brick or stone footings, postholes, timber beam slots. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local
		4	<ul style="list-style-type: none"> c1880s building—brick or stone footings. c1880s building—occupation or underfloor deposits. 	Moderate Low	Local
41–59 George Street	Lot 12 (part), Lot 14 (western and southern parts)	1–4	<p>Southern half of Lot 12 and western and southern parts of Lot 14 were archaeologically investigated in 1996. There is low potential for localised areas to retain archaeological features and deposits.</p> <p>Remains of two wells and a cistern are preserved below the existing building near the western edge of Lot 14 and in Lot 12.</p>	Low High	State and local if present
41–59 George Street	Lot 14 (eastern half)	1	<ul style="list-style-type: none"> Convict hut—postholes, beam slots, brick chimney base, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cesspits and rubbish pits, lot boundaries (postholes or ditches). 	Moderate	State
		2–4	<ul style="list-style-type: none"> 1820s building—postholes, timber beam slots, cellar, occupation deposits. 1880s Parramatta Assembly Hall—brick, stone or concrete footings. 	Moderate	State (c1820s) Local

Address	Lot	Phase	Description / types of archaeology	Potential	Significance	
Parramall, 61B George Street (western half) and Horwood Place	Lot 15	1	<ul style="list-style-type: none"> Outbuildings (including c1840s stables)—brick footings, postholes, timber beam slots, occupation deposits. Yard features—yard surfaces, artefact scatters, fences (postholes), wells, cisterns, cesspits, rubbish pits. Artefact deposits associated with Phase 2–4 commercial properties. 	Moderate	State	
			2	<ul style="list-style-type: none"> c1820s building—brick or stone footings, cellar, occupation deposits. Outbuildings, yard surfaces and artefact scatters, wells or cisterns, cesspits and rubbish pits. 1840s house—brick or stone footings, cellar, occupation deposits. 	Moderate	State (c1820s) Local
			3 and 4	<p>Ritchie's ironworks:</p> <ul style="list-style-type: none"> 1870s workshops, sheds, engine house and smokestack—brick or stone footings, postholes or timber beam slots. Yard features—yard surfaces, artefact scatters, industrial waste, tram tracks, wells, cisterns, cesspits, rubbish pits. 	Moderate to high	Local
Parramall, 61B George Street and Horwood Place	Lot 16	1	<ul style="list-style-type: none"> Convict hut—postholes, beam slots, brick chimney base, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cesspits, rubbish pits, lot boundaries (postholes or ditches). 	Moderate	State	
			2 and 3	<ul style="list-style-type: none"> 1820s timber building—postholes, timber beam slots, cellar, occupation deposits. 1840s Myrtle Cottage—brick or stone footings, cellar, occupation deposits. 1850s timber building—postholes or timber beam slots, occupation deposits. Yard features—outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	State (c1820s) Local
			3 and 4	<ul style="list-style-type: none"> Yard features—outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local

Address	Lot	Phase	Description / types of archaeology	Potential	Significance
Horwood Place	Lot 17	1	<ul style="list-style-type: none"> Convict hut—postholes, beam slots, brick chimney base, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cesspits, rubbish pits, lot boundaries (postholes or ditches). 	Moderate	State
		2-4	<ul style="list-style-type: none"> c1820s building—postholes, timber beam slots, cellar, occupation deposits. c1830s building and outbuildings—brick or stone footings, postholes, timber beam slots, cellar, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	State (c1820s) Local
Macquarie Lane	Lot 18	1, 2, 3, 4	<ul style="list-style-type: none"> Yard features—outbuildings (brick or stone footings, postholes, timber beam slots), yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	High	Local
		4	<ul style="list-style-type: none"> c1880–1890s shed and undocumented outbuildings—brick or stone footings, postholes, timber beam slots, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	High	Local
Multistorey car park (71 George Street)	Lot 28 (western half)	1, 2, 3, 4	<ul style="list-style-type: none"> Truncated wells, cesspits or rubbish pits. 	Low	TBC Local
Macquarie Lane	Lot 28 (eastern half)	1	<ul style="list-style-type: none"> Undocumented use—land clearance, informal rubbish disposal. 	Low	Local
		2	<ul style="list-style-type: none"> Town Drain—sandstone drain, surrounding archaeological deposits including palynological data. 	High	Local
		2, 3, 4	<ul style="list-style-type: none"> Truncated deeper cut features such as wells, cisterns, cesspits or rubbish pits. 	Moderate to high	Local
74 Macquarie Street	Lot 74	1	<ul style="list-style-type: none"> Undocumented use—land clearance, informal rubbish disposal. 	Low	TBC Local
		2, 3	<ul style="list-style-type: none"> Town Drain below 74 Macquarie Street—surrounding archaeological deposits including palynological data. 	Moderate	Local
			<ul style="list-style-type: none"> Town Drain below Macquarie Lane—sandstone drain, surrounding archaeological deposits including palynological data. 	High	Local

Address	Lot	Phase	Description / types of archaeology	Potential	Significance
			<ul style="list-style-type: none"> c1820s building and outbuildings—brick or stone footings, postholes, timber beam slots, cellar, occupation deposits. c1850s building—brick or stone footings, postholes, timber beam slots, cellar, occupation deposits. Yard features—yard deposits, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	State (c1820s) Local
	4		<ul style="list-style-type: none"> c1880–1890s house and outbuildings (stables, coach house?)—brick or stone footings, postholes, timber beam slots, surfaces, occupation deposits. Yard features—yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local
72 Macquarie Street	Lot 75	1	<ul style="list-style-type: none"> Undocumented use—land clearance, informal rubbish disposal. 	Low	Local
	2		<ul style="list-style-type: none"> Town Drain—sandstone drain and surrounding archaeological deposits including palynological data. 	Moderate	Local
	2 and 3		<ul style="list-style-type: none"> 1820s building and undocumented outbuildings—brick footings or postholes, timber beam slots, occupation deposits. 1840s building—brick or stone footings, occupation deposits. Yard features—undocumented outbuildings (brick, stone or timber footings), yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	State (c1820s) Local
	4		<ul style="list-style-type: none"> c1880–1890s weatherboard coach house—postholes or timber beam slots. Yard features—yard surfaces, artefact scatters, cisterns, cesspits, rubbish pits. 	Moderate	Local
70 Macquarie Street	Lot 76 (southern half)	1	<ul style="list-style-type: none"> Undocumented use—land clearance, informal rubbish disposal. 	Low	Local
	2		<ul style="list-style-type: none"> 1820s building—timber, brick or stone footings, occupation deposits occupied by William Scott and family until sometime during the c1830s. Yard features—undocumented outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local Potentially state for 1820s/1830s
	3, 4		<ul style="list-style-type: none"> Yard features—undocumented outbuildings, yard surfaces, artefact scatters, cisterns, cesspits, rubbish pits. 	Moderate	Local

Address	Lot	Phase	Description / types of archaeology	Potential	Significance
Multistorey car park	Lot 76 (northern half)	2-4	<ul style="list-style-type: none"> Truncated deeper cut features such as wells, cisterns, cesspits, rubbish pits. 	Low	State
68 Macquarie Street	Lot 77 (southeast)	1	<ul style="list-style-type: none"> Yard features—outbuildings (postholes, timber beam slots), wells, cisterns, cesspits, rubbish pits. 	Low	State
		2	<ul style="list-style-type: none"> 1820s timber building—postholes, timber beam slots, occupation deposits occupied by William Bateman and family until sometime during the c1830s. Yard features—outbuildings (brick, stone or timber footings), yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	State (c1820s/1830s) Local
		3	<ul style="list-style-type: none"> Undocumented outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local
		4	<ul style="list-style-type: none"> c1880-1890s outbuildings associated with Kia Ora—brick, stone or timber footings. Yard features—undocumented outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local
62-64 Macquarie Street	Lot 77 (southwest)	2-4	<ul style="list-style-type: none"> Kia Ora—heritage listed building. 	High	Local
Multistorey car park	Lot 77 (northern half)	1-4	<ul style="list-style-type: none"> No potential for remains of convict hut. Truncated deeper cut features such as wells, cisterns, cesspits, rubbish pits. 	Nil Low	TBC Local
58-60 Macquarie Street	78	1-4	<ul style="list-style-type: none"> Archaeological remains removed by excavation for basements. 	Nil	Nil
Macquarie Lane	78	1-3	<ul style="list-style-type: none"> Undocumented use—landscaping, improvement, drainage and rubbish dumping. 	Low	Local
		4	<ul style="list-style-type: none"> Ritchie's ironworks—rail tracks, lightweight sheds or workshops, yard surfaces, industrial waste, rubbish pits. 	Moderate	Local
Multistorey car park	78	1-3	<ul style="list-style-type: none"> Undocumented use—landscaping, improvement, drainage and rubbish dumping. 	Low	TBC Local

Address	Lot	Phase	Description / types of archaeology	Potential	Significance
Horwood Place	79	4	<ul style="list-style-type: none"> Truncated deeper cut features such as wells, cisterns, cesspits, rubbish pits. 	Low	TBC Local
		1	<ul style="list-style-type: none"> Undocumented use—landscaping, improvement, drainage and rubbish dumping. 	Low	Local
232–230 Church Street	80	2, 3, 4	<ul style="list-style-type: none"> c1830 house, kitchen, coach house, stables—brick, stone or timber footings, cellar (house only), occupation deposits. Yard features—undocumented outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local
		1	<ul style="list-style-type: none"> Undocumented use—landscaping, improvement, drainage and rubbish dumping. 	Low	Local
48 Macquarie Street	81	2, 3	<ul style="list-style-type: none"> 1850s building—stone footings, cellar, occupation deposits. Yard features—undocumented outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local
		4	<ul style="list-style-type: none"> 1880s building—brick or stone footings, occupation deposits. Sweeny's coach building—undocumented sheds and outbuildings, artefact scatters, rubbish pits. Yard features—undocumented outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate	Local
48 Macquarie Street	81	1	<ul style="list-style-type: none"> Undocumented use—landscaping, improvement, drainage and rubbish dumping. 	Low	Local
		2, 3	<ul style="list-style-type: none"> 1820s building—postholes or timber beam slots, occupation deposits. Yard features—undocumented outbuildings, yard surfaces, artefact scatters, wells, cisterns, cesspits, rubbish pits. 	Moderate (southern half of Lot 81) Low (northern half of Lot 81)	State (c1820s) Local
48 Macquarie Street	81	4	<ul style="list-style-type: none"> Sweeny's coach building—two large timber sheds, cesspit. 1880s printworks—brick, stone or possibly concrete footing, surfaces, occupation deposits. Yard features—outbuildings, yard surfaces, artefact scatters, cisterns, cesspits, rubbish pits. 	Moderate	Local

4.10 Endnotes

- 1 AMAC Excavation Report Archaeological Management and Consulting Group, 'Report on the Archaeological Test Excavation Programme and Monitoring for the Proposed OfficeWorks Superstore 41-53 George Street, Parramatta', report prepared for Richardson and Wrench and Siblow Pty Ltd, May 1996.
- 2 Archaeological Management and Consulting Group Pty Ltd, 'Archaeological Excavations 1996 Report – Volume 1, Woolcott's Dispensary formerly Miller and Co's Cordial Factory, 41–47 George Street, Parramatta NSW', report for Siblow Pty Ltd and Richardson and Wrench, November 2003
- 3 Archaeological Management and Consulting Group Pty Ltd, 'Archaeological Assessment and Research Design, 37–53 George Street and 240–252 Church Street Parramatta NSW', report for Siblow Pty Ltd, September 2005
- 4 Austral Archaeology, 'Re: Request to Alter Permit Conditions—Archaeological Excavations—236 Church Street Parramatta—S140 Application No 2006/S140/012', letter report to NSW Heritage, 27 October 2006.
- 5 Austral Archaeology, 'Re: Request to Alter Permit Conditions—Archaeological Excavations—236 Church Street Parramatta—S140 Application No 2006/S140/012', letter report to NSW Heritage, 27 October 2006.
- 6 Casey & Lowe, 'Parramatta Square Trunk Sewer Preliminary Results Archaeological Report', report for Walker Parramatta Square Developments on behalf of Sydney Water, May 2021.
- 7 Edward Higginbotham and Associates Pty Ltd. "Report on the Archaeological Excavations, 25 Smith Street and 76-78 Macquarie Street, Parramatta, Nsw." Kann Finch Architects, 2004.
- 8 GML Heritage, 143–169 Macquarie Street (One PSQ), Parramatta. Historical Archaeological Excavation Report, report prepared for Leighton Properties Pty Ltd, December 2015.
- 9 Casey & Lowe. "Archaeological Investigation, Non-Indigenous Archaeology, 1 Smith Street, Parramatta." Sydney Water, 2005.
- 10 Casey & Lowe. "3 Parramatta Square, Parramatta, Formerly 153 Macquarie Street, Parramatta. Archaeological Investigation, Volume 1: Main Report", Parramatta Square No. 3 Property Pty Ltd and City of Parramatta, December 2020.
- 11 Casey & Lowe. "4&6PS, 1A–1C Civic Place & 12–38 Darcy Street, Parramatta. Preliminary Results Historical Archaeological Investigation", Walker Corporation.
- 12 Casey & Lowe. "8 Parramatta Square (8PS) 160–182 Church Street Parramatta. Preliminary Results Historical Archaeological Investigation". Walker Corporation, June 2017.
- 13 CRM, Report of Archaeological Investigation. Church Street Mall Redevelopment Bicentennial Square Parramatta", March 2016.
- 14 CRM, "Archaeological Investigation 211 Church Street Parramatta", The University of New England, October 2012.
- 15 Archaeological and Heritage Management Solutions, "Archaeological Investigations & Archival Recording at the Former 'Red Coats' Mess Building, 52 George Street Parramatta NSW". Mr Charles McCloskey, April 1999 .
- 16 Higginbotham, Edward. "The Babes in the Wood, Parramatta Report on the Archaeological Excavation of the Former Prospect Electricity Staff Car Park, Corner of Smith and Georges Streets, Parramatta, Nsw." Propsect County Council, 1990.
- 17 Godden Mackay Logan, 16–18 Smith Street, Parramatta—Archaeological Investigation, Volume 1, Main Report, report prepared for Grant Constructions Pty Ltd, 2000.
- 19 Borehole logs from Golder and Douglas Partners, November 2020, supplied by Sydney Metro.
- 20 GML Heritage, 143–169 Macquarie Street (One PSQ), Parramatta. Historical Archaeological Excavation Report, report prepared for Leighton Properties Pty Ltd, December 2015.
- 21 3 Parramatta Square, and 25 Smith Street and 74–76 Macquarie Street.
- 22 Tench 1961, pg 195.

- ²³ For example: Higginbotham, Edward. "The Babes in the Wood, Parramatta Report on the Archaeological Excavation of the Former Prospect Electricity Staff Car Park, Corner of Smith and Georges Streets, Parramatta, Nsw." Prospect County Council, 1990.
- ²⁴ Edward Higginbotham and Associates Pty Ltd, "Report on the Archaeological Excavations, 134–140 Marsden Street & 45–47 Macquarie Street, Parramatta NSW. Volume 1 Introduction, historical research and archaeological assessment", report prepared for Estate Construction of Australia Pty Ltd, March 2007
- ²⁵ Parramatta RSL post-ex (in prep).
- ²⁶ Casey & Lowe. "Archaeological Testing, George Street Gatehouse, Parramatta Park, Parramatta." Government Architects Office on behalf of Parramatta Park Trust, 2013.
- ²⁷ Edward Higginbotham and Associates Pty Ltd. "The Babes in the Wood, Parramatta Report on the Archaeological Excavation of the Former Prospect Electricity Staff Car Park, Corner of Smith and Georges Streets, Parramatta, Nsw." Prospect County Council, 1990.
- ²⁸ A hearth identified by Comber Consultants from archaeological investigations at PS5/PS6 in 2016. Comber Consultants, 'Parramatta Square 5 & 6 (PS5&6): 12-38 Darcy St Parramatta, Excavation Report, AHIP No. C0001379', report for Parramatta Square Property No. 1 Ltd Pty, August 2019.
- ²⁹ Culturally modified flint and glass artefacts identified from archaeological investigations in 2017-2019 by GML Heritage. GML Heritage, Arthur Phillip High School and Parramatta Public School, Parramatta, Aboriginal Post-Excavation, report prepared for School Infrastructure NSW, July 2021.
- ³⁰ Modified glass artefacts identified from archaeological investigations within the Harris Street footpath on the western side of Robin Thomas Reserve. Comber Consultants, Harris Street, Parramatta, Excavation Report, AHIP No. 1131736, report prepared for Endeavour Energy, 2015.
- ³¹ Casey & Lowe, 'Parramatta Square Trunk Sewer Preliminary Results Archaeological Report', report for Walker Parramatta Square Developments on behalf of Sydney Water, May 2021.
- ³² Casey, M and Hendrickson, G, eds., 2009, *Breaking the Shackles: Historical Lives in Parramatta's Archaeological Landscape*, Parramatta Heritage Centre and Casey & Lowe, Parramatta, p 33.
- ³³ Archaeology and Heritage Pty Ltd, 'Parramall 55–57 George Street, Parramatta', Scott Carver Architects, July 2004.
- ³⁴ Casey & Lowe, 'Parramatta Square Trunk Sewer Preliminary Results Archaeological Report', report for Walker Parramatta Square Developments on behalf of Sydney Water, May 2021.
- ³⁵ Casey & Lowe 2017, 48 Macquarie & 220–238 Church Streets, Parramatta, Archaeological Assessment, p 84.
- ³⁶ Casey & Lowe, *PS5&6 Parramatta Square, Historical Archaeological Impact Statement & Archaeological Research Design*, 2015, p 77,
- ³⁷ Parramatta Light Rail in Macquarie Street in 2020 (GML) and Parramatta Square trunk sewer works in Macquarie Lane in March 2021 (Casey & Lowe).
- ³⁸ Casey & Lowe, *PS5&6 Parramatta Square, Historical Archaeological Impact Statement & Archaeological Research Design*, 2015.

Research Design

5 Research design

5.1 Introduction

Parramatta is a layered and complex cultural landscape. It has been shaped by Aboriginal people and European settlement, and influenced by major forces of colonialism, urbanisation and industrialisation. Archaeology can provide evidence not available in other sources, challenge biases in the historical record and provide tangible material remains of past lived experiences. This project provides an excellent opportunity to contribute, through archaeological evidence, to our knowledge and understanding of the past and creating a lasting public benefit.

The archaeological research design is a series of questions for the project set within a wider research framework. By undertaking archaeological investigations within the context of current and relevant research topics, the archaeology can make a meaningful contribution, allow for comparative analysis with other sites in NSW, Australia, and internationally, and link to heritage interpretation within the new station and associated developments.

5.2 Aboriginal archaeology

There are many scientific and Aboriginal heritage unknowns about this specific area of Parramatta, related to sedimentary formation/composition and Aboriginal heritage and archaeology. The archaeology and sedimentary questions are interconnected, notably because of the unique formation and characteristics of the Holocene alluvium.

5.2.1 Sedimentology research questions

The site is primarily associated with the Holocene alluvium. Framing questions focus on the nature of the deposit, its formation processes, its structure, its association with the adjacent PSB, and how evidence for Aboriginal use of the area has been encapsulated and retained:

- What is the extent of the alluvial landscape?
 - Is the alluvial landscape uniform and consistent across its extent?
 - Is there more than one alluvial landscape (eg does the alluvium connected with the water course in the southeast of the site differ to that mapped by Mitchell 2008?)
 - What is the depth of the alluvium, and how does this depth differ across its extent?
- How did the alluvial soil landscape form?
 - What is the structure of the alluvial soil landscape? Does it comprise the two distinct layers described by Lawrie 2019? Are these layers uniform? Do they extend across the entire soil landscape?
 - What is the date of formation for each layer?
 - Does each layer comprise a pollen record which allows for palaeoenvironmental reconstruction?
- How does the alluvial soil landscape interface with the PSB?

- If the lower layer of alluvium predates the fluvial component of the PSB, how did the PSB interface with the alluvium, or does the alluvium extend below the PSB?
- Why is there no PSB as a stratigraphical horizon within the mapped extent of the alluvium?
- How did the Holocene layer of the alluvium form? Did this cut and erode PSB?
- What are the Aboriginal cultural connections associated with this alluvium?
 - Did the lower layer form a wetland or contribute to a waterlogged environment in the centre of Parramatta?
 - During what period was this wetland present (eg how does this correlate with climatic and environmental change [as defined under the ERS in Section 3.3.1])?

5.2.2 Aboriginal archaeology research questions

The archaeological research questions associated with most projects on the Cumberland Plain ask simple questions of the archaeology, namely:

- What is the condition and extent of the archaeological deposit?
- How old is the archaeological deposit?
- What does the archaeological deposit tell us about how Aboriginal people used the landscape and specific places within it?
- How does the archaeology relate to contemporary Aboriginal communities and peoples today?

These fundamental questions apply to the current investigation, but have been refined to be location-specific, while continuing the process of cultural landscape investigation commenced through the investigation of sediments.

The phases referenced in the following questions relate to the sequence of Aboriginal occupation provided in Section 3.3.1.

- Prior archaeological investigations have suggested that deposits connected with the alluvium date to the last 2,000 years only:
 - Is there evidence of earlier Phase 1 and/or 2 archaeology? Or does the archaeology relate only to the last 2,000 years (Phases 2B and 3)?
 - Where is this located within the stratigraphical matrix of alluvium/PSB?
 - Have geoarchaeological processes of Holocene alluviation stripped and removed earlier evidence of Phase 1 and earlier Phase 2 archaeology from this particular location?
- If the alluvium did form in connection with a wetland during the mid-Holocene, was this a major resource zone for Aboriginal people?
 - Modelling for site patterning has suggested a 'sensitivity line', drawn at an arbitrary 50m to 80m from the mapped edge of the alluvium (Figure 3.3). Are Aboriginal sites located to

- the east and north of this line, in locations on the margin of the alluvium, which may have been drier? Can the 'sensitivity line' be refined?
- What is the patterning of archaeological sites in and around the alluvium?
 - What is the composition of the archaeological sites? Do the tools present evidence for their type of use, and does this specifically relate to uses connected to wetland resources?
 - Are there other types of archaeological evidence? Can we observe archaeological signatures for plant, animal and/or resource processing?
- The alluvium is located within a deep time cultural landscape in the centre of Parramatta, considering the above:
 - How does new information on use of a wetland resource change our understanding of middle to late Aboriginal cultural landscape use?
 - Does the archaeological signature vary over the last 2,000 years, and can this be related to social and economic changes under local Aboriginal tradition?
 - If the wetland only formed during the mid-Holocene, what was here before? And how was this landscape used?
 - After 1788, did Aboriginal people attempt to maintain traditions connected with resource extraction from a wetland area? Is there evidence of post-contact material culture (glass, ceramic or flint)? Can use wear define how these were manufactured and used? Do these uses suggest continuity or divergent methods to those connected with stone implements in Phase 2B?
 - How do the archaeological signature of the Metro site change and alter our understanding of deep time Parramatta? And how is this understanding interpreted by Darug people today?
 - Can the results from the work be interpreted through cultural frameworks and local Darug traditions?
 - Do the results support recent investigations into late Holocene social and demographic interpretation?
 - Does the archaeological and environmental research support further public interpretation or this specific place within Parramatta? And how do Darug people want this specific story to be disseminated?

5.3 Historical archaeology

There is a growing number of archaeological studies of Parramatta relating to redevelopment and urban renewal projects in the last 20–30 years. Research frameworks have evolved during this time and the outcomes from the archaeological research continue to add to our knowledge about Parramatta and its convict and colonial history. The pace and constraints of development-led projects can often affect the ability to synthesise archaeological results from multiple sites. This project—given its scale and potential archaeological resource—provides an opportunity to undertake a comparative

analysis of individual historic lots, their associated occupation and use over time, within a larger urban neighbourhood.

5.3.1 Existing research frameworks

Most archaeological research questions are framed within wider historical themes. Historical themes link heritage places, including archaeological sites, to broader patterns and subjects in our national and state histories. Themes provide an organising framework for understanding the connections and relationships between places that may be geographically dispersed. Historical themes relevant for researching Parramatta's historical archaeology are provided in PHALMS. This landmark study—prepared in 2000—provides the basis for most subsequent research designs developed for archaeological investigations within Parramatta. PHALMS and several other archaeological studies have informed the approach the research design and questions developed for the Parramatta metro station construction site. These are outlined below.

PHALMS

This study examined the historical archaeological landscapes of Parramatta and developed an archaeological research framework based on historical themes. PHALMS was not intended to be a static research framework and management document. It acknowledges that the research themes and questions should be adapted for each archaeological project and updated with new information about the ability for the resources, or sites, to answer certain questions, or where new avenues of inquiry arise. Analysis of the archaeological landscapes explored in PHALMS is still relevant and the research framework has informed the approach for this site, though site-specific research questions that consider more recent archaeological research findings have been developed.

Convict huts

Archaeological research designs for convict hut excavations in Parramatta were reviewed to inform the research questions for this phase of occupation at the site. Three were selected as a sample to inform this research design—134–140 Marsden Street and 45–47 Macquarie Street (Higginbotham & Associates), Parramatta Justice Precinct (Casey & Lowe), and Parramatta RSL (GML). A similar range of research themes and questions were posed prior to archaeological excavations—including the environment and landscape of Parramatta, physical remains and spatial arrangements of convict huts and allotments, town planning and landscapes of control, aspects of material culture including trade, manufacturing, local and global economies, expressions of identity, gender and cultural practices, lifeways of convicts compared to free settlers and emancipists, and 'frontier' life in the early colony.

Archaeological investigations have begun to address these questions and build on our knowledge and understanding of the convict phase in Parramatta's history and how it relates to the wider penal system, colonial economy and cultural development. Issues arising from the research include the challenges in distinguishing between convict and free occupants in the archaeological record and artefact assemblage. There is also a noted lack of synthesis and comparative analysis of convict hut sites archaeologically salvaged as part of development-led projects. Madeline Parker's 2006 Honours thesis provides a comparative review of six sites excavated in the 1980s and 1990s and is a useful resource, particularly regarding the physical hut remains.¹ However, there are now several more archaeological datasets and research of individual sites that add to our knowledge and could be included in comparative analysis to provide new insights into this phase of colonial history.

Urban Parramatta

There have been numerous archaeological excavations in Parramatta's historic core providing evidence and datasets about nineteenth-century urban development and occupation. An overview of findings from some key archaeological projects up to 2009 is provided in the *Breaking the Shackles* publication.² This publication illustrates an extensive range of findings about Parramatta's history, culture and life from the colonial period onwards. It also demonstrates the variations and nuances between sites and individual stories that can be told through archaeological investigations and evidence.

More recently there have been several large archaeological projects with a research approach and findings relevant for the site. Parramatta Square—a large redevelopment just to the south of the site—yielded a range of archaeology, contributing significant datasets for research. These projects were undertaken by several archaeological consultancies. However, the findings and research from the Casey & Lowe projects (PS3, PS4+6 and PS8) are most informative for this research design. The research outcomes included answering questions regarding colonial landscape modification, agriculture and the influence of climate, water management, early colonial and mid–late nineteenth-century urban development, households and lifeways, and gentrification (development of the middle class) in Parramatta. Archaeological investigations of the site could add to this corpus of research, and also provide further knowledge about urbanisation and culture in Parramatta. As *Breaking the Shackles* and many other excavation results and interpretation outcomes demonstrate, there are many more stories to unlock from archaeological research.

The Parramatta Light Rail (GML) research design took a landscape approach and posed a wide range of questions within themes based on those developed by PHALMS. The archaeology from this project mostly related to specific early colonial sites, including military and institutional sites. A wide range of archaeology associated with historic road infrastructure and utilities was also uncovered during the construction works. Archaeological investigations of the site could provide evidence and data that contribute and build on the Parramatta Light Rail research regarding the residential, commercial and industrial development of Parramatta.

Archaeological collections

Many archaeological collections generated from redevelopments in Parramatta are stored within basement or service areas of the new buildings. A recent review of a sample of these collections identified many were not easily accessible or could not be confirmed as still existing.³ There are several significant collections held at the Parramatta Heritage Centre and a strategy prepared for City of Parramatta identified a range of measures to improve management of the collection and any future accessions.⁴ Issues identified in that document are the need for consistent and compatible data capture (such as artefact databases) and access to the data, and physical collections, for comparative research and public engagement. The material culture questions developed for the site have informed the archaeological investigation methodology and approach to artefact cataloguing using a project-specific database. This approach would facilitate comparative analysis of the artefacts from the site with other significant collections held by the heritage centre, and future collections yet to be generated.

5.3.2 Opportunities from this site

Archaeological investigations of the site have the ability to answer substantive research questions about the formation of the colony, and the cultural, social and economic influences that shaped lives in

Parramatta from the late eighteenth to the early twentieth centuries. Based on our understanding of the potential archaeological resources and research outcomes from relevant studies, the opportunities from this site are summarised below.

- Further evidence and understanding of how the environment influenced the colonial settlement and town development in the urban core of Parramatta, and how convicts and settlers imposed order on it, adapted to it and improved it.
- Archaeological evidence of up to five or six convict huts and associated allotments is expected from investigations of the site. This could provide a substantial amount of new information about hut morphology, occupation, spatial arrangements and transformation by free occupants in the early convict phase, and allow for an updated comparative analysis of Parramatta sites and also a comparative with other penal colonies. The site may also provide insights into the material culture of female convict spaces.
- The site encompasses most of an urban block within the historic core of Parramatta. This provides an opportunity to undertake a comparative analysis of individual historic lots, their associated occupation and use over time, within a larger neighbourhood. This neighbourhood could be compared with others in Parramatta, Sydney or elsewhere.
- The potential archaeological resource includes nineteenth-century commercial and industrial sites. Archaeological investigations could inform our understanding of how mercantile, manufacturing and industrial activities evolved and contributed to the development of Parramatta within a colonial and global economy.
- Archaeological investigations of this site could also illustrate the lives and unlock the stories of many more individuals and groups of people, including migrants, who through their activities, labour and entrepreneurial endeavours contributed to the cultural history of Parramatta during the nineteenth and early twentieth centuries.

5.3.3 Historical archaeology research questions

The following site-specific archaeological research questions should allow for the investigation results to contribute to major research themes, inform heritage interpretation for the site and link with the broader corpus of interpretation, historical archives and archaeological collections for Parramatta and NSW. The questions are organised by research themes and there are some overlaps between them.

Environment and the colonial landscape

Parramatta's environment had been sustaining people and influencing culture for thousands of years before British colonists established a settlement on the southern banks of the river. Our understanding of this environment is evolving with new information generated from recent and ongoing urban redevelopments and associated archaeological investigations. Evidence suggests that the site was within a wetland area, and this influenced how Aboriginal people and early colonists interacted with the environment at this location. Recent archaeological investigations at Parramatta Square identified that the area on the southern side of Macquarie Street was flood-prone and required significant water management responses during the nineteenth century. The landscape and local environmental conditions influence how the site was developed and occupied in the early years of settlement.

The archaeology can provide further information about the environment and answer the following questions:

- What was the pre-colonial environment and extent of biodiversity in Parramatta? How does the evidence from paleoenvironmental data from this site, and surrounding sites, compare to early colonial accounts and representations of the landscape?
- How did the existing environmental conditions influence the early colonial settlement and development of the site? How were they considered, or ignored, when laying out the town grid and allotments? Did they contribute to the delayed formation of Macquarie Street and adjacent allotments?
- How did individuals (or groups) adapt or respond to the conditions and ‘improve’ their allotments during the early convict and colonial period? How successful were the improvements and how does this compare to other parts of town?
- How did colonial government policy facilitate the improvement process and how did this change over time? How were the policies and outcomes specific to Parramatta? What parallels could be drawn with other early colonial settlements and towns?

Contact

There is a growing number of contact period sites being identified as part of development projects in Parramatta. Archaeological investigations can provide evidence relating to continuity of traditions and technological adaptation.

- What evidence is there about the lives of Aboriginal people and the nature of interactions with the colonists during the contact period?

Convicts and free settlers

The site has the potential to contain archaeological remains of up to five (or six) convict huts—four fronting George Street, one fronting Church Street and possibly one later hut (potentially for a free occupant) set back from the Macquarie Street frontage. The allotments and huts were soon subdivided and occupied by free settlers and emancipists from England and Ireland, and by some who were born in the colony. Archaeological investigations have found it hard to distinguish between the material evidence of convicts and free occupants in the early decades of the colonial period.

- What is the evidence for the original convict hut structures—building materials, construction techniques, internal layout, additions and ancillary structures—and spatial arrangements within the allotments? What are the variations between the huts within the site and elsewhere in Parramatta?
- Are the huts fronting Church Street those identified in early colonial accounts as being designed to house unmarried female convicts? How do spaces designed for women differ from those designed to house men or convict families? What are the differences in material culture and living conditions of female and male convicts during this early convict phase, and how does this compare to later convict phases?
- Is the structure depicted at the rear of a Macquarie Street allotment on the 1804 plan a convict hut? How does the construction, form and layout compare to other convict huts and what can

- this tell us about the original occupants? Is this William Bateman's cottage or is this likely to have been elsewhere in the allotment?
- How were the huts adapted or redeveloped by free occupants? What are the variations between the allotments and subdivisions? How did 'frontier' life affect the way free settlers developed their land and lived in early colonial Parramatta?
 - What is the evidence for crop cultivation, dairying and animal husbandry across the site in the convict and early colonial period? How did the environment and climate influence this agricultural activity? Have similar patterns been identified in other parts of Parramatta? What changes occurred as the lots are subdivided and developed in the early to mid-nineteenth century?
 - What can the archaeological evidence of the huts, allotments and activities within them tell us about convict life? How does this differ to that of the free occupants of the site?
 - How does the eighteenth-century gaol town of Parramatta compare with Sydney Cove, and other penal settlements such as Newcastle, Port Macquarie or Norfolk Island? How does it compare to the later free towns?

Urbanisation

Parramatta evolved from an agricultural and penal settlement to a large successful colonial urban centre. The evolution of the land tenure system and subdivision of the large convict allotment within the centre of town influenced development. The archaeology can provide material evidence of the breakdown of the convict allotment system, occupation and development by free settlers, and the evolution of the modern subdivision pattern. Parramatta was well connected with the colony—by river, road and later rail—and many free immigrants passed through while some stayed. Many of those who stayed worked in the businesses in the town and surrounding suburban areas. Some of those emancipists and free settlers/immigrants, and their families born in the colony, became quite successful and contributed to gentrification, or development of the middle class, in Parramatta. As the town urbanised the rate of development and density within the town centre increased. However, Parramatta remained low-rise with modest redevelopments during boom times in the nineteenth century and most of the twentieth century.

- How were the town allotments developed? What are the variations within the site? How does the development of this neighbourhood compare with other areas of Parramatta?
- How did Parramatta's residents develop their properties and invest in the growing urban centre? Are economic or social differences between occupants/properties on George, Macquarie, Church and Smith Streets represented in the archaeological record?
- How were residents affected by the increasing commercial and industrial development during the nineteenth century?
- What was nineteenth-century domestic life like in the various households within the site? Can the distinction between working-class and middle-class households be easily identified in the archaeological record? How does this site compare with other parts of Parramatta?

- How does the archaeology reflect the evolution of a penal settlement to an established colonial town during the nineteenth century? How does Parramatta compare with other penal settlements such as Port Macquarie, for example?
- To what extent was Parramatta a European place in the nineteenth century? What is the archaeological evidence for ethnic and cultural diversity?

Improvement

Urban development, including residential, commercial and industrial, in Parramatta led to increased populations and pollution. Old colonial amenities and sanitation systems struggled, and in some cases failed. Municipal schemes aimed to improve the environment and prevent disease. The archaeology of Parramatta's sewer and stormwater systems could illustrate a local response to a global issue. Sewerage systems were initially ad hoc as government officers, convicts and free settlers alike were responsible for managing their own waste. A frugal recycling system was likely employed in the early colonial period. Governor Macquarie initiated improvements in the colony, and the town benefitted from municipal services. Convicts built the early town drains; later they were built by private contractors to the colonial government, and in the latter half of the nineteenth century, local government was responsible for the town utilities.

- What types of sewers and stormwater systems were installed in and through the site from the late eighteenth to early twentieth century? How do these compare to types found in adjacent sites and other parts of Parramatta?
- How did individual households dispose of waste? How did this change over time and can variations in practice be detected in the archaeological record? What is the evidence for continued waste disposal within properties after municipal waste disposal services are introduced, and why did this occur?
- What is the archaeological evidence of increasing pollution, poor sanitation and disease as the town urbanised and industrialised? How did governments, businesses and individuals respond to the changing environment?

Commerce and economies

Commercial activity underpins the development of Parramatta as a colonial town and district centre in the nineteenth and early twentieth centuries. Provisions were initially controlled by the government. The river and wharf at the eastern end of George Street were the focal point for the movement of goods in and out of town. Emancipists and free settlers began to transform the town and established many businesses, creating a local economy. The railways and development of the station to the south of the town in the mid-nineteenth century influenced development. Commercial activities shifted from the east–west axis along George Street from the wharf to the north–south axis along Church Street as it connected the town centre to the railway station. The archaeology could demonstrate the evolution of mercantile and commercial development of Parramatta, and how the local economy was linked to colonial and global market conditions.

- Did convicts carry out work at home? How did they participate in commercial life?

- What is the archaeological evidence for mercantile activities within the site through the nineteenth century? Are there distinct phases and can the shift in focus to Church Street in the latter half of the nineteenth century be identified in the archaeological record?
- How did the colonial and global economic conditions of the 1840s and 1890s affect commercial activity and development within the site?
- Does the material culture reflect trends in the supply of goods locally and throughout the colonies? Were Parramatta residents buying supplies from local merchants? What does this tell us about economic developments in the colonial and global marketplaces?
- Was Parramatta fashionable or was it more like a provincial town during the nineteenth century? How does it compare with Sydney or other colonial towns of similar size?

Industry and manufacturing

A range of industrial and manufacturing businesses are documented within the site, such as coach builders, ironworks, printworks, and a timber mill or steam joinery. The site is likely to have also contained undocumented cottage industries or manufacturing businesses. Archaeological evidence from the site has the potential to address questions regarding technological development, the local economy, and the impact of industry on the town and its residents.

- Is there evidence for cottage crafts or other undocumented professions or industry occurring within the site? What does this reveal about Parramatta's economy?
- What is the spatial layout of the industrial and/or manufacturing businesses? Is there evidence for change over time and how does this compare to sites across Sydney and/or NSW?
- Is there evidence for the importation or adaptation of overseas technologies? What evidence is there for local innovations or the development of new technologies?
- Can the archaeology tell us about the evolution of businesses from sole traders to large-scale employers, such as Ritchie's Ironworks? What does this tell us about the development of industry and manufacturing in Parramatta, particularly during the mid-late nineteenth century?
- Does the archaeology show evidence of the impact of the 1890s depression on industrial and manufacturing businesses? What impact did this have on the development of new industrial or manufacturing businesses within the site?
- How did being located in the centre of Parramatta help or hinder industrial and manufacturing businesses during the nineteenth and early twentieth centuries?
- Is there evidence for a distinct material culture associated with residents and/or workers at industrial or manufacturing businesses? Is this associated with the construction of a group identity and does this conform or subvert social norms expressed by other residents across the site?
- Was Parramatta an industrial town? How does it compare with other towns and cities of a similar historical context in terms of its industry and manufacturing?

Material culture

Historical accounts of life in the colonial settlement of Parramatta vary from prosaic descriptions of building numbers and types, occupancy rates and crop yields, to the idyllic and picturesque views of an ordered and abundant landscape, subdivided and cultivated. The everyday lives of convicts, emancipists, free settlers, the Aboriginal people who continued to live in the town, the migrants and the generations of homegrown residents that followed in the nineteenth century were rarely recorded in official accounts. Artefacts present tangible evidence of daily activities and offer the potential to illustrate the true nature of the lived experience of these individuals. They can reveal clues about colonial diet, health and hygiene, clothing, recreation and pastimes, cottage industries, household economics, and cultural, class or religious identity. They can also illustrate and provide insight into the development of local manufacturing and industry; local, colonial and international trade; and patterns of consumerism in a globalised market.

- What does the material culture from the site reveal about household composition and organisation in Parramatta in the colonial period? Is there a notable change in artefacts associated with the occupation of convict huts and later occupants? Are there significant differences in contemporaneous households of any phase?
- Can the material culture from the site be associated with identifiable ethnic, class or religious groups or genders? Is this material culture similar or different across the groups? Could these differences be interpreted as expressions of group identity? How do these expressions differ across the site and over time? What does this tell us about the experience of women, migrants, the working poor and those from religious minorities living in Parramatta?
- Can the material culture be linked to individual occupants on site? What does this tell us about their daily life or aspirations?
- What does the material culture tell us about consumerism and changing tastes in the nineteenth and early twentieth centuries? Is there an archaeological signature for Parramatta? Is there an improvement in quality of goods over this time?
- Does the material culture reflect trends in the supply of goods locally and throughout the colonies? Were Parramatta residents buying supplies from local merchants? What does this tell us about economic developments in the colonial and global marketplaces?

5.4 Endnotes

- ¹ Parker M 2006, *Rethinking the Convict Huts of Parramatta: An Archaeology of Transformation (1790-1841)*, unpublished honours thesis, University of Sydney.
- ² Casey M and Hendrickson G eds. 2009, *Breaking the Shackles: Historical Lives in Parramatta's Archaeological Landscape*, Parramatta Heritage Centre and Casey & Lowe, Parramatta.
- ³ Research undertaken by Caitlin D'Gluyas, a PhD candidate at UNE, and presented at the 2018 ASHA conference in Parramatta.
- ⁴ GML Heritage 2018, *City of Parramatta Archaeological Collection, Stage 2 Management Framework*, report prepared for City of Parramatta.

Archaeological Methodology

GML
HERITAGE

6 Archaeological investigation methodology

6.1 Overview

The archaeological investigation will be guided by the research framework presented in Section 5. The following methodology is in accordance with best practice and the requirements of the CoA. It includes a methodology for early investigations to inform archaeological management and salvage excavations for the project. Details of archaeological excavation methods, recording and artefact retrieval are provided. It also includes an integrated approach to historical and Aboriginal archaeological excavations. This section also includes the framework for post-excavation analysis, research and reporting requirements. A strategy for public outcomes and interpretation is also provided.

Archaeological investigations of the Parramatta station construction site will be undertaken in stages responding to the construction program and project staging (refer to Section 1.1.1). This methodology applies for all construction and project stages where archaeological impacts are proposed. It includes summary information from the archaeological methodology section of the Aboriginal Heritage Report—refer to that document for the detailed Aboriginal archaeology methodologies.¹

6.1.1 Archaeological investigations

The archaeological investigations will consist of three components:

- **Fieldwork**—the fieldwork will include a combination of site inspection, archaeological testing, salvage excavation and monitoring. The fieldwork also includes spatial data collection, archaeological recording and photography, artefact retrieval and processing, environmental sampling, and public engagement activities.
- **Post-excavation analysis**—post-excavation analysis will include stratigraphic analysis, artefact cataloguing and analysis, specialist and scientific analysis, preparation of technical reports and detailed phased site plans. The archaeological records will be collated and digitised during initial stages of post-excavation. This stage will also include preparation of preliminary excavation results reports. It may also include preparation of archaeological input to public engagement activities and heritage interpretation.
- **Reporting**—reporting will be undertaken in stages and include preparation of test excavation results, preliminary excavation results and a final excavation report. The final report will include the detailed descriptions of the archaeology, additional historical research, archaeological analysis of findings, a detailed response to the research questions, reassessment of the significance of the archaeological collection, and provision of details regarding the archaeological interpretation outcomes.

6.1.2 Managing archaeological significance

Historical archaeology in NSW is managed in accordance with its heritage significance. Significance is assessed using the Heritage Council of NSW criteria and the archaeological significance assessment guidelines published by the Heritage Council of NSW. Archaeology may be of either local or state significance, or may not reach significance thresholds. The significance of the site's potential historical archaeology is identified in Section 4.9. The Excavation Director will review historical archaeological

significance assessment findings throughout testing and salvage excavations and adjust methodologies and approach to respond to changes in the assessed level where needed.

Management and mitigation strategies for historical archaeology affected by the construction works at the site are informed by the significance of the resource. State significant archaeology requires a high level of archaeological management input—early investigations to inform the salvage excavation approach and identify opportunities for conservation in situ, relocation or interpretation, followed by more detailed archaeological excavation, post-excavation analysis and interpretation. Locally significant archaeology requires archaeological management, detailed excavation, analysis and interpretation to mitigate impacts. However, the detailed salvage excavation may include an area sampling approach (for large areas of mixed historic fills or garden soils, for example). Further details on the excavation methodologies are provided in Sections 6.3 and 6.5.

6.1.3 RAP involvement in archaeological excavations

Representatives of the Registered Aboriginal Parties (RAPs) with suitable relevant experience will be engaged by the proponent to collaborate in the archaeological works during the Aboriginal archaeological investigations. The numbers of representatives should be appropriate to the workload on site. The involvement of RAPs in the work will be determined by Sydney Metro.

6.1.4 Public outcomes and interpretation

Archaeology has an ability to capture the public imagination. Interpreting the archaeology, contributing to historical knowledge and creating a public archive for future research are the principal aims of archaeological investigation to mitigate development impacts.

Information about the archaeology will be made available to the public throughout the investigation program. Methods could include providing leaflets, publishing excavation and findings updates (online via a website or social media platforms, and/or via mainstream news media), holding webinars, and organising public open days during the fieldwork. Other opportunities include presentations to special interest groups, papers at conferences and publications, usually during the post-excavation analysis and reporting stages when more detailed research findings are available.

Interpretation within the new station and associated development also presents an opportunity for public archaeology outcomes. This could include displays of conserved archaeology and artefacts. Other opportunities that could reach a wider audience include creating an online digital exhibition of the archaeology, the excavation process, and key artefacts. Results from ongoing excavations and post-excavation analysis can be used to inform interpretation planning as the design (station and associated developments) are being developed.

A public archaeology strategy is provided in Section 6.19.

6.1.5 Historical archaeological collections

The archaeological collection—artefacts, archived samples, excavation records and catalogues—generated from investigations at the Parramatta station construction site will require management. Collection management and public access is included in Conditions D28 and D30.

- Sydney Metro is responsible for the long-term care and storage of the archaeological collection.
 - The contractor will be responsible for providing secure storage on site during archaeological excavations.

- The archaeologist (and specialists) will provide temporary storage at their office (or lab) during post-excavation analysis and reporting.
- The collection will be returned to Sydney Metro once post-excavation analysis and reporting is completed.
- A repository will need to be nominated for the ongoing care and storage of the physical archaeological collection. A copy of the final excavation report must be included with the physical collection.
- Significant finds and artefacts will need to be included in interpretation and display within the new metro station or associated public domain.
- A digital archaeological collection will also be made available online to allow for public access. The digital collection should include the excavation records, excavation reports and digital display of significant artefacts and finds. This publication/display could be arranged in collaboration with the City of Parramatta and its heritage centre.
- Details of the location and conservation of the archaeological collection must be included in the final report.

6.1.6 Aboriginal archaeological collections

All Aboriginal archaeological materials and soil samples would be temporarily stored in an appropriate place, which would initially be the archaeologist’s office, or a relevant analyst’s laboratory or office. Once the analysis is complete the collection would be transferred to a suitable Sydney Metro site, and/or other location approved by Sydney Metro, for ongoing curation. It is the responsibility of Sydney Metro to develop an appropriate future management strategy for any Aboriginal artefacts recovered from the site in collaboration with the project’s RAPs.

6.1.7 Archaeological investigation team

The archaeological investigation will be led by Excavation Directors approved under Condition 27— Abi Cryerhall (historical archaeology Primary Excavation Director), Sophie Jennings (historical archaeology Secondary Excavation Director) and Dr Tim Owen (Aboriginal archaeology Excavation Director). The Excavation Directors will be responsible for the overall archaeological program including excavations, post-excavation analysis and final reporting.

The team will include a Site Director/Secondary Excavation Director (or multiple) as the construction program will likely require archaeological excavations in concurrent areas and over extended day shift hours, night shifts and weekends for many months (or years depending on the project staging).

The archaeological fieldwork team will include experienced site supervisors, specialist archaeological surveyors and planners, artefact specialist and supervisor, archaeologists, archaeological and artefact assistants, a geomorphologist/sedimentologist and an interpretation specialist for public engagement activities. Aboriginal archaeological excavations will also include site officers from the project RAPs.

In addition, various other specialists will be included in the team for the post-excavation and reporting stage. These include a historian, lithics specialist, palynologist, faunal remains specialist, shell specialist, building materials specialist, and specialists to undertake C14 and OSL dating.

Other specialists may be required depending on the archaeological findings, such as a materials conservator or a physical anthropologist.

6.2 Program and logistics

Most of the site has potential for archaeology. Disturbance of the ground below current slabs or surfaces will trigger archaeological investigation requirements. The archaeological investigation methodology needs to be responsive to the construction program for Stage 1 works (ie the current project approval) and suitable for future project stages. It needs to be flexible, adaptable and efficient. Early investigations are crucial for identifying archaeology with complex phasing to inform salvage excavations and their integration with construction programs, conservation and interpretation planning. Early investigations of state significant archaeology would also inform a review to consider options for conservation, relocation or interpretation.

6.2.1 Construction impacts

The Stage 1 enabling and major civil works, including the station box excavation and other works across the whole site, are approved (Figure 6.1). Excavation and ground disturbances associated with the State 1 works are extensive—these are identified in Section 6.2.2 below. Future project stages include station construction, integrated station development and civic links. Construction works will likely require removal of most, if not all, archaeology within the site boundary.

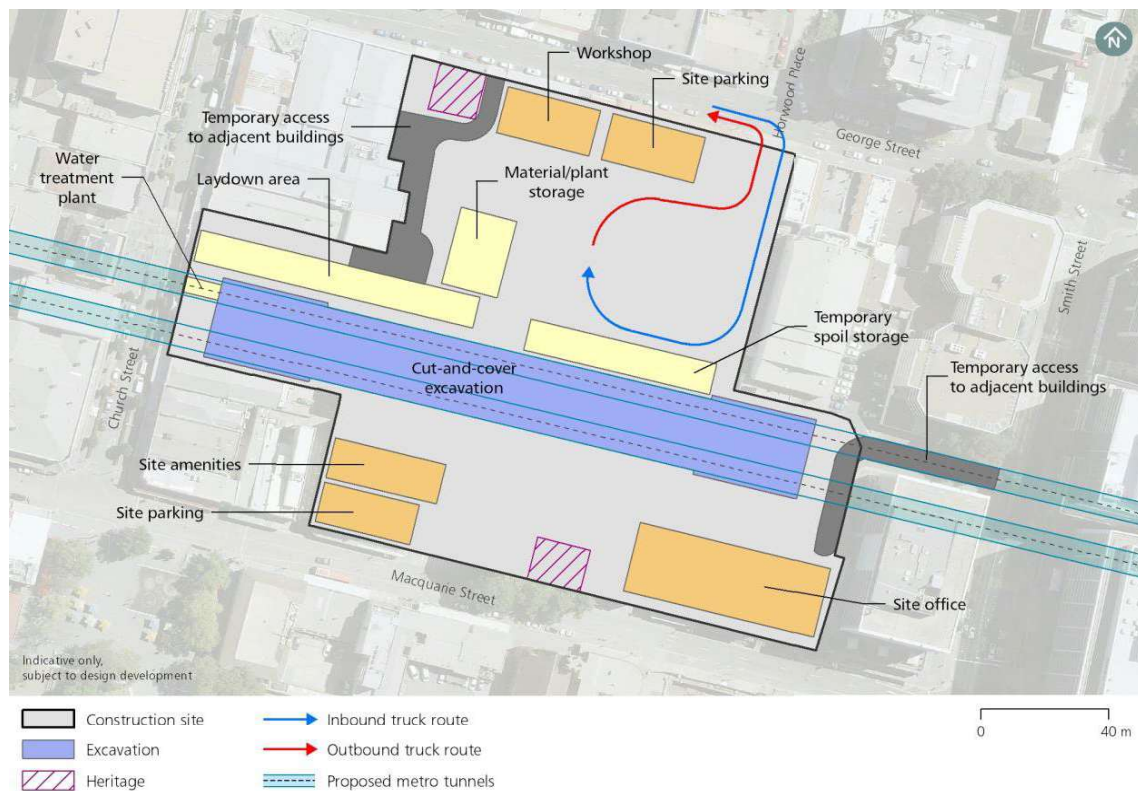


Figure 6.1 Parramatta metro station construction site with the station box and general site layout for the Stage 1 works. (Source: Artefact 2019, Figure 3)

6.2.2 Construction program

Construction at the site will be in stages and the activities involving archaeological impacts are identified in Table 6.1 below. The table refers to construction activities being undertaken within an area prior to archaeological clearance (refer to Section 6.11). All archaeological fieldwork methods identified in the table below also include archaeological recording, post-excavation analysis and reporting. The table is intended to provide a summary and quick reference to the archaeological method that applies to the various construction activities. The detailed methods and how they are applied during fieldwork are provided in Sections 6.3 to 6.13.

Table 6.1 Construction activities and associated archaeological fieldwork methods.

Construction activity	Archaeological fieldwork method
Service investigations within previously disturbed areas (ie existing trench alignments).	Unexpected finds procedure.
Removal of services/substations/trees.	Monitoring where excavation outside previously disturbed areas is anticipated.
Geotechnical and contamination testing boreholes/test pits.	Relocate away from convict hut locations, and areas of high or known archaeology. Supply data for archaeological analysis. Unexpected finds procedure—for geotechnical/contamination boreholes. Monitoring—for geotechnical/contamination test pits.
Demolition to slab/current ground surface.	Unexpected finds procedure.
Excavation for new service installations (temporary, relocations and diversions).	Test excavation. Salvage excavation or monitoring (depending on testing results). Monitoring if minor or shallow excavations not expected to impact archaeological layers.
Removal of slab/ground surface/inground structures/footings/services.	Monitoring. Triggers archaeological investigation requirements.
Excavation below slab/ground surface including: <ul style="list-style-type: none"> - roads and pedestrian walkways (temporary, haul, relocations, new) - new surfaces for site facilities, laydown areas, turning circles etc - remediation/contamination removal - footings/penetrations for site facilities, structures, fencing - sediment ponds, slurry pits, wheel wash areas, drainage, services etc - piling and associated works. 	Test excavation. Salvage excavation. Monitoring if localised or shallow excavations are proposed in areas of potential and are not expected to impact significant archaeology. Review for opportunities for conservation/relocation/interpretation of state significant archaeology and Town Drain prior to salvage excavation.
Station box excavation.	Test excavation. Salvage excavation.

6.2.3 Archaeological fieldwork program

The archaeological fieldwork program will include a combination of test excavation, large-scale open-area salvage excavations, localised (or small-scale) salvage excavations, and monitoring and recording of minor or low impact works. It will be undertaken in stages and in accordance with the construction program and project priorities. Figure 6.2 illustrates the general project priority areas that will influence the archaeological program. These areas will be further divided in response to the construction program and as access to undertake the archaeological investigations is provided. Table 6.2 provides an indicative archaeological program for each area. This may change as information about the archaeology (from testing or monitoring) and the detailed construction program becomes available, and as design develops.

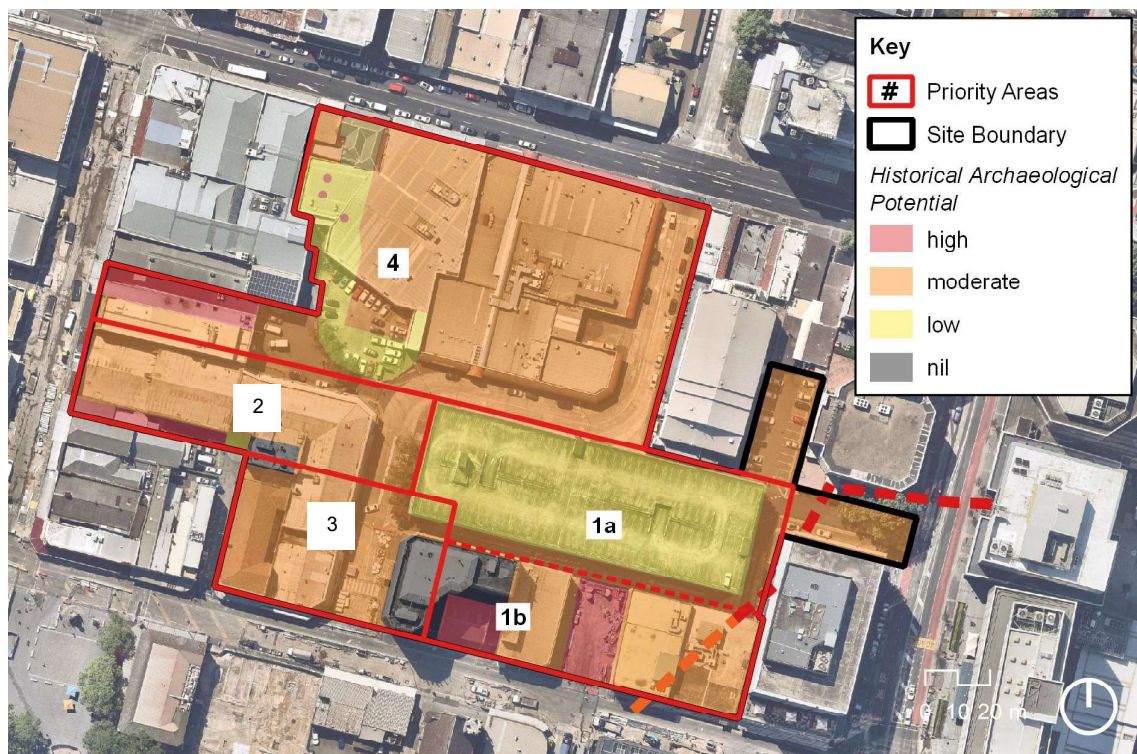


Figure 6.2 Project priority areas and general sequence for archaeological investigations. (Source: Nearnmap with GML additions and priority areas supplied by Sydney Metro 2021)

Table 6.2 General archaeological fieldwork program in response to construction works.

Stage	Archaeological program
Enabling works - All site locations as required.	<ul style="list-style-type: none"> Monitoring of localised excavations for decommissioning/removal of substations and services. Monitoring of excavations and ground disturbance for geotechnical test pits, tree stump removal, removal of ground slab/surfaces, footings or services. Test excavation (followed by salvage or monitoring) for the temporary HV alignment and other required service relocations.
Area 1A	<ul style="list-style-type: none"> Test excavation for historical and Aboriginal archaeology. Expansion for salvage excavations where required.

Stage	Archaeological program
- Station box excavation footprint.	<ul style="list-style-type: none"> • Monitor removal of ground slab and fills to culturally sterile deposits. • Access for archaeological investigations will be determined by the demolition program.
Area 1B - Road relocation and site facilities.	<ul style="list-style-type: none"> • Test excavation for Town Drain, historical and Aboriginal archaeology, followed by review for conservation, interpretation or opportunities where required. • Expansion to open-area salvage excavation (historical archaeology) of entire area and for Aboriginal archaeology where required. • Excludes listed heritage item curtilage as impacts not proposed. • Access for archaeological investigations will be determined by the demolition program.
Area 2 - Station box excavation footprint and associated works.	<ul style="list-style-type: none"> • Test excavation for historical and Aboriginal archaeology. • Expansion to open-area salvage excavation (historical archaeology) of entire area and for Aboriginal archaeology where required. • Includes salvage excavation to Church Street frontage (to capture the full extent of significant archaeology expected in this area beyond the western end of the station box). May also expand north to include all Church Street properties.
Area 3 - Site amenities, parking and road.	<ul style="list-style-type: none"> • Localised archaeological excavation / monitoring where service relocations and localised/minor penetrations for temporary above-ground structures are required prior to open-area salvage excavations. • Test excavation for historical and Aboriginal archaeology. • Expansion to open-area salvage excavation (historical archaeology) and for Aboriginal archaeology where required. • May include multiple smaller-scale open-area salvage excavations as required by the construction program. • Monitoring of bulk excavations in area of nil potential to confirm assessment.
Area 4 - Temporary road, pedestrian walkway, workshop, plant storage, parking and turning area.	<ul style="list-style-type: none"> • Localised archaeological excavation / monitoring where service relocations and localised/minor penetrations for temporary above-ground structures are required prior to open-area salvage excavations. • Test excavation for historical and Aboriginal archaeology, followed by review for conservation, interpretation or opportunities where required.. • Expansion to open-area salvage excavations (historical archaeology) and for Aboriginal archaeology where required. • May include multiple smaller-scale open-area salvage excavations as required by the construction program and access requirements. • Monitoring bulk excavations in areas of nil potential to confirm assessment.

6.2.4 Archaeological heritage induction for construction personnel

An archaeological heritage induction will be provided to construction personnel and contractors. The induction will outline the requirements of the project approval, the environmental management measures, the archaeological program and the role of the archaeologist on site. It will also include the Sydney Metro unexpected finds procedure.

6.2.5 Archaeology workspace, facilities and logistics

The archaeological investigations will require the following support from the contractor:

- General site facilities for the archaeological team—COVID-safe toilets and washroom, lunchroom, changeroom etc.
- A COVID-safe dedicated office space on site for the archaeology team to process excavation data during excavations.
- A secure storage container for equipment and tools for the duration of the archaeological fieldwork.
- A secure facility to process (wash and dry) and temporarily store artefacts during the archaeological excavations.
- A wet sieving station area with access to high-pressure water and a vac truck to empty wastewater and slurry.
- A mechanical excavator with a flat bucket and operator dedicated to the archaeological team during excavations. The machine size may vary depending on the stage of work—larger machine for bulk removal of modern surfaces/fills and smaller machine for detail work within archaeological layers. Multiple machines may also be required for large open-area salvage excavations.
- Spoil management, management of contaminated materials and unexpected finds.

6.2.6 Safe work and conditions

A safe work environment must be provided for archaeological excavation. This includes providing a work environment that adheres to COVID-19 public health orders. Excavation areas must be delineated with physical barriers (temporary fencing, crowd control barriers or similar) from other construction activities. All services within excavation areas must be disconnected. Hazardous materials, if present, must be removed without impact to surrounding archaeological deposits.

Rain, extreme heat or wind, presence of live services, contaminants and poor lighting can affect the ability to undertake archaeological work safely and appropriately. COVID-19 public health order requirements may also affect archaeological work. Excavation cannot be undertaken in wet conditions or poor lighting where it could impact archaeology or limit the ability to apply the methods of this ARD. Suction pumps may be used to expedite drying of ground conditions following rain events. Day makers may provide adequate lighting for localised archaeological works during night shifts depending on the nature of that work and the archaeological method required. The Excavation Director(s) will determine what archaeological works can occur during night shifts.

6.3 Test excavation

Early investigation in the form of archaeological test excavation will be undertaken for both historical and Aboriginal archaeology. Test excavation involves excavation of small test pits, linear test trenches or small sample areas within a wider area suspected or known to contain archaeology. Test excavation is undertaken to determine the location, nature and extent of the archaeology. ‘Nature’ means type of archaeology, phasing and complexity, level of previous impact, ability to answer research questions, and significance.

Testing will be undertaken in stages with the construction program and when there is access. It will likely follow the priorities and archaeological program outlined in Section 6.2.3. Aboriginal

archaeological work will occur both concurrently with the historical archaeology testing and/or during historical salvage excavations, as and when zones for Aboriginal testing/salvage become available. Archaeological testing (both Aboriginal and historical) will only occur where construction impacts are proposed.

6.3.1 Contamination testing

Early geotechnical and contamination testing is required at the site. This involves excavation of small test pits across the site to collect samples, identify locations of potential contaminants and pre-classification of soils prior major excavations, such as for archaeological investigations. Contamination testing provides an opportunity to also collect useful archaeological data, such as depth locations and likely extent across the site.

- Excavation Director(s) will review the contamination test pit locations to ensure they are not within sensitive archaeological areas, such as locations of convict huts or other structures or features recorded on historic maps. This will be undertaken in consultation with the project hygienist and others as required.
- Excavation of contamination test pits will be monitored and recorded by an archaeologist. This information will inform the historical and Aboriginal archaeological test excavations. Refer to Section 6.6 for the archaeological monitoring methodology. Refer to the Aboriginal Heritage Report for further details on the Aboriginal archaeological methodology.
- If archaeological features or artefact deposits are encountered during excavation, localised salvage excavation would be undertaken if appropriate to do so or the test pit would be relocated to avoid impact if required.

6.3.2 Historical archaeology test excavation

Test excavation within areas identified with potential for state significant archaeology, the Parramatta Convict Drain alignment, and areas of proposed construction impact will be undertaken.

Aims

The aims of the test excavation are outlined below.

- Ground-truth the archaeological assessment findings and determine if significant archaeology relating to the historical development of the site is present or likely to be present.
- Determine if:
 - state significant archaeology relating to the convict and early colonial occupation of the site is present or likely to be present
 - the Parramatta Convict Drain survives and whether there is associated archaeology (such as an earlier watercourse, artefact deposits etc)
 - inform decisions regarding potential conservation and retention of state significant archaeology and the Town Drain—either in situ or relocated—for the project.
- Inform the archaeological salvage excavation strategy and its integration with the construction program, post-excavation analysis and reporting requirements, and interpretation planning.

Locations

Indicative test trench locations are illustrated in Figure 6.3. The location, number and size of test trenches within these areas will be refined following demolition, further information regarding site conditions (locations of services, previous impacts, access etc) and construction program are known. Typically, the test trenches will form three types based on the potential archaeology and testing aims:

- Type A—10 metres x 10 metres for convict hut locations (larger to allow for recorded location discrepancies and interpretation of multiple recorded building phases).
- Type B—10 metres x 2 metres (with extensions forming L or T shape trenches) for yard areas (linear to allow for identification of phasing represented in yard deposits and potential for/frequency of unrecorded features such as rubbish pits).
- Type C—5 metres x 2 metres (or as adjusted) for the Town Drain alignment or targeting recorded features on historical plans such as outhouses/cisterns (smaller to target specific features recorded on plans).

Adjustments to the test excavation areas, trench locations and number of trenches may need to occur to respond to findings during testing. Test trenches would be expanded or relocated as required to meet the aims of the test excavation. Aboriginal archaeological test units will be co-located where possible.

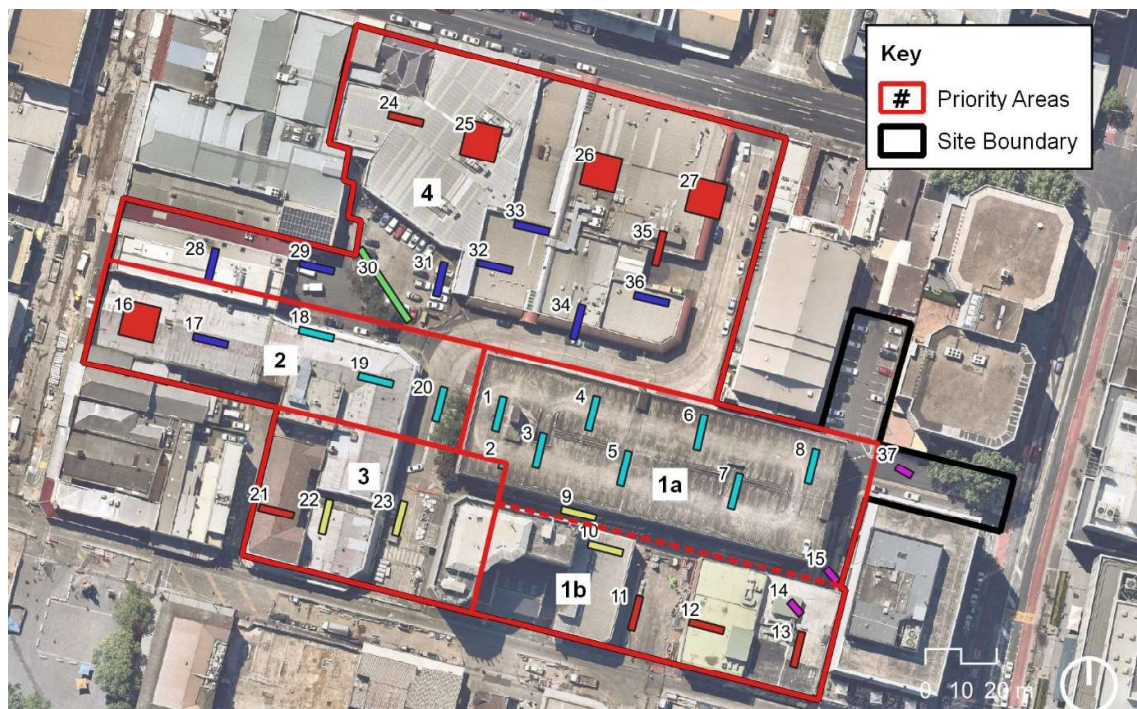


Figure 6.3 Indicative historical archaeology test trench locations on a modern aerial photograph. (Source: Nearmap with GML overlay)



Figure 6.4 Indicative historical archaeological test trench locations on the 1895 plan and overlay of structure and features recorded on the 1792, 1804, 1823, 1844 and 1954 plans. (Source: SLNSW with GML overlay)

Methods

- The test trench locations illustrated in Figure 6.3 and Figure 6.4 will be set out by the archaeological surveyor and adjusted to site conditions and archaeological potential as needed. Where possible the test trenches will be located within the 1-metre grid established for the project (refer to Section 6.7).
- A combination of mechanical and hand excavation will be used to excavate test trenches. Modern surface material and fills will be removed by machine to the top of archaeological layers. All mechanical excavation during testing will be under archaeological supervision. The team will clean and investigate the archaeological remains by hand.
- Excavation and removal of locally significant archaeological deposits within the test trenches will occur only where needed to determine the nature and extent of the archaeology and to facilitate the Aboriginal archaeological test excavation.
- Archaeological excavation of state significant archaeology, or wells, cesspits, and suspected underfloor or significant occupation-related deposits of either local or state significance, will not occur during the testing phase. Small sondages within such deposits may be excavated to confirm the significance and identification of the archaeology.
- If Aboriginal archaeological deposits or objects are encountered during excavation, the appropriate management will be determined in consultation with the Aboriginal archaeology Excavation Director.

- During the test excavation archaeological recording (Section 6.8), artefact retrieval (Section 6.9) and sampling (Section 6.10) will be undertaken.
- Post-excavation analysis (Section 6.14) will be undertaken and a report on the test excavation results prepared or incorporated into the preliminary and final report as appropriate (Section 6.16).

Expansion to salvage excavation

In some areas the testing phase will likely expand to salvage excavation without a break in the archaeological program. This will occur for the station box excavation areas (Areas 1a and 2 in Figure 6.3). Expansion to salvage following testing in other areas may be necessary to salvage locally significant archaeology, reveal areas with potential for state significant archaeology located below later phases of archaeology and to facilitate the Aboriginal archaeological excavation program. The Excavation Director will determine and confirm the approach to salvage, and whether other steps such as the conservation and/or interpretation review process outlined in Section 6.4 are required, based on results during excavations.

6.3.3 Aboriginal archaeology test excavation

A detailed methodology for Aboriginal heritage is provided in the Aboriginal Heritage Report.² A summary is provided below. Aboriginal archaeology testing will occur after historical archaeological excavation has been completed in the test location. Representatives from the project RAPs will be involved in Aboriginal archaeological test excavation.

Aims

- Undertake initial sedimentology testing (hand coring) to clarify and refine areas with potential for intact soil landscapes, and thus Aboriginal archaeological deposits.
- Locate Aboriginal archaeological test units in areas that will be subject to impact from the proposed works, that have archaeological potential, and that can be excavated in a scientific manner. A systematic indicative grid at 20 metre spacing has been proposed. These locations and spacing will be refined to respond to both site conditions, sampling locations and sufficient coverage to define the nature and extent of Aboriginal archaeology—refer below.
- A sufficient sample of the site is tested to identify whether an extensive or informative archaeological deposit is present.
- Identify salvage excavation requirements to recover a representative sample of that archaeological deposit.

Locations

Testing will be based on a 20-metre sampling pattern. An indicative pattern for test excavation is proposed (Figure 6.5). Additional test units (TUs) could be placed on a smaller 10-metre grid to confirm the nature and extent of the deposit in any single location, and/or provide additional sampling in areas with archaeological potential and good condition natural soil profiles. The need for additional test units would be determined by the Aboriginal archaeology Excavation Director, following completion of the initial sampling. Each TU will be 1 metre x 1 metre and set out on the site grid for

overall spatial control (refer to Section 6.7). The location of each TU can be moved to avoid dangers, services, contamination, built features and/or prior impacts and significant historical archaeology.

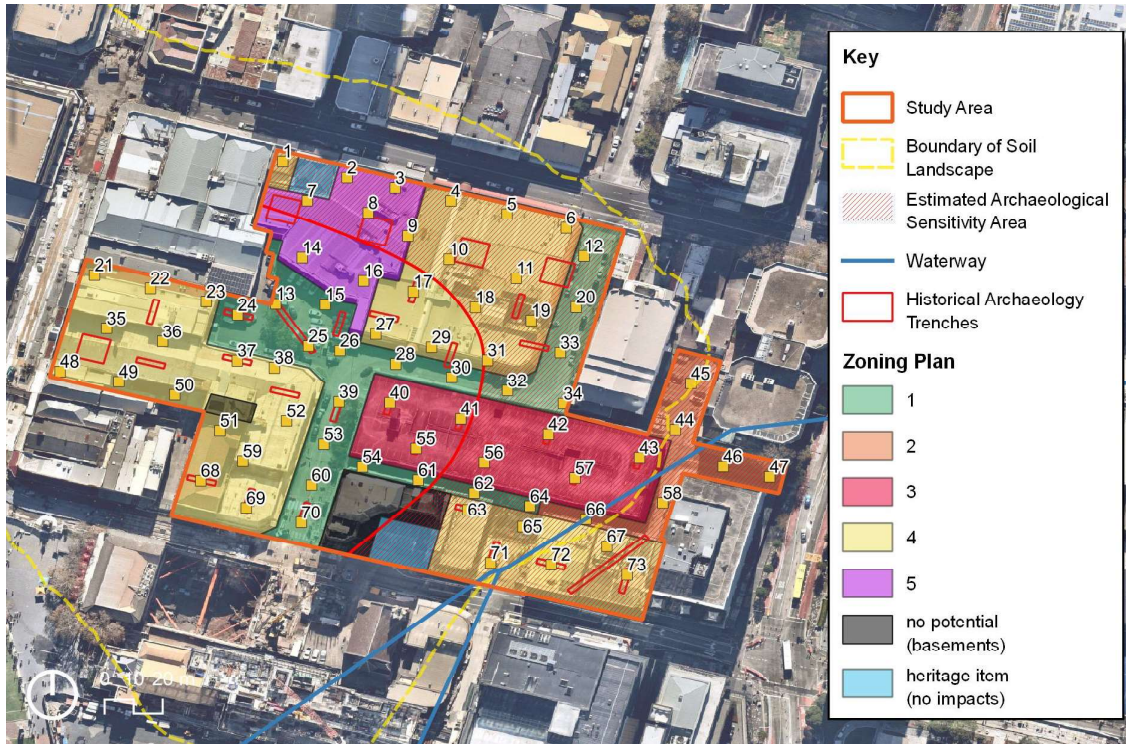


Figure 6.5 Proposed Aboriginal archaeological sampling grid. (Source: Nearmap with GML overlay)

Methods

- Sedimentology testing using a hand auger and recording of the sedimentary profile.
- Archaeological TUs will be 1 metre x 1 metre and excavated to a sterile soil horizon—B horizon basal clay. Sub-500 millimetre excavation units could be used for some TUs, but this will be determined by the Excavation Director.
- Excavation will be undertaken in 50-millimetre spits, and/or by natural stratigraphy.
- Any archaeological feature identified will be excavated according to its stratigraphy.
- TUs can be expanded to capture the extent of an archaeological feature.
- All features will be sampled for carbon and soil deposits. These may be subject to specialist analysis during the post-excavation phase.
- A representative sample of test trenches will be sampled for soil, which may be used for future palynology, sedimentology and OSL dating.
- All archaeologically excavated deposits will be wet sieved through a 3-millimetre mesh. Sieving can occur on or off site, and can be undertaken using a water cart or high-pressure water source, into skip bins, which can be emptied as required.

- Further TUs could be placed to confirm the nature and extent of the deposit in any single location.
- Machine excavation may be required in areas where deep soil profiles cannot be accessed and hand excavated safely, and/or have associations with contaminated soils. Any machine excavation would be with a flat bucket (1.2 metres wide) in 100-millimetre spits and the machine excavated spoil would be wet sieved.
- All Aboriginal lithics from the test excavation will be retained for analysis. Initial analysis will occur on site and inform the placement of additional test pits, as may be necessary, and the extent of proposed salvage excavations.
- Historical artefacts from wet sieving will be subject to the artefact retrieval and sample strategy (Sections 6.9 and 6.10). Decisions regarding retention will be made by the historical archaeology Excavation Director and the Aboriginal archaeological excavation director, noting that some historical artefact types may be Aboriginal objects. Excavation context and morphology will be used to inform these decisions.
- If historical archaeological features or deposits are encountered during excavation, the appropriate management will be determined in consultation with the historical archaeology Excavation Director.

6.4 State significant archaeology conservation review

The opportunity to conserve archaeology in situ is likely limited. There are other conservation opportunities that can also be considered, such as removal and reconstruction or interpretation. Test excavation results (following testing or potentially during wider salvage excavations) will inform a review to identify opportunities to conserve, interpret, record in greater detail or provide public access to state significant archaeology. The review will be undertaken by Sydney Metro, the contractor, the archaeological consultant (excavation director(s)) and relevant members of the project team. The outcome of the review, where undertaken, will be documented and included in the archaeological reporting in accordance with condition D30. Though assessed as locally significant, the Town Drain will be subject to conservation review in accordance with condition D15 and D30. The outcome of the Town Drain review will be documented and submitted to the Planning Secretary as required by condition D15 and included in the archaeological reporting as required by condition D30.

Questions to consider during the review and decision-making regarding conservation and management of state significant archaeology and the Town Drain:

- Is the archaeology intact and substantial? Would this resource be a good representative example of the archaeology type? Can the archaeology be protected and conserved in situ throughout project stages, current and future?
- Can the archaeology be relocated? If so, how? And would the archaeology still retain its significance?
- Would detailed archaeological excavation, research and interpretation result in a better public benefit?

6.5 Salvage excavation

Salvage excavation of historical and Aboriginal archaeology will be required at the Parramatta station construction site. Construction works include major excavation and disturbance within areas of archaeological potential across the site. The extent of salvage excavation requirements will be confirmed once the test excavation results are known and during design development for the project.

6.5.1 Historical archaeology

Salvage excavation for historical archaeology refers to detailed archaeological excavation and recording undertaken to mitigate construction impacts to archaeological remains. Small localised or large open areas can be subject to salvage excavation depending on the extent of the archaeological site and the proposed impact. It involves the controlled and systematic investigation, recording and removal of archaeological deposits and features through excavation by the archaeological team. It usually involves a combination of excavation by hand and careful mechanical excavation.

General methods

- Mechanical removal of modern fills and overburden to the top of the archaeological layers under archaeological supervision. This will be undertaken by an experienced archaeologist—a site supervisor or Excavation Director.
- Detailed excavation of archaeological features, structural remains and deposits undertaken by the archaeological team using hand tools. Extensive archaeological layers without significant features or in situ artefacts/occupation deposits, such as levelling fills and introduced topsoils, will be mechanically excavated once sample areas have been hand excavated, assessed and recorded.
- A 1-metre grid will be established to allow for spatial control during excavation, artefact collection and recording of intact underfloor deposits, integrated Aboriginal and historical archaeological sites, or contact archaeology sites (Section 6.7).
- Excavation of underfloor deposits will be spatially controlled by context or 50-millimetre spits where there is no stratigraphy. Excavated material will be sieved (wet or dry depending on soil texture) through a 3-millimetre mesh to retrieve artefacts.
- Sealed artefact deposits within rubbish pits or dumps, cesspits and wells will be excavated by context or 100-millimetre spits where there is no stratigraphy. Mechanical excavation and benching may be required if access is constrained and depths are greater than 1.5 metres.
- State significant deposits containing artefacts with high research potential, such as occupation deposits, rubbish pits or dumps, or cesspit and well fills, will be sieved (wet or dry depending on soil texture) through a 3-millimetre mesh to retrieve artefacts.
- Recording of archaeological features, structural remains, deposits and fills will be undertaken using photography, survey, measured drawings and context sheets. The recording system is outlined in Section 6.7.

- Artefacts will be collected by context and processed (washed, dried and bagged) on site, or in a suitable offsite facility provided by Sydney Metro or the principal contractor. The artefact retrieval strategy is outlined in Section 6.9.
- Samples of building material, organic material, soil and pollen will be taken from significant features and deposits for further post-excavation analysis, to inform the response to the research questions and for archival purposes. The sample strategy is outlined in Section 6.10.
- Multiple phases of detailed archaeological excavation and recording may be required to complete the salvage depending on archaeological findings and phases.
- The Excavation Director will provide written clearance once the archaeological salvage excavation is complete and the requirements of the fieldwork component of the ARD have been met (refer to Section 6.11).
- Suitable building materials from the Town Drain, early colonial and state significant archaeological features will be retained and stored for potential re-use and interpretation. Temporary storage areas will need to be provided for any salvaged building material.
- If Aboriginal archaeological deposits or objects are encountered during excavation, the appropriate management will be determined in consultation with the Aboriginal archaeology Excavation Director.

6.5.2 Convict hut locations

There is potential for convict huts within the site. The nature of convict hut archaeology and site formation requires spatial control. Exact hut locations may not be determined until the historical and modified topsoils have been removed. Significant artefacts associated with occupation of the huts are often displaced within the historical topsoils or fills overlying and surrounding the huts. Controlling the excavation of the historical topsoils will allow for these artefacts, and information regarding their spatial relationships, to be gathered.

Excavation of Phase 1 (1788–1820s) historical topsoil deposits (or overlying fills) within predicted convict hut locations (including a buffer to be determined from testing results and during salvage excavations) will be within the 1 metre x 1 metre grid established for the site (refer to Section 6.7). Deposits will be excavated stratigraphically and by context, or in 50-millimetre spits if no stratigraphy is present. The excavated deposits will be sieved through a 3-millimetre mesh. This method assists with integrating historical and Aboriginal archaeological data.

6.5.3 Aboriginal archaeology

The number of ‘sites’ or locations requiring salvage excavation cannot be determined until the outcomes from testing are known. Analysis of the outcomes from test excavation is a process undertaken on site during excavation of each zone. This analysis will be undertaken by the Aboriginal archaeology Excavation Director and used to inform a location-specific salvage methodology. A standard salvage methodology is provided below, and will be tailored according to the nature of the sediment (notably its depth and ability to yield archaeological deposits), and the type of archaeology present (eg Aboriginal objects, features such as cooking pits).

- Archaeological salvage would involve the expansion of relevant TUs identified with a deposit capable of addressing the project's research questions. The expansion of all TUs would be in 1 metre x 1 metre squares; these may be subdivided and excavated as 50 centimetre x 50 centimetre sub-squares. The initial expansion is likely to be into 9m² areas.
- The requirement for salvage excavation, the nature of TU expansion, and the extent of expansion would be determined by the Aboriginal archaeological Excavation Director in consultation with the project RAPs on site.
- Excavation in each area will continue to the margins of the archaeological deposit (if Phase 1 and/or 3—refer to Section 3.3.1), and/or until artefact densities fall below 10/m² (on the basis of compressing artefact numbers from all excavated spits).
- Should the archaeological deposit be extensive, salvage excavation may be limited once a culturally and scientifically appropriate sample has been recovered. Parameters defining these measures would need to be discussed by the archaeological Excavation Director, on-site project RAPs, and a representative from Sydney Metro. Emphasis will be placed on recovery of intact archaeological deposits; Aboriginal objects located in redeposited or fill context may not require salvage excavation. Phase 1 and 3 deposits will be salvaged entirely, unless the project can provide significant reasons otherwise.
- If historical archaeological features or deposits are encountered during excavation, the appropriate management will be determined in consultation with the historical archaeology Excavation Director.

Sedimentology sampling

- Sampling for sedimentology will be undertaken following archaeological salvage. A range of salvage areas (or suitable TUs) will be selected, so that sufficient samples can be acquired to address the project's research questions.
- Most sediment sampling will occur within the archaeological trenches. However, it is envisaged that deep sampling of an alluvial section profile from the upper horizon of that profile to bedrock could be undertaken. This sampling will expose a 'face' of around 10 metres, from which soil and OSL samples would be taken at intervals sufficient to understand the formation processes of the deposit.
- Clearly, this presents a safety issue, and a safe sampling methodology could be proposed by the Sydney Metro engineers. This could include staged sampling as the excavation proceeds to depth, or use of a scissor lift placed on bedrock at the base of an excavated section.

6.5.4 Contact archaeology

Contact archaeological evidence could include sealed deposits containing both Aboriginal and European cultural material, or European materials modified for traditional use, such as flaked ceramic, flint or glass sherds. The procedure for contact archaeological evidence will be as follows:

- Excavation and recording will follow the Aboriginal archaeological methodology and include the Aboriginal representatives on site. It will include a spatially controlled open-area approach, and stratigraphic excavation or excavation in 50-millimetre spits where there is no stratigraphy.

- All artefacts from suspected and confirmed contact period sites will be retained for further analysis.
- The excavation will be directed by the Aboriginal archaeological Excavation Director in consultation with the historical archaeological Excavation Director.
- Requirements of conditions of consent will be followed. Further consultation with Heritage NSW may be required regarding the potential for conservation in situ, excavation methodology and approach.

6.5.5 Aboriginal objects within historic fills

Displaced Aboriginal artefacts may be identified within historical archaeological fills and features (not defined as 'natural soils'). It will not be necessary to cease work when this occurs. Any Aboriginal artefacts from historical archaeological contexts will be recorded by context, bagged and included in the Aboriginal archaeological data archive for further analysis. If an Aboriginal object is found at the interface with a 'natural' soil profile, an Aboriginal archaeological TU may be located at that position and excavated following the completion of historical archaeology investigations. The Aboriginal archaeological Excavation Director will be informed of any find and determine the appropriate approach in consultation with the historical archaeology Excavation Director.

6.6 Monitoring

Archaeological monitoring refers to the supervision by an archaeologist of ground disturbance or excavation works undertaken by a vacuum truck, mechanical excavator or construction personnel within areas of archaeological potential. The objective of monitoring is to ensure that archaeological layers, features and deposits are identified and not impacted prior to further archaeological excavation in accordance with the ARD.

Monitoring could be undertaken for localised minor excavation or ground disturbance in areas of archaeological potential, such as geotechnical test pits, service investigation/minor trenching, light pole footings, small tree boles or shallow excavations for pads/surfaces. Monitoring would also be undertaken where large areas are being levelled or excavated to relatively shallow depths, such as ground slab removal, footing or service removal or landscaping.

Methods

- Monitoring will be undertaken by a site supervisor or experienced archaeologist under the direction of the historical archaeology Excavation Director.
- Monitoring will be undertaken where proposed works have potential to encounter archaeology.
- If archaeology is identified, works will cease in the affected location to allow for further archaeological investigation to determine the appropriate management and archaeological method in accordance with this ARD.
- If significant archaeology will be impacted by the works, archaeological salvage excavation will be undertaken. The excavation area may need to be expanded to surrounding areas to salvage the extent of an archaeological feature.

- Archaeological recording (Section 6.8), artefact retrieval (Section 6.9) and sampling (Section 6.10) will be undertaken.
- Archaeological data and artefacts from monitoring will be included in post-excavation analysis (Section 6.14) and reporting (Section 6.15).
- If Aboriginal objects are encountered, the procedures in Section 6.5.5 will be followed.

6.7 Spatial control

Archaeological survey will use the coordinate system MGA2020 zone 56 AHD. The archaeological surveyor will establish the site grid for archaeological excavations and set out all test trenches and test units. During excavations the surveyor will also set out locations of historical lot boundaries and buildings, and other location indicators relevant for interpreting the archaeology. The surveyor will capture spatial data throughout the archaeological excavations and prepare drawings and orthophotographs to aid recording.

A 20-metre grid will be established for the Aboriginal archaeology sample (testing grid). A 1-metre grid will also be established for the site. The grid will allow for spatial control of excavation and collection of artefacts within convict hut locations and other areas identified during the excavation. Aboriginal archaeological excavation units will also be located within the site's 1-metre grid. This will assist with integrating the Aboriginal and historical archaeological excavations and data collection.

6.8 Recording

The recording of historical archaeological data will be based on the single context recording system. Phasing and interpretation of the historical archaeological features in relation to the entire site will also be included in the record sheets and survey.

Site-specific context and recording forms will be prepared for both historical and Aboriginal archaeological excavations. This will allow for integration of data between the two archaeological disciplines and consistency across multiple project stages.

6.8.1 Recording process

The following outlines the recording process:

- Monitoring, test excavation and salvage excavation locations, excavation methodology and findings will be archaeologically recorded and surveyed.
- Archaeological layers, structural remains, features, deposits and fills would be recorded on context sheets. Required context information includes the dimensions or extent of the feature/deposit, soil properties and colour variants, inclusions and artefact types, building material descriptions and properties, and stratigraphic and spatial relationships.
- A digital (JPEG file) photographic record of the archaeological program will be made. Significant archaeological remains will be recorded using both JPEG and RAW digital captures. All photographs will include a scale and north arrow.
- Where the Town Drain is impacted by works, it will be archivally recorded in accordance with Heritage Council NSW guidelines as required by condition D15.

- Measured drawings detailing the archaeological remains and stratigraphic relationships will be prepared. These will include the location of significant archaeological remains within the overall site.
- A surveyor will take georeferenced survey data throughout the archaeological excavation process to prepare survey drawings and orthophotographs of the archaeological excavations, features, deposits and other remains at various stages of excavation (for example pre, mid and post/as-builts).
- Registers of contexts, photographs, building material, environmental samples and drawings would be kept.

6.8.2 Spatial data and digital capture

Spatial data and digital capture will be undertaken using methods that facilitate archaeological interpretation during excavations and public archaeology outcomes. This will include archaeological survey as outlined in Section 6.6, integration with GIS software and photogrammetry to create 3D visualisations of archaeological phases, key features and artefacts. The data collection will be ongoing throughout archaeological fieldwork and post-excavation analysis. The data will be used to undertake analysis/research and to meet reporting requirements for the project (refer to Sections 6.14 to 6.17). It could be used to generate interpretation content for public archaeology outcomes as outlined in Section 6.18.

6.9 Artefact retrieval strategy

Artefacts are likely to be retrieved from historical archaeological excavations in large quantities. Artefacts may consist of ceramic and glass sherds or vessels, clay pipe fragments, leather scraps or shoes, buttons, coins, nails and metal objects, animal bone and marine shell. Artefacts are an important part of the archaeological resource and will inform, and be the subject of, post-excavation analysis, research and interpretation.

6.9.1 Principles

The following general principles apply to the artefact retrieval strategy:

- Artefacts recovered will be collected and labelled according to their context and managed in accordance with the guidelines set out in *Stabilising Stuff*.³ They will be cleaned, dried, bagged by context—and broad artefact class, where necessary—and temporarily stored on site in a designated secure archaeological workspace. Fragile classes (metal and organic artefacts) will be separated from bulkier finds.
- Significant artefacts at risk of rapid deterioration will be referred to a materials conservator for urgent assessment on site and will be kept in appropriate storage conditions as directed.
- Records will be kept of the artefacts recovered from each context at relevant stages of retrieval (eg number of buckets sieved, tally or weight of sherds bagged).
- At the point of retrieval, the research value of an artefact will be determined by the research potential of the context from which it was recovered. This valuation will influence how items are

collected. During post-excavation, the contexts will be reassessed for high, moderate or low research potential in accordance with the historical archaeological phases.

- The Excavation Director (or as delegated to the supervisors) will advise field archaeologists on the research potential of a context and the related retrieval strategy. When in doubt, artefacts will be collected as if the context has high research potential. Artefacts collected will be regularly reviewed and discarded in accordance with the sampling strategy (refer to Section 6.10) by the artefacts specialist (or supervisor) and Excavation Director during fieldwork, artefact processing and cleaning.
- All ceramic and glass artefacts from suspected or confirmed contact period deposits will be retained for further analysis by various specialists. Ceramic and glass may have been modified for traditional use in the contact and post-contact period.
- All Aboriginal objects from excavations will be collected and retained.

6.9.2 High research potential

Historical artefacts with high research potential will be retrieved in a way that allows for a thorough and comprehensive analysis of the total assemblage during the post-excavation phase and future research. Contexts with **high research potential** include the following:

- All contexts from state significant contexts (generally this will be Phase 1 to early Phase 2 – ie 1788-c1830s).
- Sealed artefact deposits with clear and delineated archaeological contexts (for example fill within rubbish pits, drains, wells and cesspits, underfloor deposits, yard and floor surfaces, garden deposits, original soil deposits and deposits containing contact archaeology). Artefacts recovered from these deposits have the potential to provide material evidence of historical activities within a relatively limited temporal range.
- Fills and deposits associated with construction and modification of features. Diagnostic temporal data from these artefacts is crucial to site phasing and interpretation of structural modifications.

The artefact retrieval strategy for artefacts from **high research potential** contexts requires retrieval and retention of the following:

- Artefacts made or modified by humans, including complete and fragmentary ceramic, glass, metal items, animal bone and marine shell, and modified organic and mineral sherds.
- Bulky finds such as building materials may be sampled in accordance with Section 6.10.

6.9.3 Moderate research potential

Historical artefacts from these contexts still have the potential to provide insight into activities at a site but the data may not be as readily phased or compared with other sites. Temporal data from artefacts recovered in these contexts can provide a relative understanding of features in adjacent deposits, while diagnostic artefacts can provide broad insight into activities at the site. Contexts with **moderate research potential** include the following:

- Deposits from locally significant contexts (generally this will be later Phase 2 to late Phase 4 – ie c1830s/1840s-c1920s/1930s) that have been accumulated gradually and may represent extended periods of use, such as agricultural soils, poorly delineated or differentiated yard and garden deposits, and unstratified drain deposits accumulated over extended periods of time.

The artefact retrieval strategy for **moderate research potential** contexts requires retrieval of the following:

- Artefacts made or modified by humans, including complete and fragmentary ceramic, glass, metal items, animal bone and marine shell, and modified organic and mineral sherds
- Bulky finds such as building materials may be sampled in accordance with Section 6.10.

Non-diagnostic artefacts from contexts with **moderate research potential** may be considered for discard after cataloguing and reporting at the recommendation of the artefacts specialist.

6.9.4 Low research potential

Few historical artefacts will be recovered from contexts with low research potential. Contexts with **low research potential** include the following:

- All deposits from Stage 5 (Modern Development, 1950s+).
- Deposits resulting from the introduction of fill to the site, resulting in artefacts in a secondary context with low potential to provide insight into activities on site.
- Highly mixed deposits of poor integrity or intactness resulting from modern disturbance.
- Deposits from phases identified as having low archaeological significance (eg deposits with contemporary rubbish resulting from recent works).

To assist with phasing (even modern disturbance), the following retrieval strategy is recommended for **low research potential** contexts:

- Complete ceramic and glass vessels, and small finds.
- Other artefacts, including potential interpretive artefacts, will be noted on the context sheets and discarded unless it can be clearly demonstrated that the artefact is associated with historical use of the site (eg manufacturer's name on a bottle matches the factory being excavated).

Most artefacts retrieved from low research potential contexts will be dated and noted on the context sheet and discarded prior to post-excavation analysis.

6.10 Sampling strategy

Samples will be collected from significant historical archaeological features and deposits during archaeological excavations for further analysis, to inform the response to the research questions and for archival purposes. Samples will be collected by context and included in the sample register, then bagged and temporarily stored until needed for the post-excavation analysis and inclusion in the archaeological collection archive.

6.10.1 Sample collection

Samples of the following historical archaeological material will be collected:

- Building material samples such as brick, structural timber and mortar. Photographs of dimension stone examples will be taken but physical samples will not be kept.
- Organic material such as wood, seeds or pips and shell. Animal bone may also be sampled depending on the nature or significance of its context.
- Soils with the potential for fossil pollens or other ecofacts such as natural soils, historic topsoils or garden soils, sediments within drains or water channels, basal fills within cesspits or wells, and underfloor deposits. Two samples will be taken from sampled contexts—one for analysis and one for potential inclusion in the archaeological collection archive.

6.10.2 Sample discard

Samples from historical archaeological excavations—building materials or soils—may be discarded during initial post-excavation analysis scoping, following specialist analysis or during preparation of the archaeological collection for long-term storage. Decisions regarding sample discard will be made by the Excavation Director in conjunction with the various specialists.

Generally, samples will be discarded:

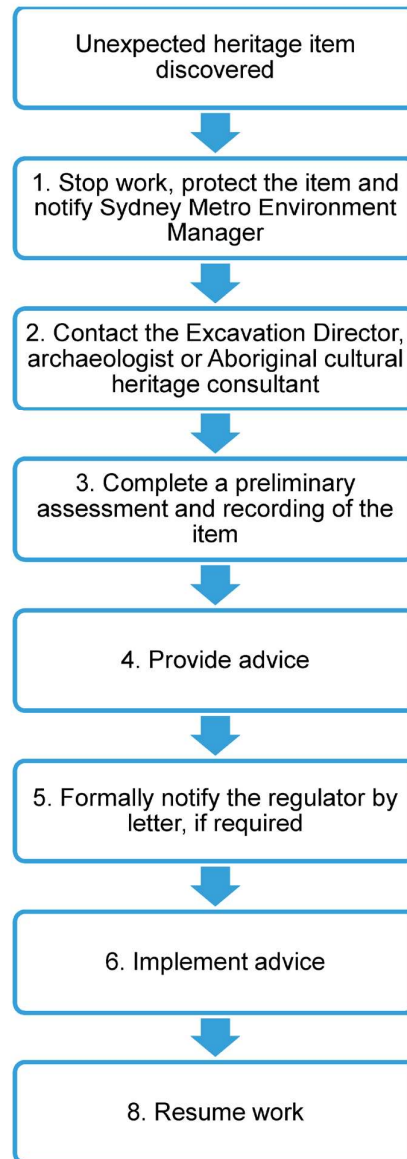
- where the archaeological feature or deposit is reassessed as not being significant or not holding research value
- where there are duplicate samples from the same feature or deposit that are not needed for specialist analysis or the archaeological collection archive
- once cataloguing, analysis and the type series is complete, and where discard of duplicate items is recommended by the artefacts specialist.

6.11 Archaeological clearance

Following the completion of archaeological excavations in an area, the Excavation Director will provide an archaeological clearance confirmation (via email or brief memo). Construction works can only proceed once archaeological clearance has been provided by the Excavation Director.

6.12 Unexpected heritage finds

Some low impact work or works within areas not expected to contain archaeology will be subject to an unexpected finds procedure. This is outlined below. Please also refer to the Sydney Metro Unexpected Heritage Finds Procedure in Appendix B.



6.13 Discovery of human skeletal remains

Human skeletal remains may be unexpectedly encountered during the project. The Sydney Metro Exhumation Management Procedure outlines the process to follow—refer to Appendix C.

6.14 Post-excavation analysis—historical archaeology

The post-excavation analysis will commence immediately on completion of the fieldwork or phases of fieldwork. It will include input from the Excavation Director and archaeological team, artefacts specialist and other specialists. The post-excavation phase will overlap with the report preparation (see Section 6.16).

6.14.1 Preliminary tasks

On completion of fieldwork the following archive processing and preparation activities will be undertaken:

- All paper archive, digital photographs, survey data, artefacts and samples will be moved and temporarily stored at the archaeologist's office for the post-excavation analysis phase.
- Site registers and context sheets will be collated and digitised for analysis and inclusion in the final excavation report and archaeological collection archive.
- Preliminary historical archaeological phasing and artefact research priorities will be assigned to inform briefing and direction for the post-excavation analysis.
- Artefacts from significant historical archaeology contexts will be photographed as a group prior to being sorted into type and transferred to the various specialists.
- The historical artefact collection will be sorted into type—ceramic, glass, metal, animal bone, shell, organics, miscellaneous small finds—in preparation for specialist artefact cataloguing and analysis. A rough tally of sherds will be collected at this time to aid the estimate of processing time.

6.14.2 Stratigraphic reports and detailed plans

- Technical reports with detailed descriptions and photographs of archaeological features, deposits and fills, and stratigraphic analysis will be prepared.
- Detailed site plans and illustrations will be completed based on the measured drawings prepared during the fieldwork. The plans will be prepared in conjunction with the technical reports and include key context identification, stratigraphic relationships and archaeological phasing.
- Survey data and orthophotographs will be collated to inform the technical reporting and detailed plan preparation.

6.14.3 Samples cataloguing and analysis

Building material and environmental samples will be selected for analysis once the archive is processed and the fieldwork findings summary has been prepared. Samples will be selected based on the potential to contribute to further archaeological analysis and respond to the research questions.

- Brick and mortar samples will be catalogued. Brick samples will be analysed, and a typology created. Mortar samples may be analysed for chemical properties and fossil pollen content.

- Soil and pollen samples will be catalogued. Suitable soil and pollen samples will be analysed to inform the response to research questions and interpretation.
- Suitable structural timber and wood samples will be submitted for wood species identification.
- Sampled material from sieved contexts such as seeds or pips will be included in the catalogue.

6.14.4 Artefact cataloguing and analysis

- Artefacts will be processed, identified and catalogued by type—ceramic, glass, metal, organics, animal bone, shell, building materials and miscellaneous small finds.
- Artefacts will be allocated a unique identification number across all sites and artefact classes.
- The data will be entered in a site-specific database developed for this project. The database will follow best practice for archaeological data recording and assemblage analysis, such as the EAMC system. It will integrate records for artefacts, contexts and types, clearly identify the record creator and allow export in multiple formats. It should allow for ready access to artefact records and typologies from neighbouring sites wherever possible.
- The artefact assemblage will be analysed and a succinct artefact analysis report prepared. This will include the identification of:
 - artefacts suitable for potential display and interpretation
 - artefacts requiring specialist conservation treatment for long-term storage
 - undiagnostic artefacts from contexts with **medium** or **low research potential** recommended for potential discard
 - other artefacts suitable for use in education kits or offsite interpretive displays.
- Artefacts nominated for display and interpretation will have an image and 50-word 'plain English' summary statement to enable ready distribution in a digital exhibition.
- Analysis of artefacts will be informed by research conducted at neighbouring sites and for comparable assemblages throughout Parramatta. Select numerical comparison should be carried out where feasible.

6.14.5 Historical and archaeological research

Targeted research and comparative analysis will be undertaken to inform the interpretation of the archaeological findings and the response to the research questions. This research will commence during the post-excavation analysis phase and overlap with the reporting phase.

6.15 Post-excavation analysis—Aboriginal archaeology

6.15.1 Aboriginal artefact analysis

All Aboriginal artefacts recovered during the excavation program would be subject to specialist lithics analysis. A standard recording approach would note all relevant attributes in a comparable manner to

other regional lithic studies, and in accordance with Holdaway and Stern.⁴ A technical report that assesses the stone materials against other recent excavations in the region would be prepared.

The analysis may identify some artefacts which have been used, and these would be subject to specialist use-wear analysis.

All Phase 3 artefacts (glass, ceramic and flint) require a three-stage process of investigation. This has been applied to other assemblages in Parramatta, and Western Sydney, and is the only method suitable for confirming whether non-traditional materials have been made and/or used by Aboriginal people. The steps involve an assessment by a specialist in historical artefacts to confirm the material type and phasing of the item, followed by a classical analysis adhering to standards for stone artefacts, and finally microscopic analysis to identify use wear and/or the manufacturing processes.

6.15.2 Radiometric dating

Should appropriate archaeological deposits such as hearths, pits, ground ovens or potentially stratified geomorphological units be identified during Aboriginal archaeological investigations, appropriate samples would be collected for radiometric dating. This may include radiocarbon dating, (OSL) depending on the nature of the archaeological deposit encountered.

The sedimentary analysis of the alluvium (and possibly PSB) will require a series of OSL samples to be taken from a complete section profile to bedrock. These samples will provide the ability to address questions about the formation period of the alluvial soil landscape(s).

6.15.3 Palaeobotanical analysis

Samples from archaeological trenches, archaeological features, and the whole alluvial profile will be sampled and subject to palynological analysis. The outcomes will aim to address research questions relating to the paleoenvironment and Aboriginal economy in connection with the wetland area.

6.15.4 Sedimentary analysis

Detailed laboratory analyses of sediment samples, collected at close intervals in a vertical sequence, can show variation of particular properties with depth—some of which may be indicative of stratigraphy. A range of samples will be taken for analysis, which may include basic physical and chemical properties of bulk samples, NIR-VIS-UV spectroscopy of point-source samples and high-resolution particle-size distribution of point-source samples.

6.16 Reporting—historical archaeology

The archaeological investigations of the site are expected to be undertaken in stages over several years. Reporting on the findings will also be undertaken in stages and the final report prepared as several volumes. The final report must be submitted to the Planning Secretary, Heritage NSW and City of Parramatta within 24 months of completion of fieldwork (Condition D29).

6.16.1 Preliminary archaeological investigation results

Once the archaeological excavations and fieldwork for an area or construction stage has been completed, a preliminary report will be prepared. The preliminary report will include a summary of key archaeological findings, preliminary phasing and artefact research priorities, identification of the post-excavation analysis scope, and specialist inputs required to respond to the research questions in this ARD and comply with the CoA. It is anticipated that several preliminary reports for different areas of

the site will be prepared. Preliminary report(s) will be prepared within three months of completion of fieldwork (or phases of fieldwork as appropriate).

6.16.2 Final archaeological investigation results

The final report will be prepared as several volumes corresponding to the archaeological investigation stages. The report(s) will include a synthesis of the post-excavation analysis, research, technical and specialist reports. They will include:

- a plain English summary of the archaeological findings
- an overview of the archaeological investigation program and methodology
- historical background, including additional primary or secondary source research if required
- a synthesis and discussion of the archaeological investigation results and response to the research questions
- illustrations including photographs, scale drawings and interpretive graphics
- a reassessment of archaeological significance and the further research potential of the archaeological collection
- details of the archaeological collection repository, long-term management and access.

Technical and specialist reports, testing report(s), conservation review outcomes (Section 6.4), detailed site plans and survey drawings, context and site registers, artefacts and samples catalogue, site photograph contact sheets and scanned context records will be included as appendices or in separate volumes depending on the scale of archaeological investigations at each project report stage.

A final volume synthesising the results and presenting the archaeological findings from the entire site will be prepared once all other post-excavation analysis and reports are complete. This could be prepared as an industry monograph or general audience publication—and an opportunity for a public archaeology outcome as outlined in Section 6.19.

6.17 Reporting—Aboriginal archaeology

An excavation report detailing the Aboriginal archaeological excavation program and its results would be prepared. The final excavation report would present a description of the project and its objectives and research framework; a description and analysis of the evidence recovered from the study area, including images of the evidence and plans developed from measured drawings created on site; archival and environmental evidence; a review of the program with a response to the research framework; and a discussion of new areas of research that may have been highlighted by the excavation, including the relative values of the artefact assemblage.

The information derived from the Aboriginal archaeological excavations will be used to help deepen our understanding of the archaeological and cultural significance of the study area, with consideration given to the implications for regional prehistory. The report will also compare and contrast the results from the study area with those of other sites in Parramatta and the wider Cumberland Plain region.

Copies of the final excavation report, once completed, would be forwarded to the proponent, the project RAPs and Heritage NSW. A plain English report will be developed, in collaboration with RAPs. Timeframes for post-excavation reporting will depend on the extent of material recovered.

6.18 Archaeological collection long-term storage preparation

6.18.1 Historical archaeological collection

Sydney Metro is responsible for the long-term storage and ongoing conservation management of the historical archaeological collection. The historical archaeological collection will be prepared for long-term storage prior to returning to Sydney Metro's nominated repository.

- Artefacts and retained samples will be bagged, tagged and placed in archival standard boxes by material type and context following best-practice guidelines for long-term artefact storage. Bags will be minimum 75 micron; labels will be acid-free and marked with permanent ink and/or laser print.
- Paper and digital copies of the artefact catalogue and excavation data will be included in the archive boxes, along with copies (hard copy or digital) of the final report.
- A register of artefacts removed for interpretation will be made and included with the collection.
- Conservation of certain artefacts may be required prior to long-term storage. The artefacts specialist and Excavation Director will make recommendations for which artefacts could be considered for treatment and stabilisation by a materials conservator.
- The collection will be stored securely in a dry and stable environment.
- A collection management policy is to be prepared to govern the ongoing care and conservation of the collection and to set out conditions for providing access to researchers. This will be prepared once the archaeological investigations are complete and the archaeological collection has been analysed by the artefact specialist(s).

6.18.2 Aboriginal artefacts

All Aboriginal archaeological materials and soil samples would be temporarily stored in an appropriate place, which would initially be the archaeologist's office, or a relevant analyst's laboratory or office. Once the analysis is complete the collection would be transferred to a suitable Sydney Metro site, and/or other location approved by Sydney Metro, for ongoing curation. It is the responsibility of Sydney Metro to develop an appropriate future management strategy for any Aboriginal artefacts recovered from the site in collaboration with the project's RAPs.

6.19 Public archaeology

The archaeological investigations of the site present an opportunity to share and interpret the findings to the public and researchers. Realising this opportunity will require collaboration between the archaeological team, contractors and Sydney Metro and more detailed planning at various stages throughout the investigations and project design development. The public archaeology strategy is outlined below. Implementation of the strategy will be throughout the archaeological investigations and will be subject to archaeological findings and construction programming.

- Public engagement during investigations—excavations and post-excavation analysis stages:
 - Posters/graphics with information about the archaeology included on site hoarding.
 - Leaflets with information about the archaeology available to the public—either hard copy from the site or available to download through project/company websites etc.
 - Open day(s) with tours of the site during archaeological excavations.
 - ‘Pop-up exhibition’ or ‘curio-corner’ with archaeology findings and artefact display on site or during a suitable cultural or heritage event or similar short-term event.
 - Blogs, vlogs and social media posts on the archaeological excavations, findings and interesting artefacts.
 - Media releases (traditional media platforms).
 - Webinars and other public presentations or Q&A sessions with the archaeologists.
- Research and publications—post-excavation and reporting stages (and afterward):
 - Make the archaeological collection (artefacts and site archive) publicly available for further research and academic publications.
 - Publish the archaeological reports online and submit it to an online repository (Heritage NSW and City of Parramatta Libraries).
 - Present findings at industry conferences and to special interest groups such as the local history society.
 - Publish academic research papers or an industry monograph on the archaeology of the site.
 - Publication on the archaeology for a general audience.
- Heritage interpretation:
 - Incorporate archaeological findings in heritage interpretation for the new station and associated developments.
 - Display archaeology and artefacts within public areas of the new development.
 - Create an online digital exhibition, including information and 3D visualisations of key artefacts and archaeology.

6.20 Endnotes

- ¹ GML Heritage 2021, Sydney Metro West Parramatta Station Construction Site—Aboriginal Heritage Report, prepared for Sydney Metro.
- ²
- ³ Heritage Council of NSW, *Stabilising Stuff: A Guide for Conserving Archaeological Finds in the Field*, NSW Office of Environment & Heritage, Parramatta, NSW, 2012
<<https://www.heritage.nsw.gov.au/assets/Uploads/files/StabilisingStuff.pdf>>.
- ⁴ Holdaway, S and Stern, N 2004, *A Record in Stone: The Study of Australia's Flaked Stone Artefacts*, Museum Victoria and Aboriginal Studies Press, Melbourne.

Bibliography

7 Bibliography

7.1 Maps and plans

Date	Title and source
nd	'Sydney Subdivision Plans' – Parramatta P6/, Mitchell Library, State Library of New South Wales.
nd	'Map of Parramatta', SA 4726, State Archives & Records.
nd	Blackwattle Series, Sheet 2711, Sydney Water Archives.
1791	'Plan of the Settlement of Parramatta', State Library of NSW, Digital Order No. a4178007.
1792?	'Plan of the Town of Parramatta in New South Wales. [Sydney] MS. 225 feet to 1 inch', The National Archives [UK], CO 700/NewSouthWales4.
1804	'Plan of the Township of Parramatta', G. W. Evans Acting Surveyor, Sydney (based on 1804 survey), The National Archives (UK) CO/700/New South Wales No. 22.
1823	Parramatta Township, Stewart, State Archives & Records, SR Map 4907.
1823?	Survey of Parramatta by Mr McBrien, copied from a written testament on the back, NSW Land Registry Services, Crown Plan 1-1.
1829	Parramatta Town Allotment lease applied for by Ann Ewer, State Library of NSW, FL207367.
1831	Richards Field Book Survey, Reel 2/5197, State Archives & Records.
1831	'Copy of part of the Map of Parramatta, JBK', Sheet 1 of 2, NSW Land Registry Services, Crown Plan 3-714.
1836	'Map of Parramatta compiled from Richard's survey. Shows town allotments, and land leased and granted', L. Johnstone. State Archives & Records, SRNSW Item No. 4799.
1842	[Sketch map of Church and George Street], National Library of Australia, nla.obj-229918750-1.
1844	Brownrigg, W M, 'Plan of the town of Parramatta and the adjacent properties', State Library of NSW, M3/811.1301/1844/1.
1855	'Survey of all the Streets in the Town of Parramatta North, for the Purpose of Aligning the Same', E. H. Knapp Surveyor, dated 15 December 1855, NSW Land Registry Services, Crown Plan.
1858	Survey of Allotment 76 in Section 16 in the town of Parramatta, Parish of St John, NSW Land Registry Services, Crown Plan 144-750.
1880	'Valuable Business Premises Opposite Commercial Bank George Street Parramatta to be sold on the ground Wednesday Augst 18th at 11 o'clock by Mills, Pile & Gilchrist', State Library of NSW, c035480001.
1892	PWS Fieldbook 2090, 1 Feb 1892, Sydney Water Archives.
1894	PWDS 1544-S1223, 30 May 1894, Sydney Water Archives.
1894	Plan of Allotment 75 Section 16 Town of Parramatta Parish of St John County of Cumberland, NSW Land Registry Services, Crown Plan 191-750.
1895	'Parramatta Sheet 18', Parramatta Detail Sheets, NSW Dept. of Lands. SLNSW Z/M Ser 4 811.1301/1, digital order no. a1364011. Available at < http://acms.sl.nsw.gov.au/album/ItemViewer.aspx?itemid=861856&suppress=N&imgindex=11 >.

Date	Title and source
1943	Sydney 1943 Images, Ausimage, Sinclair Knight Merz 2007 from RTA photographs; NSW Land Registry Services, 2012. Available from < http://maps.six.nsw.gov.au/ >.
1950s	Parramatta Outstanding Retail Development Site with improvements-tenanted, Nos 57-59 George Street, State Library of NSW, c035480193.
1954	Detail Sheet 2711, 10 December 1954, Sydney Water Archives.
1956	Parramatta City Council Plan of lot E MPS (OS) 9175 and land described in Bk 2029 No 953, Parish of St John, County of Cumberland, NSW Land Registry Services, Crown Plan 15770-3000.

7.2 Pictures and illustrations

Date	Title, artist and source
1793	[Sketch of Parramatta], Fernando Brambila, April 1793, British Library, Maps T.TOP.124 SUPP F44.
c1805–1809	High Street [now George Street] Parramatta, from the gates of Government House, around 1805-1809, G W Evans. Caroline Simpson Library, Sydney Living Museums [formerly Historic Houses Trust], record no. 31758. Available at < http://collection.hht.net.au/firsthtpictures/picturerecord.jsp?recno=31758 >.
1870	Hugh Taylor in front of his butcher shop in Church Street Parramatta / American and Australasian Photographic Company, Caroline Simpson Library & Research Collections, Sydney Living Museums, 37808.
1870	Hugh Taylor with (probably) his wife and son on the front verandah of their house in Church Street Parramatta by American and Australasian Photographic Company, Caroline Simpson Library & Research Collections, Sydney Living Museums 35533.
1870s	[Church Street]. City of Parramatta Research & Collections, ACC126_016.
1879	George Street by James Vickers. National Library of Australia, nla-ob-496805043-1.
1880	Church Street with Post Office on left. National Archives of Australia, C4076 HN5395.
c1890	[Church Street]. City of Parramatta Research & Collections, LSP00313.
1884–1917	Church Street Parramatta, K & Co, 2760. Museum of Applied Arts and Science, 15327.
1898	[Church Street Parramatta] in Standish G Goodin Presentation Album of Parramatta views. State Library of NSW, a622007h.
c1903	Site of the Birthplace of John Batman, Macquarie St., Parramatta by P Creagh, Olive Studio. State Library of Victoria, nc001228.
1907	Church Street, Parramatta. National Museum of Australia, nma.img-ci20112792-wm-vs1_03_1100.
Before 1917	Rawlinson Bros' Store, Church Street, Parramatta. City of Parramatta Research & Collections, LSP01064.
1925	Panoramic View of Parramatta by RP Moore. State Library of NSW, FL9867288.
1929–1930	Series 13: New South Wales country towns (Boronia, Glenfield, Hawkesbury, Liverpool, Parramatta, Pitt Town, Wilberforce, Richmond), ca. 1916-1947 / photographed by Arthur Ernest Foster. FILE TITLE Box 71 No. 982. Parramatta - Roxy Theatre. State Library of NSW, FL393733.
1931	Item 18: Margaret Houison's home, 54 Macquarie Street, Parramatta / photographer E.G. Shaw; 6, Supposed to be the home of John Batman (erected in 1804). State Library of NSW, FL3196487.

Date	Title, artist and source
1931	Item 18: Margaret Houison's home, 54 Macquarie Street, Parramatta / photographer E.G. Shaw; 1. Front view. State Library of NSW, FL3196479.
1931	Item 18: Margaret Houison's home, 54 Macquarie Street, Parramatta / photographer E.G. Shaw; 2. Back view. State Library of NSW, FL3196481.
1932	James Houison's cottage, Macquarie Street, Parramatta 1842 by Matthew Macnally. City of Parramatta Research & Collections, LSP00622.
c1934	William Batman's residence, Macquarie St., Parramatta, N.S.W. State Library of Victoria, H4222.
c1934	William Batman's residence, Macquarie St., Parramatta, N.S.W. State Library of Victoria, H4222.
c1935	Aerial view of St Johns Church by EW Searle, National Library of Australia, nal.obj-1419197607-1.
1949	Sydney from Air—Parramatta. State Library of NSW, FL18904288.
1949	Sydney from Air—Parramatta. State Library of NSW, FL18904290.
1953	Parramatta 'town series' / photographed by R Donaldson. State Library of NSW, FL9769584.
1953	Parramatta 'town series' / photographed R Donaldson. State Library of NSW, FL9769591.
1910–1962	Church Street Parramatta / by Frank Hurley. National Library of Australia, http://nla.gov.au/nla.obj-160078129 .
1910–1962	[Aerial photograph of Parramatta, 3] [picture] : [Sydney, New South Wales] / [Frank Hurley], National Library of Australia, http://nla.gov.au/nla.obj-160018036 .
1910–1962	[Aerial photograph of Parramatta, 5] [picture] : [Sydney, New South Wales] / [Frank Hurley], National Library of Australia, http://nla.gov.au/nla.obj-160019182 .
1968	Coles Store on Macquarie Street, City of Parramatta Research & Collections, ACC209/01619.
1968	View of Macquarie Street Parramatta from the Administration Building. City of Parramatta Research & Collections, ACC209/008.
1958–1973	Horwood Place and car park viewed from Council Chambers. City of Parramatta Research & Collections, PRS110/004/012.
c1977	City of Parramatta Research & Collections, ACC002_107_008.
1960s–1980s	Kia Ora House, Macquarie Street Parramatta. City of Parramatta Research & Collections, LSP00649.

7.3 State archives & records

Various, as cited in endnotes.

7.4 Printed books, articles, and unpublished reports

Archaeological Management & Consulting Group Pty Ltd 1996, *Report on the Archaeological Test Excavation Programme & Monitoring for the Proposed Office Works Superstore 41-53 George Street Parramatta*.

Archaeology and Heritage Pty Ltd 2005, *Archaeological Assessment Parramall 55-57 George Street Parramatta*.

Archaeological Heritage Management Solutions 1999, *Archaeological Investigations & Archival Recording at the Former 'Red Coats' Mess Building, 52 George Street Parramatta NSW*, report to Mr Charles McCloskey.

Austral Archaeology 2006, *236 Church Street Parramatta Archaeological Assessment, Statement of Heritage Impact and Research Design Final Report*.

Australian Dictionary of Biography, Melbourne University Press, Melbourne, 1966 ff.

Barns, S and Mar, P 2018, *Waves of People: Exploring the Movements and Patterns of Migration That Have Shaped Parramatta Through Time*, Western Sydney University, City of Parramatta.

Brook, J 1994, *Shut Out from the World: The Hawkesbury Aborigines Reserve and Mission 1889–1946*, Deerubbin Press.

Brown, S & K 1995, *Parramatta; A town caught in time, 1870*, Hale & Iremonger, Sydney.

Casey, M and Hendrickson, G, eds., 2009, *Breaking the Shackles: Historical Lives in Parramatta's Archaeological Landscape*, Parramatta Heritage Centre and Casey & Lowe, Parramatta.

Casey & Lowe 2021, *Parramatta Square Trunk Sewer Preliminary Results Archaeological Report*, report for Walker Parramatta Square Developments on behalf of Sydney Water.

Casey & Lowe 2020, *3 Parramatta Square, formerly 153 Macquarie Street, Parramatta, Archaeological Investigation Results*, report to Parramatta Square No. 3 Property Pty Ltd and City of Parramatta.

Casey & Lowe 2017, *48 Macquarie & 220–238 Church Streets, Parramatta, Archaeological Assessment*.

Casey & Lowe 2015, *PS3 Western Section, Civic Place, Parramatta Square, Historical Archaeological Impact Statement & Research Design*, report to Parramatta City Council.

Casey & Lowe 2015, *PS5&6 Parramatta Square, Historical Archaeological Impact Statement & Research Design*, report to Parramatta City Council.

Casey & Lowe 2013, *Archaeological Testing, George Street Gatehouse, Parramatta Park, Parramatta*, report to Government Architects Office on behalf of Parramatta Park Trust.

Casey & Lowe 2005, *Archaeological Investigation, Non-Indigenous Archaeology, 1 Smith Street, Parramatta*, report to Sydney Water.

Clark, M 1995, *A Short History of Australia*, Penguin, Maryborough.

Clendinnen, I 2008, *Dancing With Strangers*, Text Publishing, Melbourne.

Rivett, C 1983, *Parramatta's Town-Plan 1788 and 1955*, New City Press, Parramatta.

Collins, D 1910, *An account of the English colony in New South Wales*, Collier J. (ed), Whitcombe and Tombs, Christchurch.

Comber Consultants 2019, *Parramatta Square 5 & 6 (PS5&6): 12-38 Darcy St Parramatta, Excavation Report, AHIP No. C0001379*, report for Parramatta Square Property No. 1 Ltd Pty.

Comber Consultants 2015, *Harris Street, Parramatta, Excavation Report, AHIP No. 1131736*, report prepared for Endeavour Energy.

Cultural Resource Management 2012, *Archaeological Investigation 211 Church Street Parramatta*, report to the University of New England.

Edward Higginbotham & Associates Pty Ltd 2007, *Report on the Archaeological Excavations, 134–140 Marsden Street & 45–47 Macquarie Street, Parramatta NSW. Volume 1 Introduction, historical research and archaeological assessment*, report to Estate Construction of Australia Pty Ltd.

Edward Higginbotham & Associates 2002, *Report on the Archaeological Excavations, 25 Smith and 76-78 Macquarie Street, Parramatta, NSW*.

Edward Higginbotham & Associates 2002, *Historical and Archaeological Assessment of Proposed Development, 25 Smith and 76-78 Macquarie Street, Parramatta, NSW*.

Edward Higginbotham & Associates 1995, *Historical and Archaeological Assessment of the Site of the Proposed Officeworks Superstore, 41-53 George Street, Parramatta, NSW*.

Higginbotham, Edward 1990, *The Babes in the Wood, Parramatta Report on the Archaeological Excavation of the Former Prospect Electricity Staff Car Park, Corner of Smith and Georges Streets, Parramatta*, report to Prospect County Council.

Gammage, B 2011, *The Biggest Estate on Earth: How Aborigines Made Australia*, Allen and Unwin, Crows Nest.

GML Heritage 2021, *Arthur Phillip High School and Parramatta Public School, Parramatta, Aboriginal Post-Excavation*, report prepared for School Infrastructure NSW, July 2021

GML Heritage 2020, *Parramatta Light Rail Infrastructure—Historical Archaeological Research Design & Excavation Methodology*, report to Parramatta Connect on behalf of Transport for NSW.

GML Heritage 2019, *Parramatta RSL Stage 2 Redevelopment—Historical Archaeological Research Design & Excavation Methodology*, report to Paynter Dixon on behalf of Castle Hill RSL Group.

GML Heritage 2015, *143–169 Macquarie Street (One PSQ), Parramatta—Historical Archaeological Excavation Report*, report to Leighton Properties Pty Ltd.

GML Heritage 2017, *Arthur Phillip High School & Parramatta Public School—Archaeological Assessment and Research Design*, report to School Infrastructure NSW.

Godden Mackay Logan 2000, *16–18 Smith Street, Parramatta—Archaeological Investigation, Volume 1, Main Report*, report to Grant Constructions Pty Ltd.

Godden Mackay Logan 2000, *Parramatta Historical Archaeological Landscape Management Study (PHALMS)*, report to Parramatta City Council.

Higginbotham, E 1991, 'The Future of Parramatta's Past: An Archaeological Zoning Plan'.

Hillier, Robert S (comp) [c. 1905], *Beautiful Parramatta: Descriptive and Illustrative*, Federal Printing Works, Macquarie St, Parramatta.

Karskens, G 2009, *The Colony: A History of Early Sydney*, Allen & Unwin, Crows Nest.

Kass, T, Liston, C and McClymont, J 1996, *Parramatta: a Past Revealed*, Parramatta, Parramatta City Council.

Kohen, J 2006, *Daruganora: Darug Country—The Place and The People*, Darug Tribal Aboriginal Corporation, Sydney.

Mary Dallas Consulting Archaeologists, *The Aboriginal Heritage of Civic Place*, draft report prepared for Parramatta City Council.

Mary Dallas Consulting Archaeologists 2003, *Parramatta City Council Aboriginal Cultural Heritage Study*, report prepared for Parramatta City Council.

Muscaped, 2016, *Parramatta North Historic Sites Heritage Interpretation Strategy*, prepared for UrbanGrowth NSW.

Parker, M 2006, 'Rethinking the Convict Huts of Parramatta: An Archaeology of Transformation (1790–1841)', unpublished Honours thesis, University of Sydney.

Parramatta Heritage Centre and Casey & Lowe 2009, *Breaking the Shackles, Historical Lives in Parramatta's Archaeological Landscape*.

Tarlow, S 2007, *The Archaeology of Improvement in Britain, 1750-1850*, CUP.

Tench, W 1961 *Sydney's First Four Years*, ed. Fitzhardinge, L. F., Angus and Robertson, Sydney.

Wharton, JC 1911, *The Jubilee History of Parramatta*, Cumberland Argus, Parramatta, 1911.

7.5 Secondary sources

Electronic sources as cited in text and endnotes

7.6 Land and property information

Certificates of Title, 1863 onwards.

Crown Plans.

Deeds Registers, 1825 onwards.

Deposited Plans.

Grants Registers, 1792 onwards.

Old Registers, 1802–1825.

Primary Application Search Books.

7.7 Primary Application search sketches

Real Property Applications, 1863 onwards.

7.8 Manuscript sources—Parramatta research & collections

Borough of Parramatta Rate Book, 1906.

Index to Building Register, Parramatta, 1935 ff.

Parramatta Building Register, 1935 ff.

7.9 Newspapers

Australian, 1824–1844.

Australian Town and Country Journal, 12/7/1884.

Broadcaster, 22/10/1968.

Colonial Observer, 18/8/1843.

Colonist, 5/1/1827.

Cumberland Argus, 1888 ff.

Cumberland Free Press, 12/10/1895.

Cumberland Mercury, 1876–1891.

Daily Telegraph, 10/3/1923, 10/12/1927, 12/3/1926.

Evening News, 28/4/1879, 7/8/1882, 3/11/1882.

Illustrated Sydney News and New South Wales Agriculturalist and Grazier, 10/11/1877, 12/6/1880.

Methodist, 18/4/1836.

Parramatta Chronicle, 13/1/1844.

Sunday Times, 29/9/1929.

Sydney Gazette and New South Wales Advertiser, 1803–1829, 1834, 1840.

Sydney Herald, 1831–1833.

Sydney Mail and New South Wales Advertiser, 22/7/1871.

Sydney Monitor and Commercial Advertiser, 1831, 1834, 1839, 1883.

Sydney Morning Herald, 1831 ff.

Appendices

8 Appendices

Appendix A

Historic maps and overlays

Appendix B

Sydney Metro Unexpected Finds Procedure

Appendix C

Sydney Metro Exhumation Management Procedure

Appendix A

Historic maps and overlays



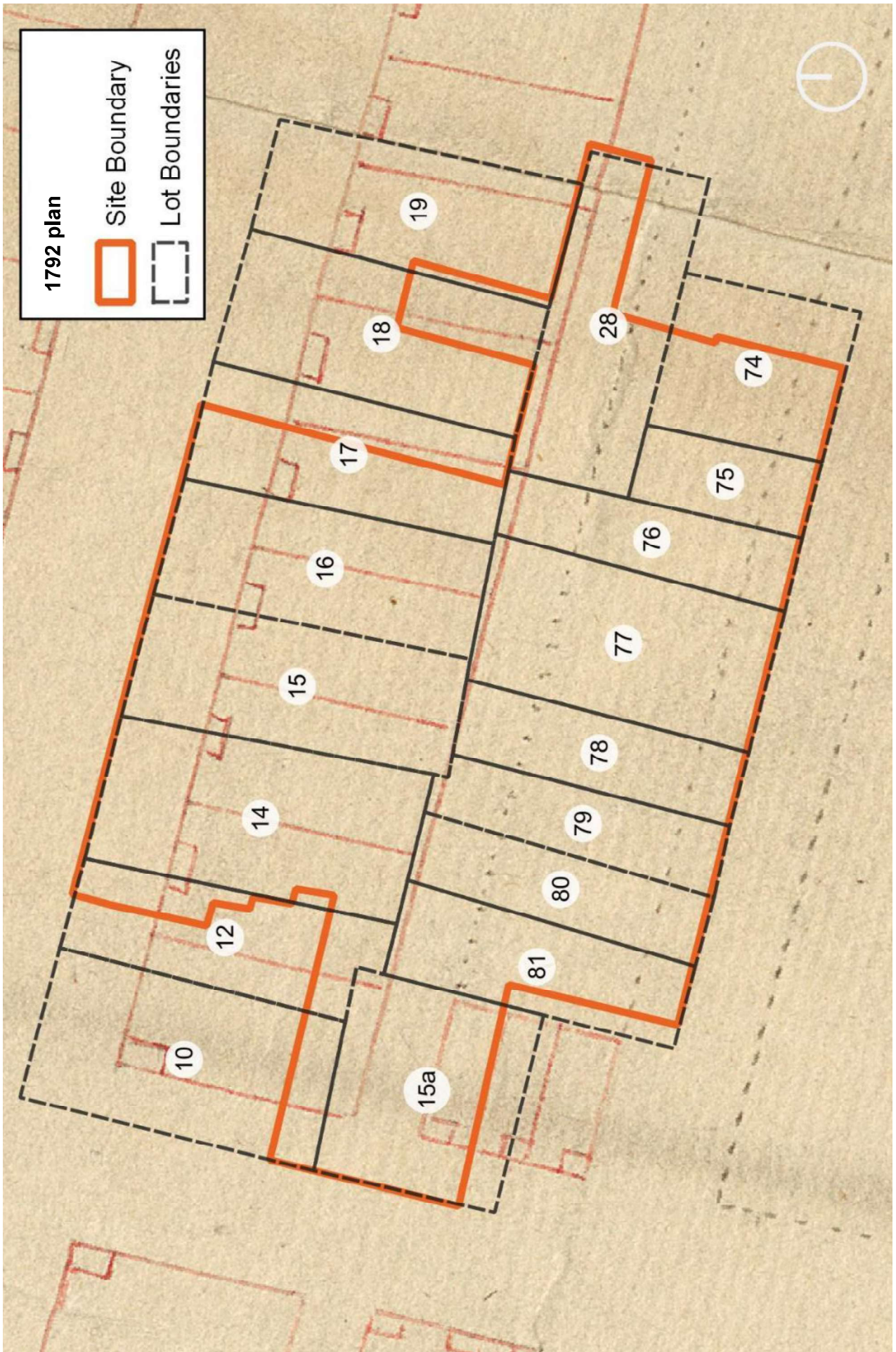
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- Allotment Boundaries



1792 plan

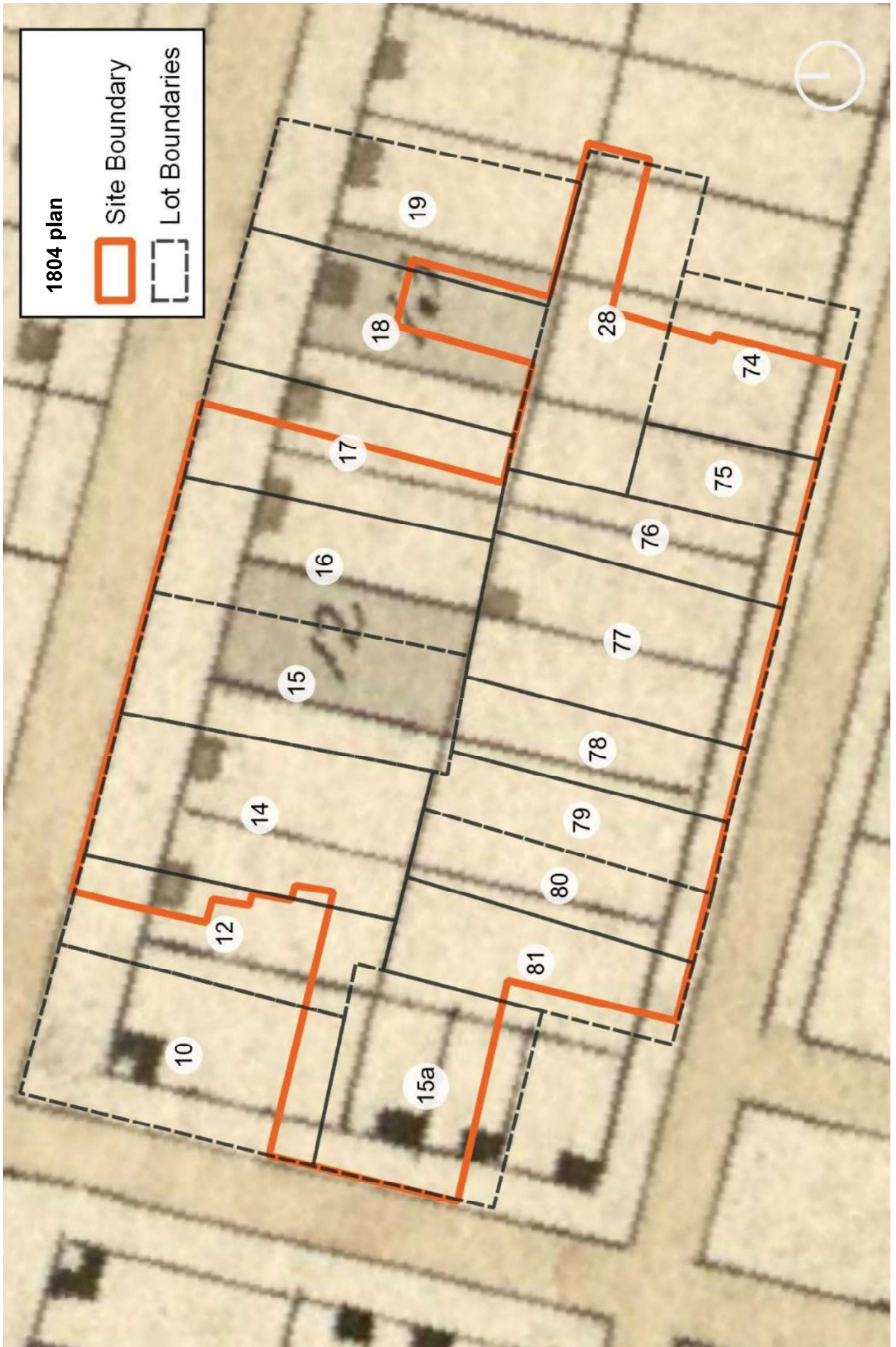
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- Lot Boundaries

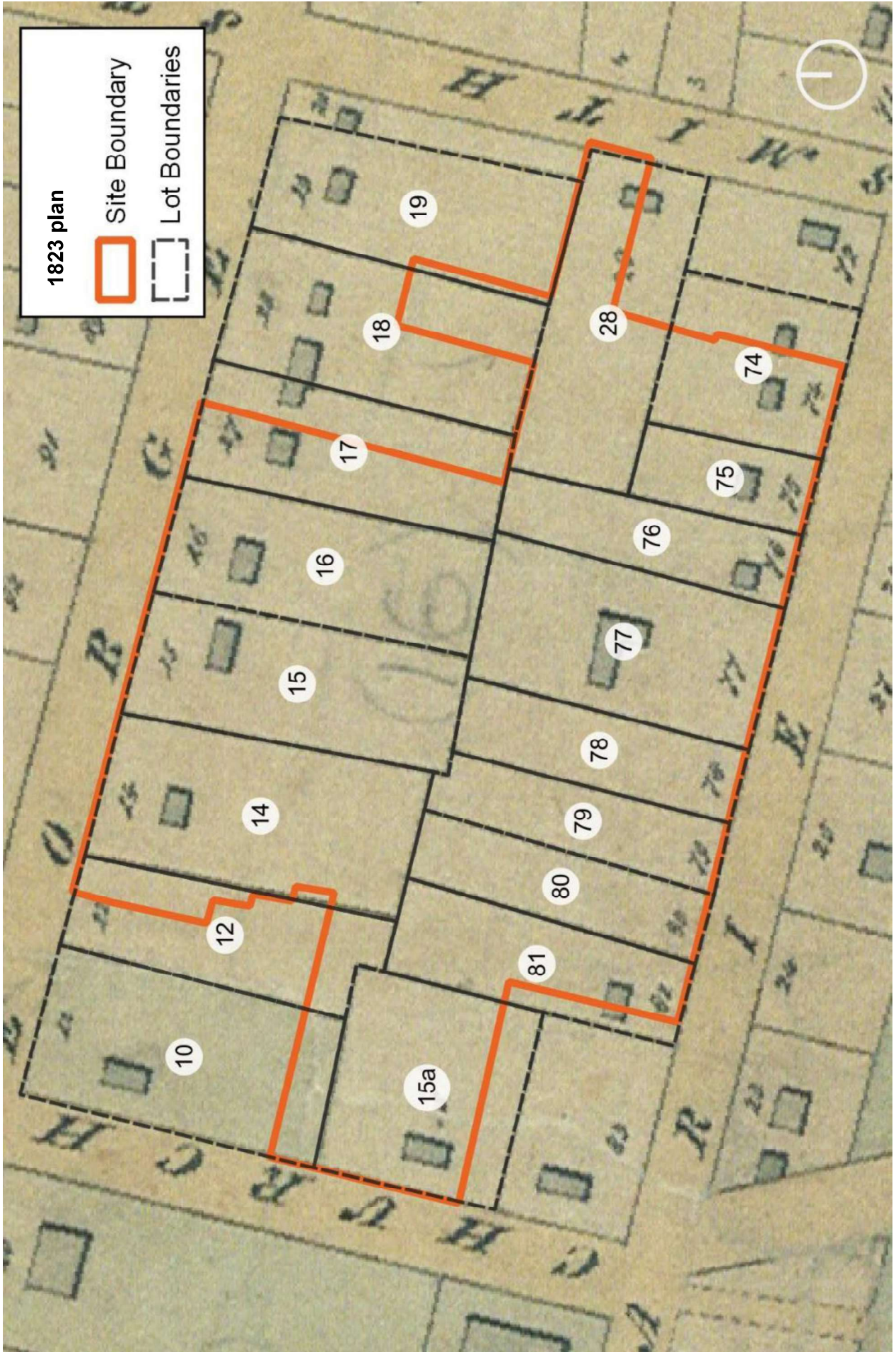


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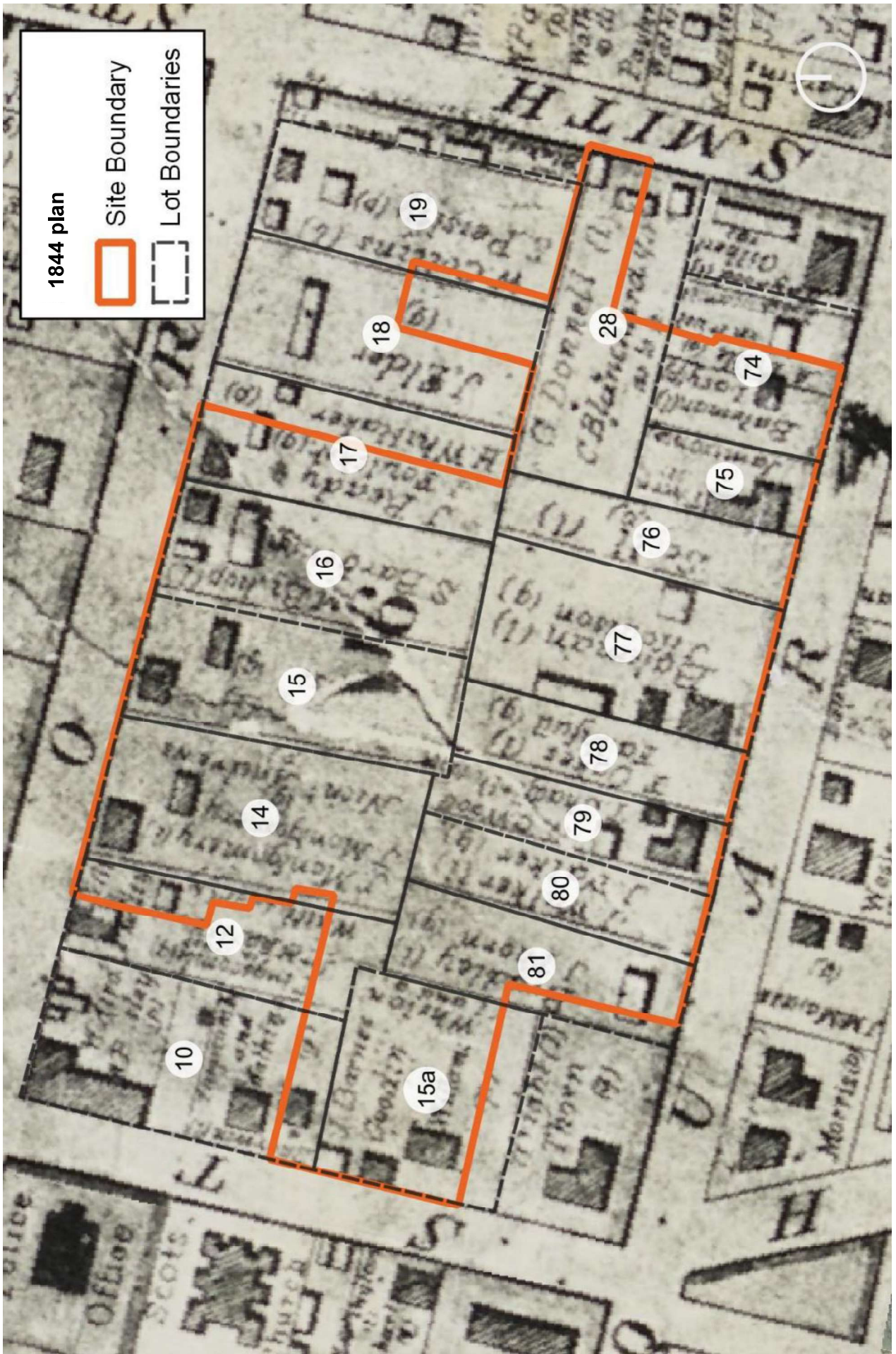
Site Boundary

Lot Boundaries









1844 plan



Site Boundary



Lot Boundaries

10

12

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15a

81

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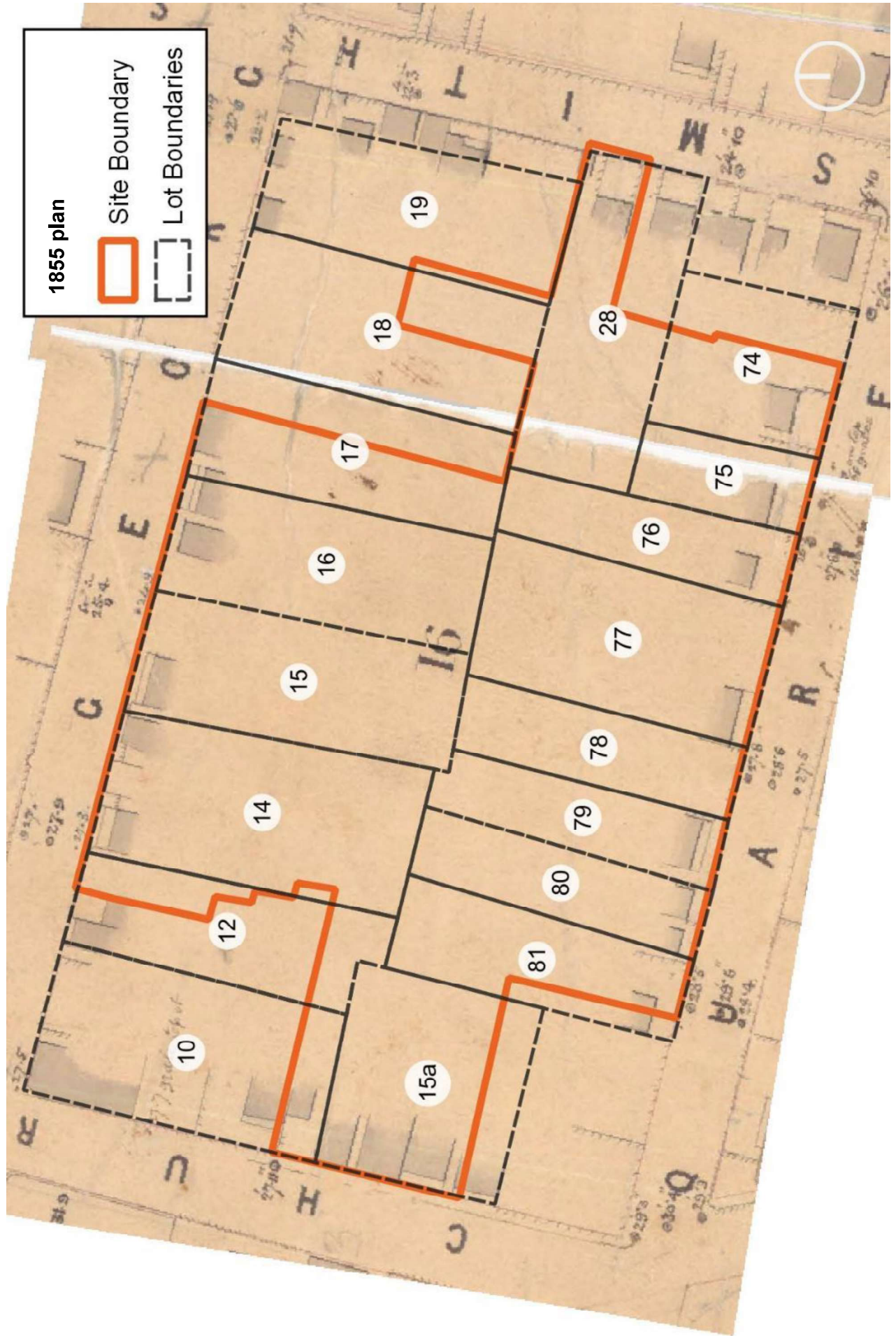
1855 plan



Site Boundary



Lot Boundaries



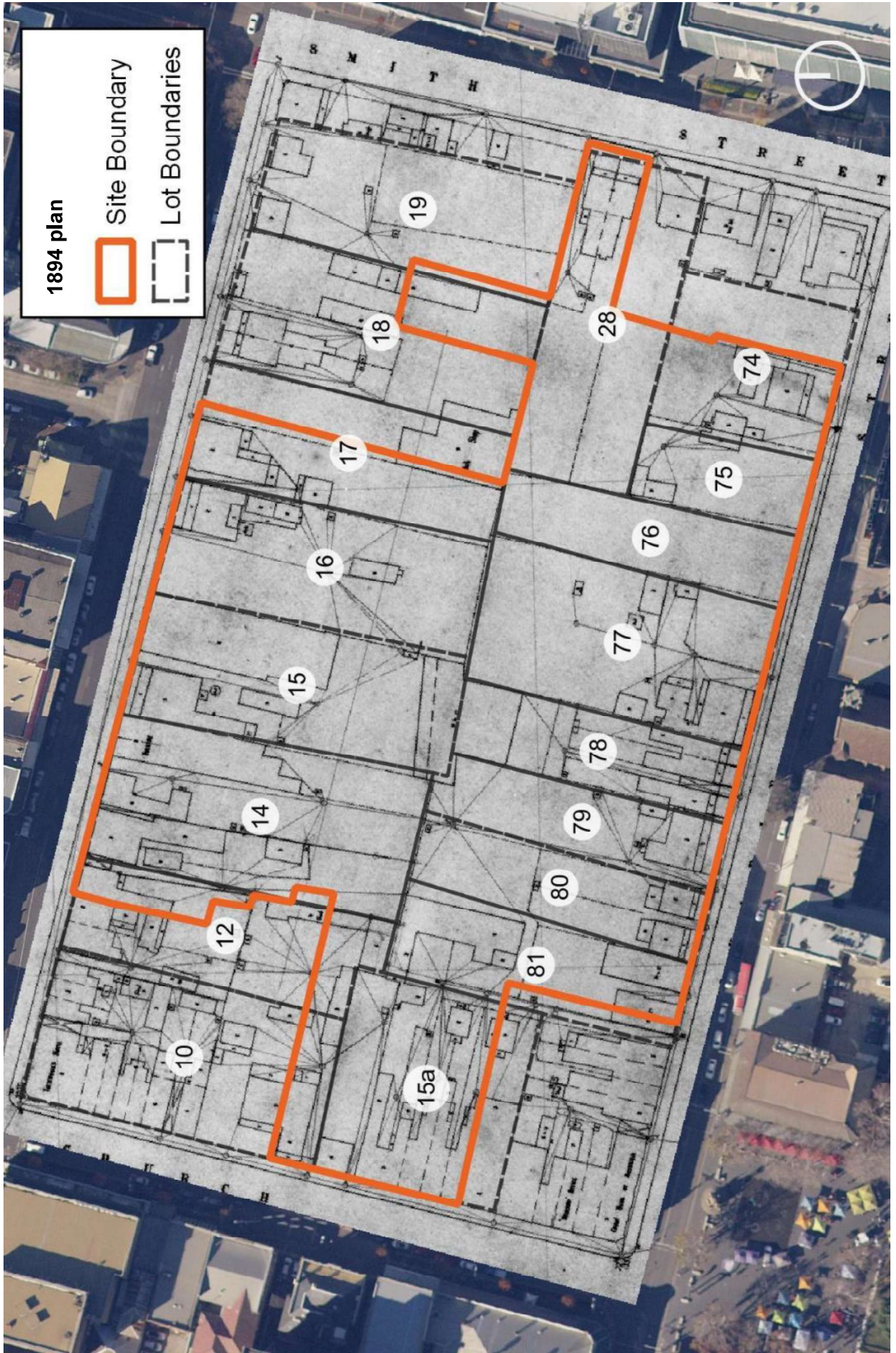
1894 plan



Site Boundary



Lot Boundaries



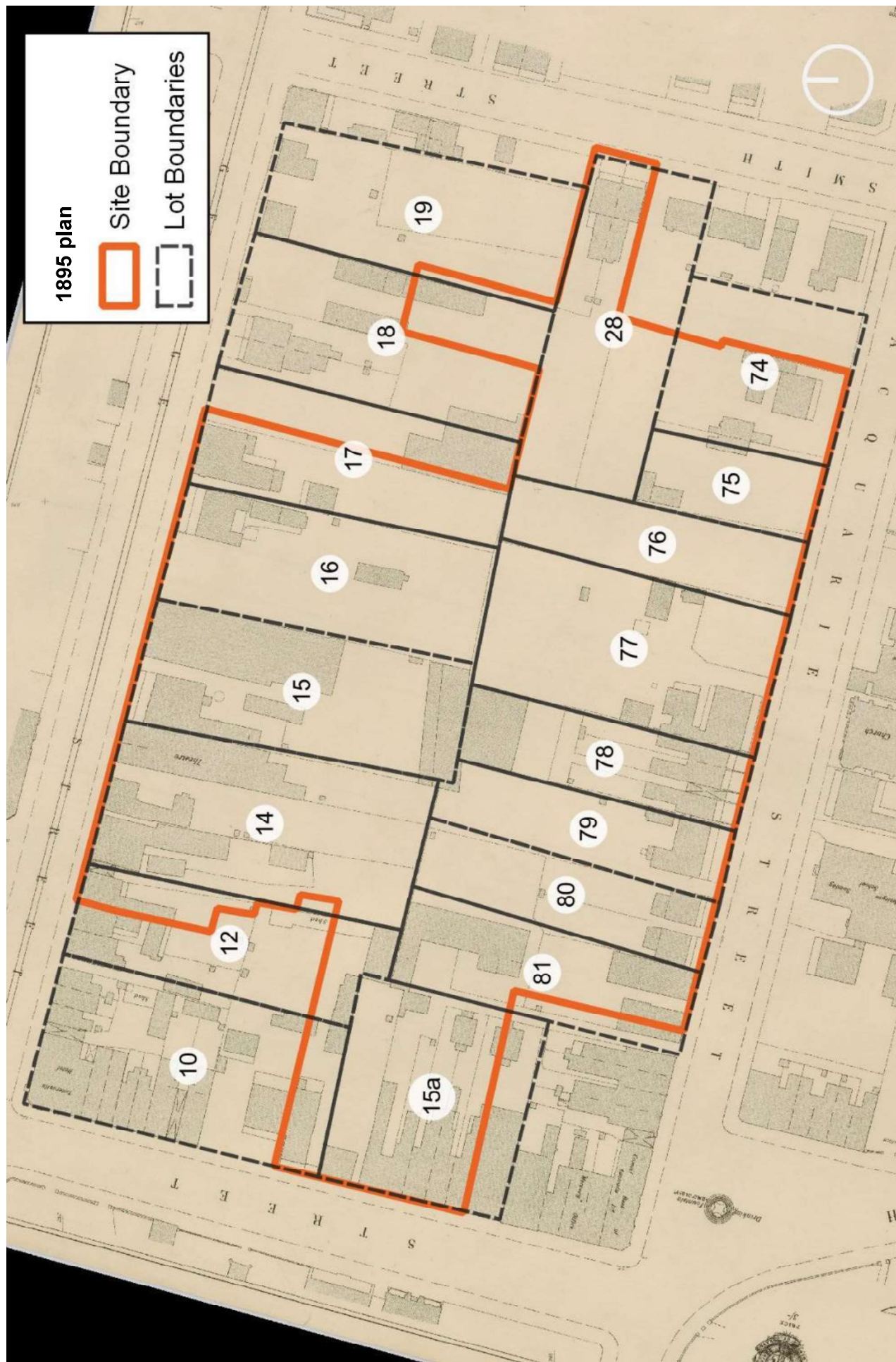
1895 plan



Site Boundary

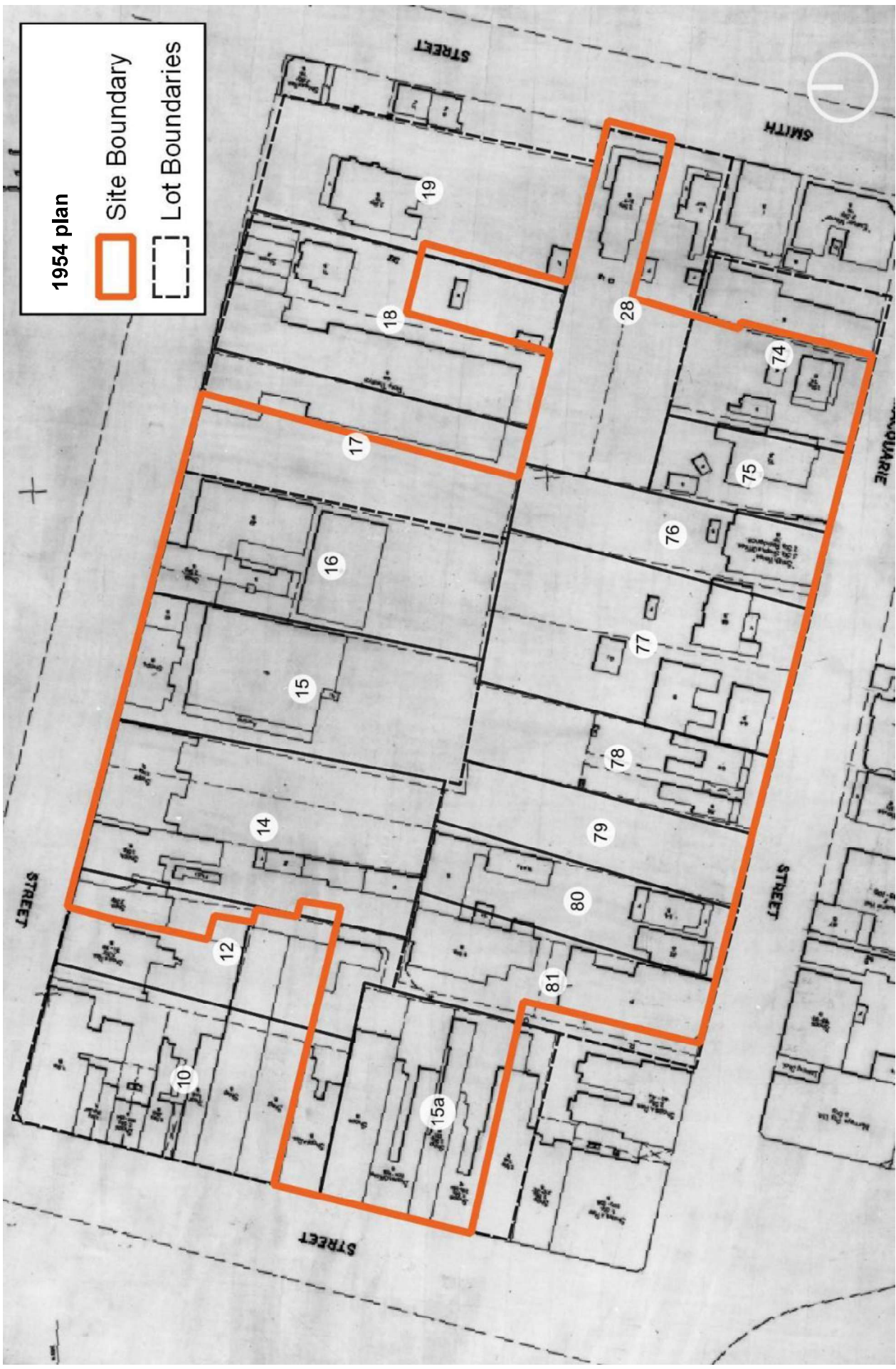


Lot Boundaries



1954 plan

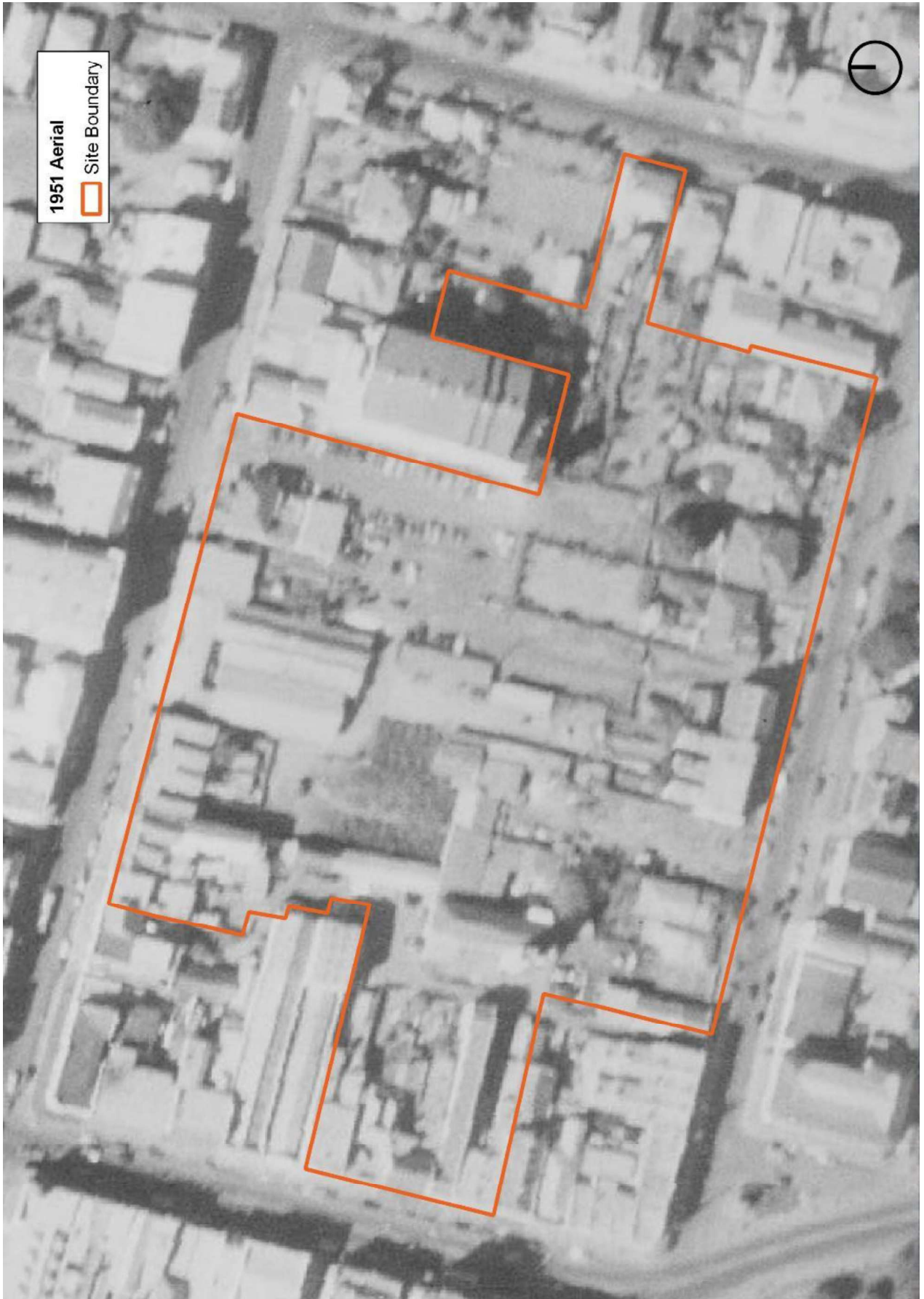
- Site Boundary
- Lot Boundaries



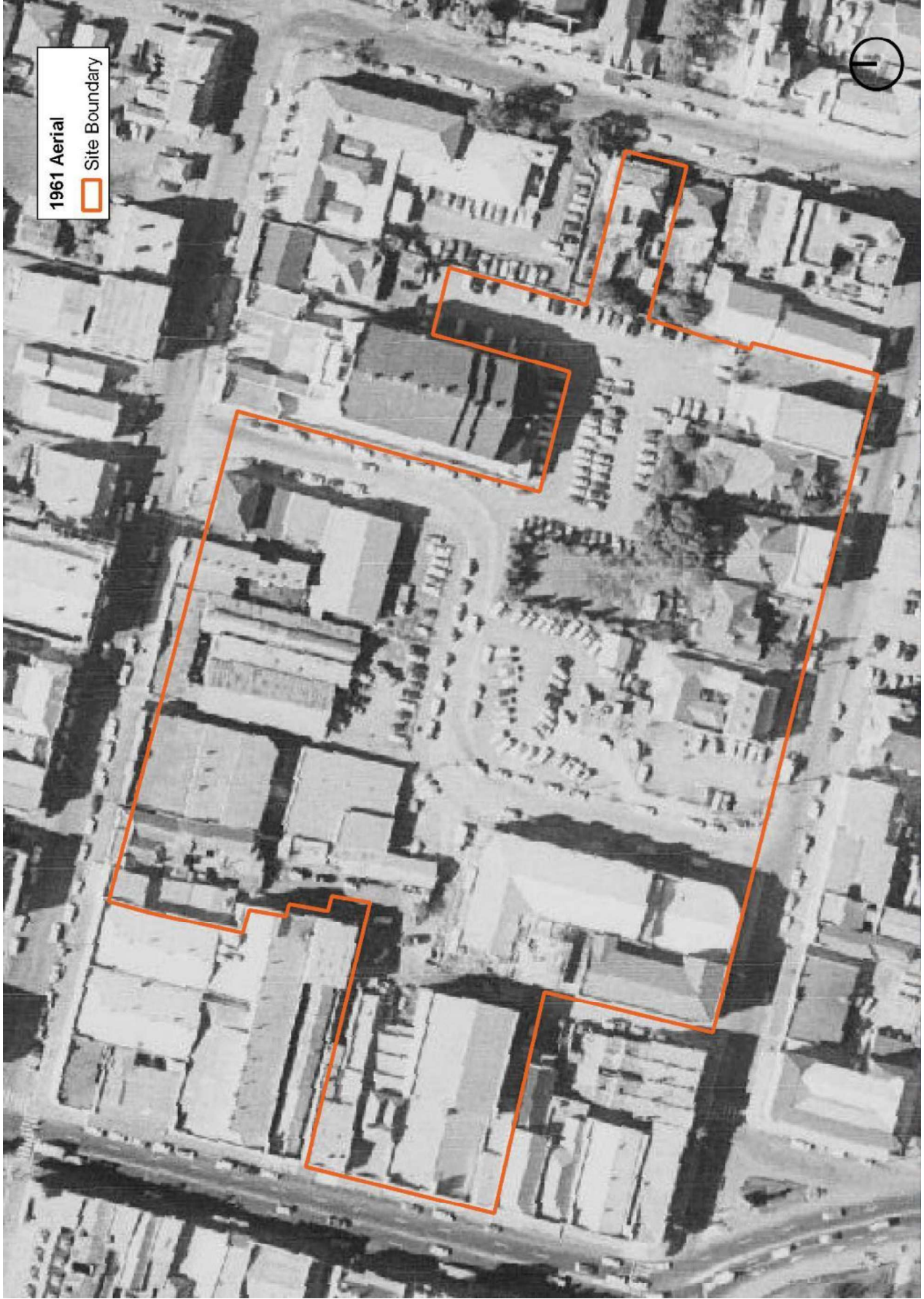


1943 Aerial
Site Boundary

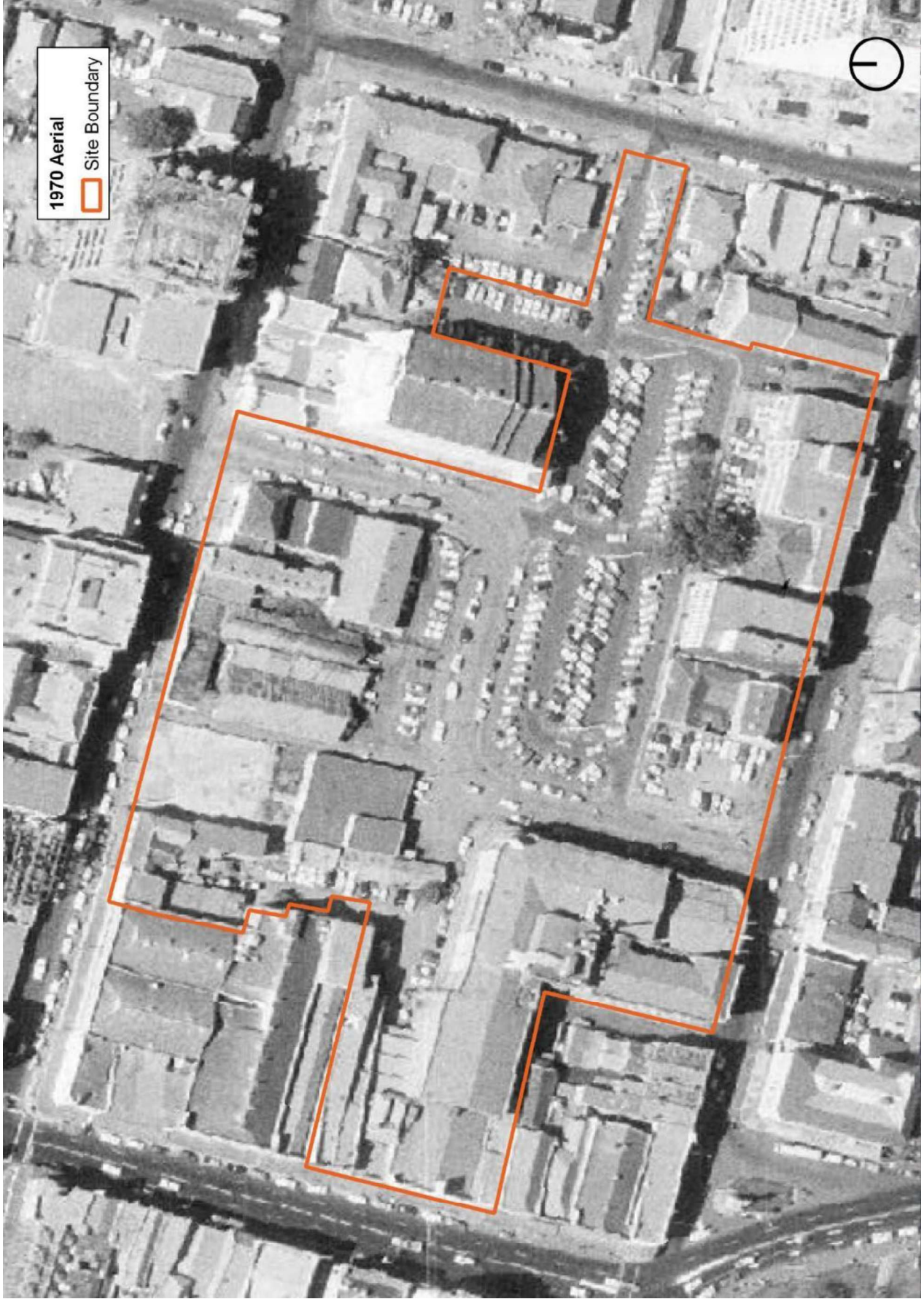




1951 Aerial
Site Boundary



1961 Aerial
Site Boundary

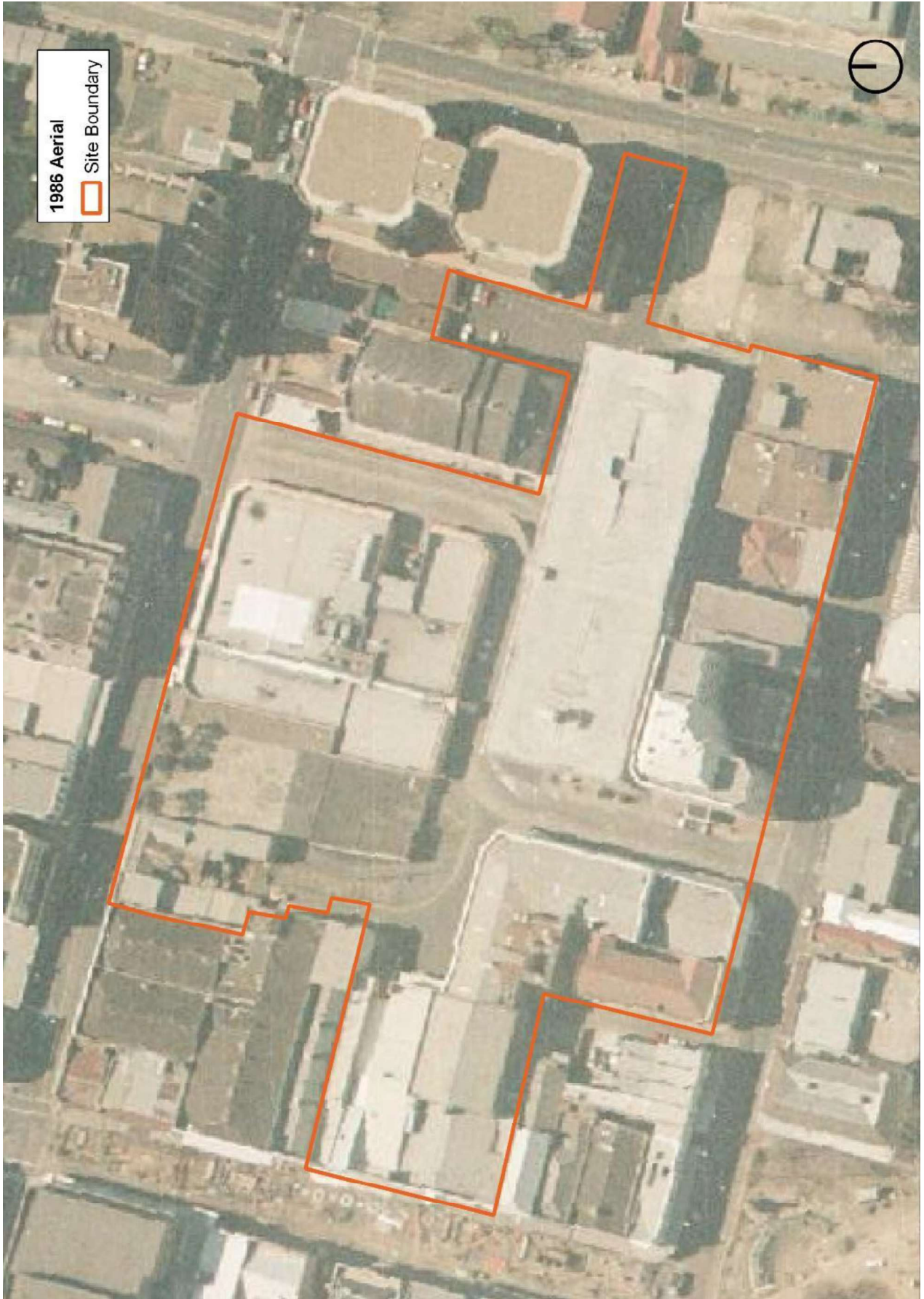


1970 Aerial
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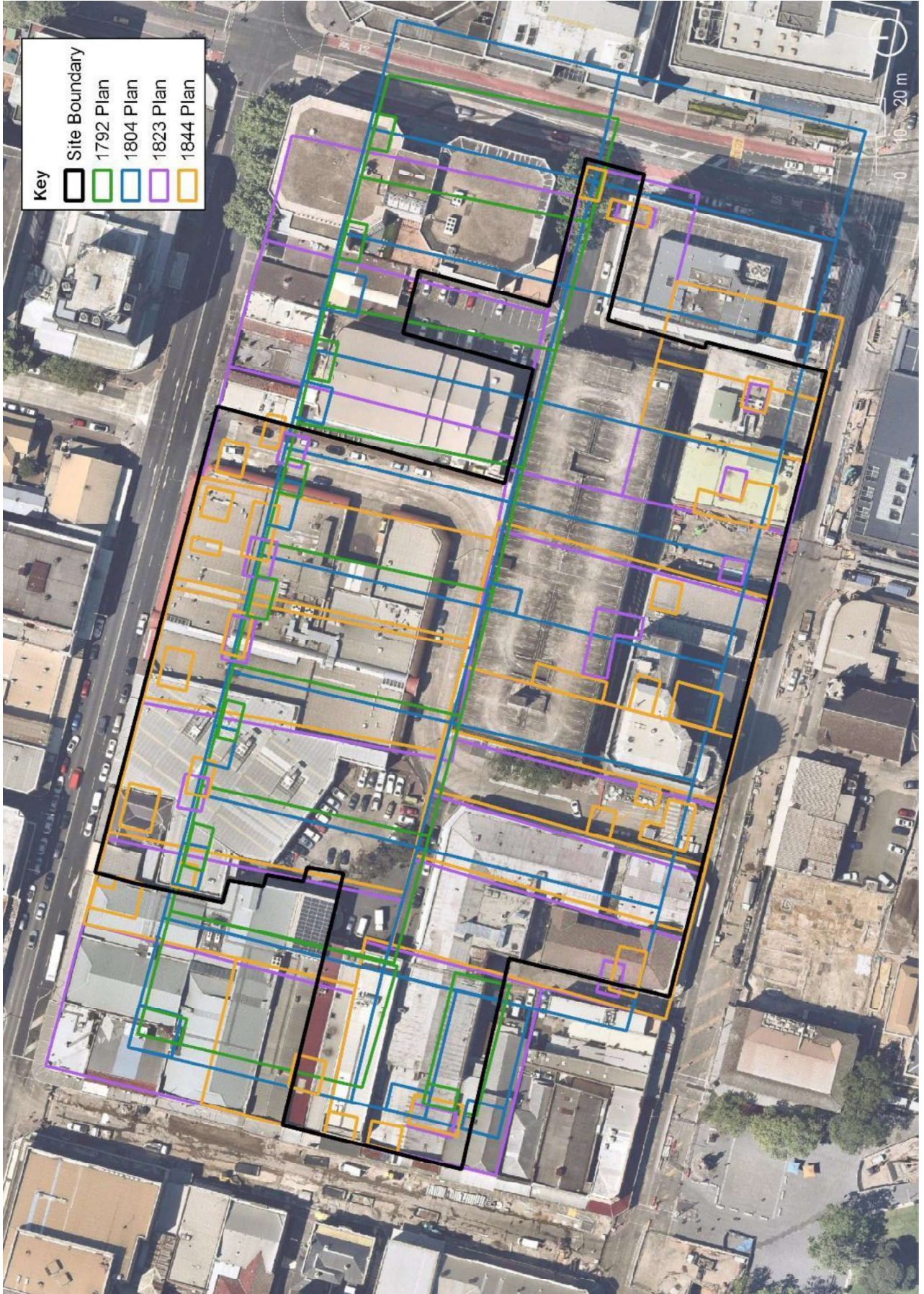
1978 Aerial
Site Boundary








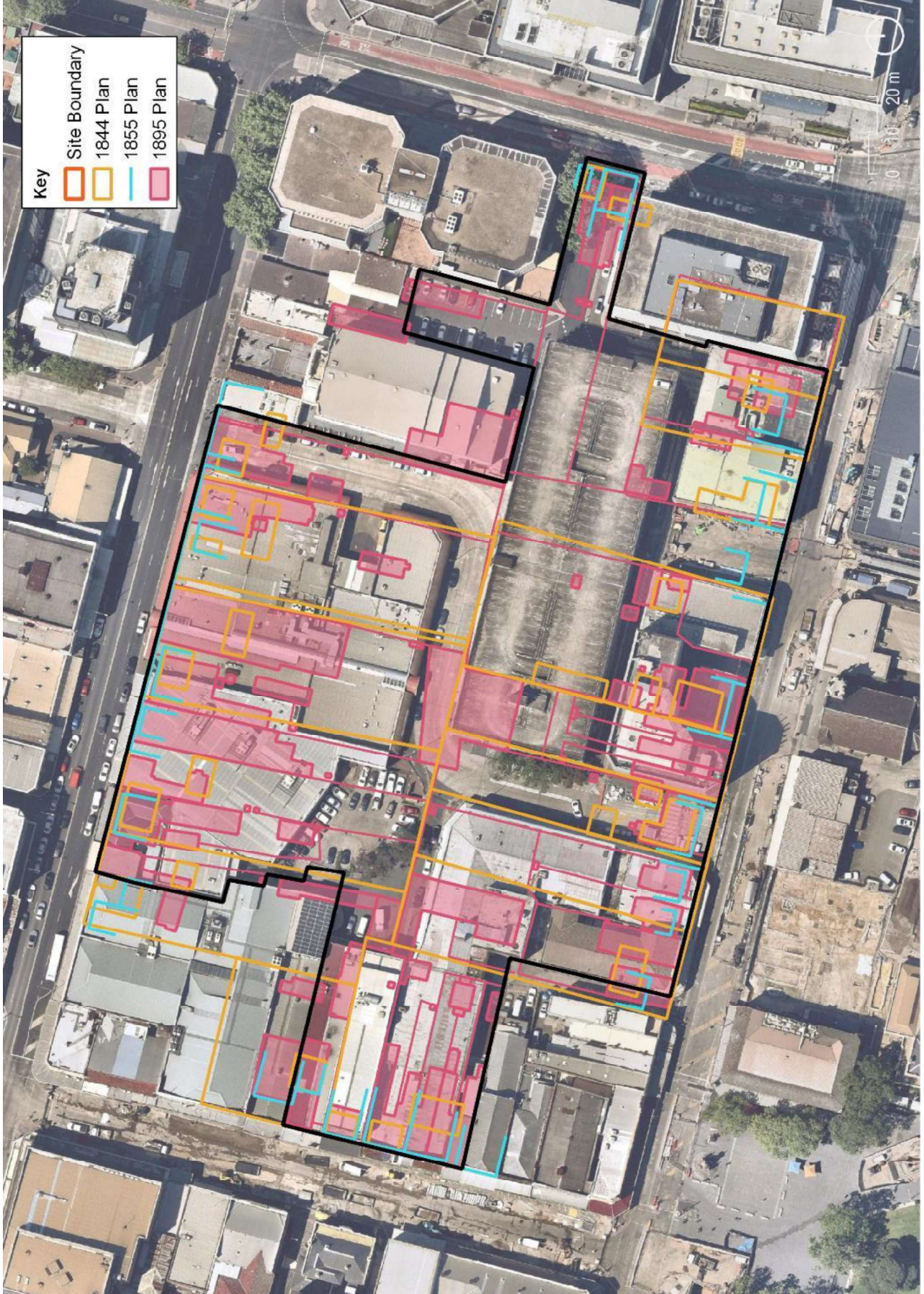
1986 Aerial
Site Boundary





Key	
	Site Boundary
	1792 Plan
	1804 Plan
	1823 Plan
	1844 Plan

0 10 20 m

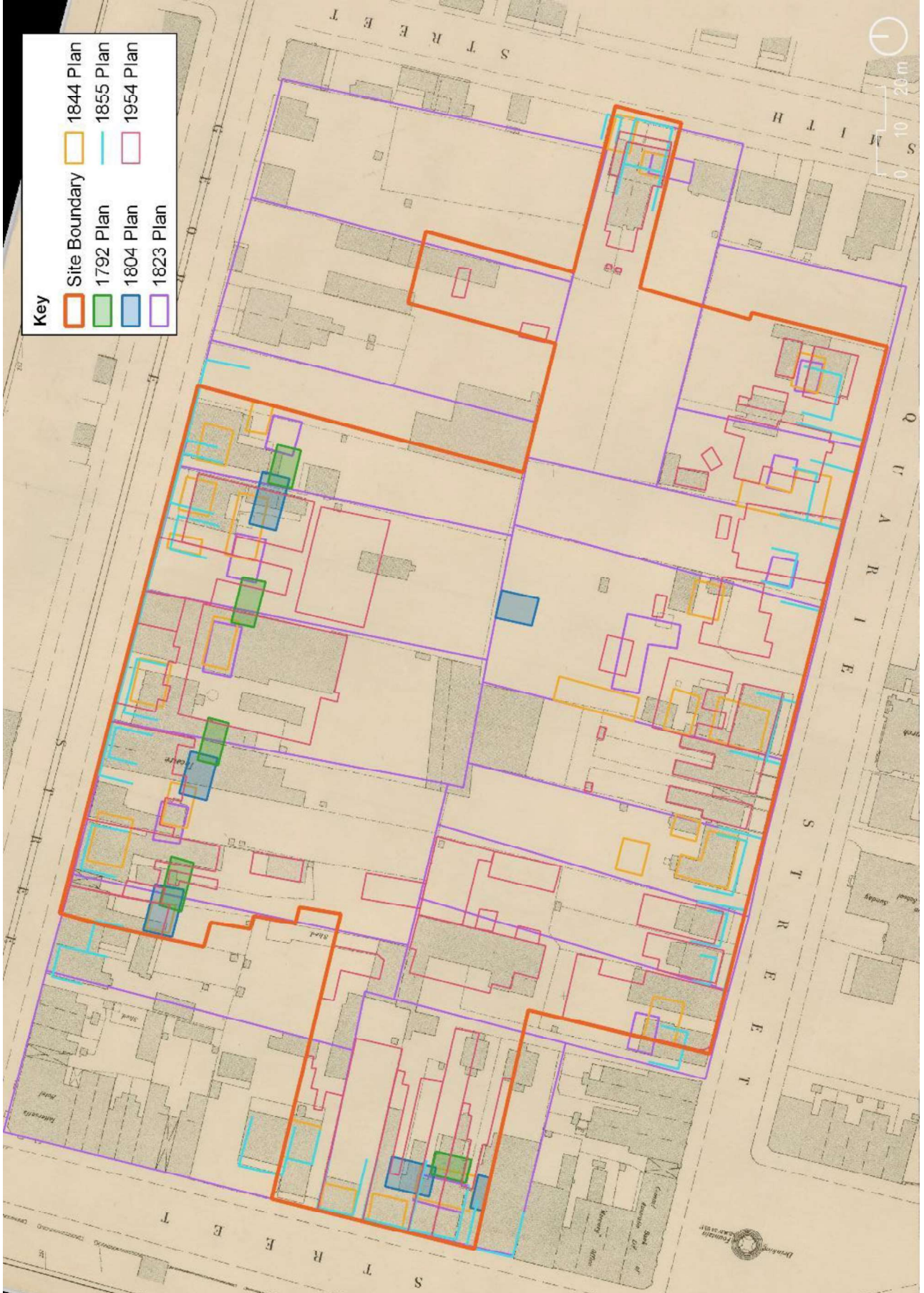


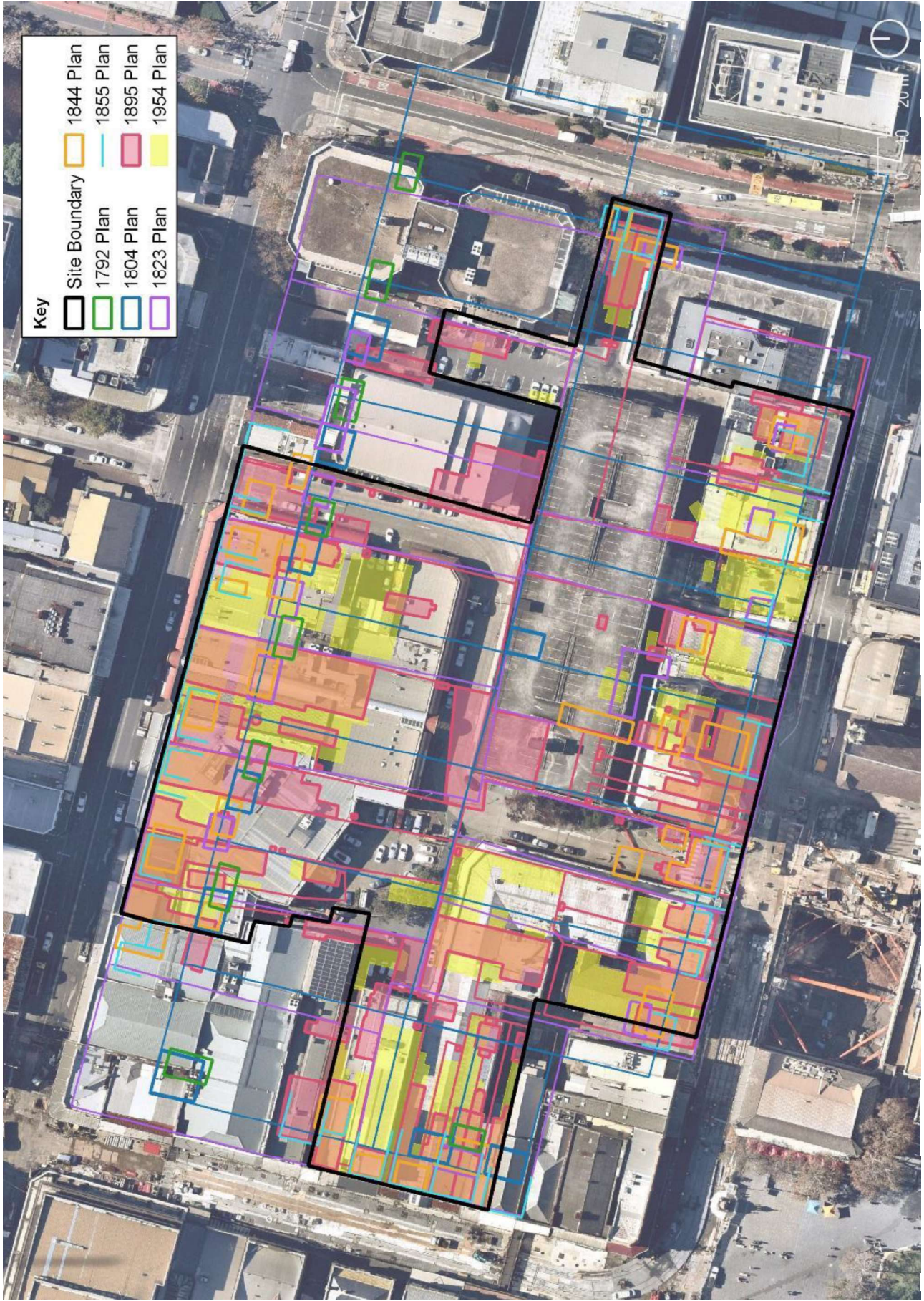
Key

- Site Boundary
- 1844 Plan
- 1855 Plan
- 1895 Plan

0 10 20 m







Key	
	Site Boundary
	1792 Plan
	1804 Plan
	1823 Plan
	1844 Plan
	1855 Plan
	1895 Plan
	1954 Plan

Appendix B

Sydney Metro Unexpected Finds Procedure



Sydney Metro Unexpected Heritage Finds Procedure

SM-18-001105232

Metro Body of Knowledge (MBoK)

Applicable to:	Sydney Metro
Document Owner:	Senior Heritage Advisor
System Owner:	Director Environment, Sustainability and Planning
Status:	Final
Version:	4.1
Date of issue:	May 2021
Review date:	May 2022 (every year or as required)
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1. Introduction

1.1. Purpose

This procedure has been prepared to provide a consistent approach to the management of unexpected Aboriginal and non-Aboriginal heritage uncovered during Sydney Metro activities. It applies to all Sydney Metro activities, both the pre-construction (prior to the Construction Heritage Management Plan approval) and construction phase (post Construction Heritage Management Plan approval) and pre or post-approval activities that are subject to the NSW *Heritage Act (1977)* (Heritage Act) and the *National Parks and Wildlife Act 1974* (NPW Act).

In NSW, there are strict laws to protect and manage both Aboriginal and non-Aboriginal heritage. As a result, appropriate management measures need to be implemented to avoid or minimise impacts, ensure compliance with statutory requirements, and to minimise the risk of penalties to individuals, Sydney Metro and its contractors. This procedure includes Sydney Metro's heritage notification obligations under the Heritage Act, NPW Act and the *Coroner's Act 2009* and the requirements of the conditions of approval (CoA) issued by NSW Department of Planning, Industry and Environment.

Note that a Contractor must not amend the *Sydney Metro Unexpected Finds Procedure* or use a different procedure without the prior approval of Sydney Metro.

This procedure must be read in conjunction with the relevant approval conditions, contract documents and other plans and procedures including the *Sydney Metro Exhumation Management Procedure*, in addition to any other relevant documents as developed by the contractor for the delivery of Sydney Metro activities.

1.2. Scope

This procedure applies to the discovery of any unexpected heritage item, where the find is not anticipated in an approved Archaeological Research Design (ARD) or Archaeological Method Statement (AMS) or other project specific document related to heritage. It applies to all Sydney Metro activities.

This procedure must be followed by all Sydney Metro staff, contractors, subcontractors or any person undertaking work for Sydney Metro. It includes references to some of the relevant legislative and regulatory requirements, but is not intended to replace them.

This procedure *does not apply* to:

- the discovery and disturbance of heritage items as a result of investigations being undertaken in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW4376 2010*¹; an Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act; or a permit approval issued under the Heritage Act;
- the discovery and disturbance of heritage items as a result of construction related activities, where the disturbance is permissible in accordance with an AHIP or an approval issued under the Heritage Act or State Significant Infrastructure (SSI) /State Significant Development (SSD) planning approval; or

- the discovery and disturbance of a heritage item of local significance, where the find is identified and anticipated to occur in an AMS or ARD.

Construction Environment Management Plans (CEMP) should reference or include this procedure. Where there is an approved CEMP, it must be followed in the first instance. Where there is a difference between approved CEMPs and this procedure, the approved CEMP must be followed. Where an approved CEMP does not provide sufficient detail on particular issues, this procedure should be used as a reference.

1.3. Definitions and abbreviations

1.3.1. What is an unexpected heritage find?

An ‘unexpected heritage find’ can be defined as:

- any unanticipated discovery of an Aboriginal object or archaeological work or relic, which Sydney Metro does not have approval to disturb and/or is not covered under an existing management process or plan
- a find that has not been identified or assessed in a project assessment or document related to heritage
- a find that is not referenced in an archaeological research design (ARD) or archaeological method statement (AMS)
- a find that is not covered by an existing approval under the NPW Act or Heritage Act.

1.3.2. Abbreviations

All terminology in this document is taken to mean the generally accepted or dictionary definition. Other terms and jargon specific to this document are defined within the [SM-17-0000203 Sydney Metro glossary](#). Acronyms specific to this document are listed below.

	Definitions
AHIP	Aboriginal Heritage Impact Permit
Aboriginal object	An Aboriginal object is any deposit, object or material evidence (not being a handcraft made for sale) relating to the Aboriginal habitation of the area, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains. An Aboriginal object may include a shell midden, stone tools, bones, rock art, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps.
ARD	Archaeological Research Design
AMS	Archaeological Method Statement
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CSSI	Critical State Significant Infrastructure
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>

Disturbance	Disturbance is considered to be any physical interference to an item that results in it being destroyed, defaced, damaged, harmed, impacted or altered in any way (this includes archaeological investigation activities).
Excavation Director	A person that has been determined by the Heritage Council of NSW or delegate to meet the Criteria for Assessment of Excavation Directors (4 September 2019 and as updated) and can therefore competently archaeologically investigate a site of either local and/or state significance.
Heritage Act	NSW <i>Heritage Act 1977</i>
NPW Act	NSW <i>National Parks and Wildlife Act 1974</i>
Heritage NSW	Formerly Office of Environment and Heritage (OEH). Now Heritage NSW as part of the Department of Premier and Cabinet NSW.
IMS	Integrated Management System (IMS)
Relic (non-Aboriginal heritage)	A relic means any deposit, artefact, object or material evidence that: <ul style="list-style-type: none"> a) relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and b) is of State or local significance.
SSD	State Significant Development
SSI	State Significant Infrastructure
TfNSW	Transport for New South Wales
Work (non-Aboriginal heritage)	Archaeological features such as historic utilities or buried infrastructure that provide evidence of prior occupations such as former rail or tram track, timber sleepers, kerbing, road pavement, fences, culverts, historic pavement, buried retaining walls, cisterns, conduits, sheds or building foundations, but are also subject to assessment by the Excavation Director to determine its classification.

1.4. Accountabilities

The Director Environment, Sustainability and Planning is accountable for this document including approving the document, monitoring its effectiveness and performing a formal document review.

Direct Reports to the Chief Executive are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

Direct Reports to the Chief Executive who are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this document.

2. Types of unexpected heritage finds and their statutory protections

Project, field and environmental personnel (including construction contractors) are critical to the early identification and protection of unexpected heritage finds.

Appendix 1 illustrates the wide range of heritage items uncovered to date during Transport for NSW projects and provides an understanding of what unexpected finds may look like.

Unexpected heritage finds are categorised as either:

- (a) Aboriginal objects;
- (b) Historic (non-Aboriginal) heritage items; or
- (c) Human skeletal remains.

The relevant legislation that applies to each of these categories is described below.

2.1. Aboriginal objects

The NPW Act provides the basis for the care, protection and management of Aboriginal objects and places in NSW.

An Aboriginal object is defined as: *any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*

An 'Aboriginal place' is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture. An Aboriginal place does not have to contain physical evidence of occupation (such as Aboriginal objects).

Under section 87 of the Act, it is an offence to harm or desecrate an Aboriginal object or place. There are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an AHIP and the permit's conditions were not contravened. Defences and exemptions to the offence of harming an Aboriginal object or Aboriginal place are provided in section 87, 87A and 87B of the Act. A person must notify Heritage NSW if a person is aware of the location of an Aboriginal object.

Penalties for some of the offences can include two years imprisonment and/or up to \$550,000 (for individuals), and a maximum penalty of \$1.1 million (for corporations).

Examples of Aboriginal objects include stone artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

IMPORTANT!

All Aboriginal objects, regardless of significance, are protected under law.

If any impact is expected to an Aboriginal object, an AHIP is usually required from Heritage NSW. When a person becomes aware of an Aboriginal object they must notify the Director-General of Heritage NSW about its location. Assistance on how to do this is provided in section 4 (Step 5).

2.2. Historic (non-Aboriginal) heritage items

The Heritage Act provides for the care, protection and management of heritage items in NSW. Historic (non-Aboriginal) heritage items include:

- archaeological 'relics' as defined under the Heritage Act; and

- other items such as works, buildings or movable objects, which are not considered 'relics' under the Act.

2.2.1. Archaeological relics

Under section 139, it is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by Heritage NSW under the Act.

A relic is defined as: *'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.'*

A person must notify Heritage NSW, if a person is aware or believes that they have discovered or located a relic (section 146). Penalties for offences under the Heritage Act can include six months imprisonment and/or a fine of up to \$1.1million.

IMPORTANT!

All relics are subject to statutory controls and protection.

If a relic is likely to be disturbed, an approval is usually required from the Heritage Council of NSW. When a person discovers a relic, they must notify the Heritage Council of NSW of its location.

2.2.2. Other items

Some historic heritage items are not considered to be 'relics', but are instead referred to as works, buildings, structures or movable objects. Examples of these items that may be encountered include culverts, historic pavements, retaining walls, tramlines, rail tracks, turn tables, timber sleepers, cisterns, fences, sheds, buildings and conduits.

Usually archaeological relics are uncovered via a process of excavation or soil removal. When an unexpected find is uncovered, an archaeological excavation permit under section 140 or section 60 of the Heritage Act may be required to further investigate or remove it if investigation is not covered by an existing approval. In contrast, 'other historic items' either exist above the ground surface (for example a shed), or they are designed to operate and exist beneath the ground surface (for example a culvert). They may also need a permit to alter, disturb or remove them if there is not an approval already in place.

2.3. Human skeletal remains

The *Sydney Metro Exhumation Management Procedure* provides a more detailed explanation of the approval processes related to human skeletal remains.

Human skeletal remains can be classified as:

- reportable deaths
- Aboriginal objects; or

- relics

Where it is suspected that less than 100 years has elapsed since death, human skeletal remains come under the jurisdiction of the State Coroner and the *Coroners Act 2009* (NSW). Under s35(2) of the Act, a person must report a death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old regardless of ancestry. Public health controls may also apply.

Where the remains are suspected of being more than 100 years old, they are considered to be either Aboriginal objects or non-Aboriginal relics, depending on the ancestry of the individual. Aboriginal human remains are protected under the NPW Act, while non-Aboriginal heritage remains are protected under the Heritage Act.

The discovery of Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under s20 (1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.

IMPORTANT!

All human skeletal remains are subject to statutory controls and protections.

All bones must be treated as potential human skeletal remains and work around them must stop while they are appropriately protected and investigated, the relevant authorities notified and approvals received.

3. Unexpected heritage finds procedure

In the event that an unexpected find is encountered on a Sydney Metro project, the steps summarised in Figure 1 and detailed in Table 1 must be followed. There are seven steps in the procedure.

IMPORTANT!

Sydney Metro may have approval to impact certain heritage items during construction. If you think that you may have discovered a heritage item and you are unsure whether an approval is in place or not, **STOP** work and follow this procedure.

Figure 1: Summary of steps to be taken on the discovery of an unexpected heritage item

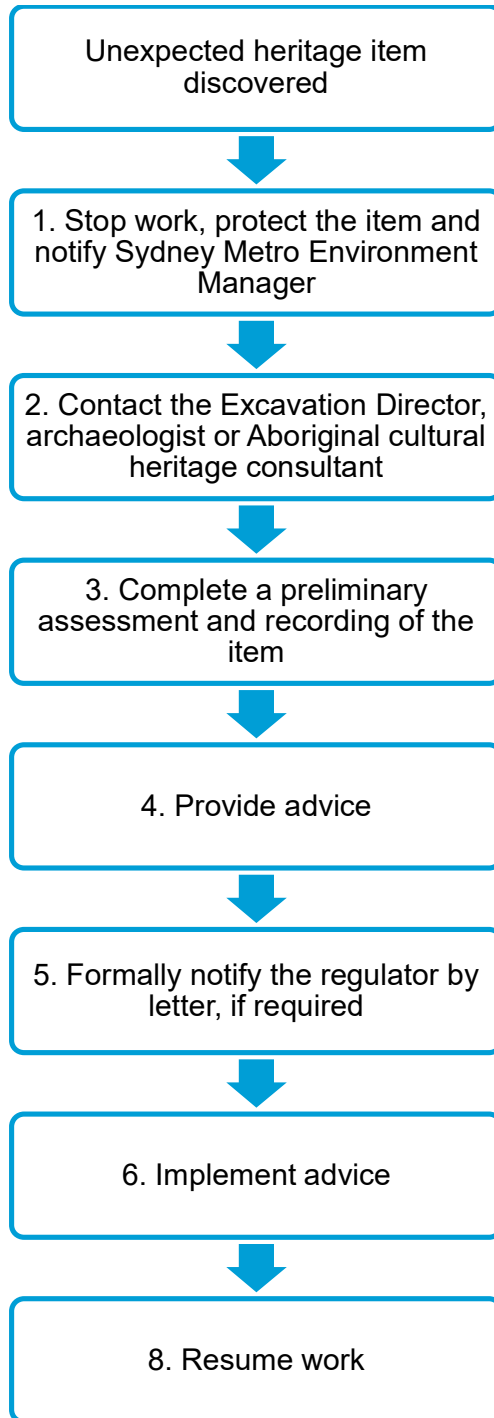


Table 1: Specific tasks to be implemented following the discovery of an unexpected heritage item

Step	Task	Responsibility	Guidance and tools
1	Stop work and protect the item		
1.1	Stop all work in the immediate area of the item and notify the Project Manager	Contractor / Supervisor	Appendix 1 Identifying Unexpected Heritage Items
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. No ground disturbing work is to be undertaken within this zone until further archaeological investigations are completed, and if required, appropriate approvals are obtained. Inform all on-site personnel about the no-go zone.	Contractor's Project Manager or Supervisor	
2	Engage an archaeologist		
2.1	Contact the nominated Excavation Director, archaeologist or Aboriginal cultural heritage consultant to discuss the location and nature of the item and arrange an inspection. The project CEMP should contain the contact details of the archaeologist. Provide as much information as possible to the Excavation Director, archaeologist or Aboriginal cultural heritage consultant, including photographs of the item. Inform the Sydney Metro Environment Manager, and keep them involved in the process. The Environment Manager will inform the Sydney Metro Senior Heritage Advisor.	Contractor's Project Manager	
2.2	Where there is no project Excavation Director, archaeologist or Aboriginal cultural heritage consultant engaged for the work, engage a suitably qualified consultant to assess the find. If the find is likely to be an Aboriginal object, engage a suitably qualified and experienced Aboriginal cultural heritage consultant. If the find is a non-Aboriginal heritage item, engage a suitably qualified and experienced historical archaeological consultant.	Contractor's Project Manager	

Step	Task	Responsibility	Guidance and tools
3	Preliminary assessment and recording		
3.1	<p>Occasionally, the Excavation Director, archaeologist or Aboriginal cultural heritage consultant may determine from the photographs provided at Step 2.1 that it is not necessary to inspect the item because no heritage constraint exists for the project (for example the item is not an Aboriginal object or archaeological relic).</p> <p>This advice should be provided in writing (for example via email or letter with the consultant's name and company clearly identifiable) to the Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor.</p>	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	Proceed to Step 7
3.2	<p>Arrange access for the Excavation Director, archaeologist or Aboriginal cultural heritage consultant to inspect the item as soon as practicable. In most cases, a site inspection is required to conduct a preliminary assessment.</p>	Contractor's Project Manager / Excavation Director	
3.3	<p>Subject to the Excavation Director, archaeologist or Aboriginal cultural heritage consultant's assessment, work may recommence at a set distance from the item. This is to protect any other archaeological evidence that may exist in the vicinity, which may have not yet been uncovered.</p> <p>The 'no-go zone' established in Step 1.2 may need to be adjusted to reflect the area of archaeological potential, as determined by the Excavation Director, archaeologist or Aboriginal cultural heritage consultant.</p>	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
3.4	<p>Has the item been damaged or harmed?</p> <p>If yes, record the incident in the Incident Management System. Implement any additional reporting requirements related to the planning approval and CEMP where relevant</p>	Contractor's Project Manager / Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
3.5	<p>Can the work avoid further impact to the item?</p> <p>Project Manager to confirm with Sydney Metro Environment Manager.</p>	Contractor's Project Manager	

Step	Task	Responsibility	Guidance and tools
3.6	Record the item and complete the Unexpected Heritage Item Recording Form.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	<p>Appendix 2 Unexpected Heritage Item Recording Form</p> <p>Appendix 3 Photographing Unexpected Heritage Items</p>
3.7	<p>Is the item likely to be bone?</p> <p>If yes, follow the steps in Appendix 4 'Uncovering bones'. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site. Also refer to the Sydney Metro Exhumation Management Procedure.</p> <p>If no, proceed to the next step.</p>	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
3.8	<p>The Excavation Director, archaeologist or Aboriginal cultural heritage consultant may provide advice after the inspection and preliminary assessment that no heritage constraint exists for the project (for example the item is not an Aboriginal object or relic).</p> <p>This advice should be provided in writing (for example via email or letter with the consultant's name and company clearly identifiable) to the Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor.</p>	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	Proceed to Step 7
3.9	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). The Excavation Director, archaeologist or Aboriginal cultural heritage consultant can provide contacts for such specialist consultants.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
4	Provide advice		
4.1	The Excavation Director, archaeologist or Aboriginal cultural heritage consultant should provide written advice with input from Registered Aboriginal Parties where appropriate. The plan should include as a minimum a) a description of the item, b) an assessment of the significance of the item, c) approval or statutory notification requirements, d) reporting requirements, e) consultation requirements, and f) relevance	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	<p>Appendix 4 Archaeological / heritage advice checklist</p> <p>Other references DECCW 2010, Aboriginal Cultural Heritage Consultation</p>

Step	Task	Responsibility	Guidance and tools
	to other project approvals or management plans.		Requirements for Proponents 2010 DECCW 2010, Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW Heritage Branch 2009, Assessing Significance for Historical Archaeological Sites and 'Relics'
4.2	In preparing the advice, the Excavation Director, archaeologist or Aboriginal cultural heritage consultant must review the CEMP, heritage sub-plans, conditions of project approval and associated heritage assessment documentation (for example an Environmental Impact Statement Technical Paper). The Excavation Director, archaeologist or Aboriginal cultural heritage consultant must determine if the item is consistent with previous heritage or project approvals or management plans. The Project Manager must provide all relevant documents to the Excavation Director to assist with this.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
4.3	The Excavation Director, archaeologist or Aboriginal cultural heritage consultant must submit this advice as a report, letter or email to the Project Manager as soon as practicable.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
4.4	The Project Manager, Sydney Metro Environment Manager and Sydney Metro Senior Heritage Advisor should review the advice to ensure that all requirements are addressed and can be reasonably implemented.	Consultant's Project Manager / Sydney Metro Environment Manager / Sydney Metro Senior Heritage Advisor	
5	Notify the regulator, if required		
5.1	Based on the advice and any statutory requirements, is notification to Heritage NSW and the Secretary required? If no, proceed directly to Step 6. If yes, proceed to next step.	Sydney Metro Environment Manager / Sydney Metro Senior Heritage Advisor	

Step	Task	Responsibility	Guidance and tools
5.2	If notification is required, complete the template notification letter and forward with supporting documentation (including advice obtained at Step 4) to the Sydney Metro Environment Manager. The Environment Manager will seek the approval of the Sydney Metro Senior Heritage Advisor and the signature of the Director Project Environment, Sustainability & Planning or Director Environment, Sustainability & Planning	Sydney Metro Environment Manager	Appendix 5 Template Notification Letter
5.3	<p>Forward the signed notification letter to Heritage NSW once approved and cc Sydney Metro.</p> <p>Informal notification (via a phone call or email) to Heritage NSW prior to sending the letter is appropriate.</p> <p>The advice and completed Unexpected Heritage Item Recording Form (Appendix 2) must be submitted with the notification letter (for both Aboriginal objects and non-Aboriginal relics).</p> <p>If the item is an archaeological relic as defined under the Act, a section 146 notification form must also be completed and sent to Heritage NSW as part of the notification.</p>	Sydney Metro Environment Manager	Appendix 2 Unexpected Heritage Item Recording Form Appendix 5 Template Notification Letter
5.4	A copy of the final signed notification letter, archaeological or heritage management plan and the Unexpected Heritage Item Recording Form is to be kept on file and a copy sent to the Sydney Metro Project Manager	Sydney Metro Environment Manager / Contractor's Project Manager	
6	Implement advice		
6.1	The advice should be modified to take into account any additional advice resulting from notification and discussions with the regulator if required.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
6.2	Implement advice. Where impact cannot be avoided, this could include a formal assessment of heritage significance and impact assessment, preparation of excavation or recording methodologies, consultation with Registered Aboriginal Parties and obtaining heritage approvals if required.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	DECCW 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 DECCW 2010, Code of Practice for the Archaeological Investigation of

Step	Task	Responsibility	Guidance and tools
			Aboriginal Objects in NSW
6.3	Where heritage approvals are required, contact the Sydney Metro Environment Manager for further advice and support. Please note there are time constraints associated with heritage approval preparation and processing.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
6.4	For SSI or SSD projects, or projects approved under Part 5 of the EP&A Act, assess whether the heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning, Industry and Environment or the relevant consent authority.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
6.5	Where statutory approvals (or project modifications) are required, impact upon Aboriginal objects or relics must not occur until heritage and planning approvals have been issued by the appropriate regulator.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
6.6	Where statutory approval is not required but where recording is recommended by the Excavation Director, archaeologist or Aboriginal cultural heritage consultant, sufficient time and resources must be allowed for this to occur.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material recovered from site, where required. Interested third parties (for example local Aboriginal land councils, local councils or museums) should be consulted on this issue. Contact the Excavation Director, archaeologist or Aboriginal cultural heritage consultant for advice on this issue.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
7	Resume work		
7.1	Seek written clearance to resume project work from the Excavation Director, archaeologist or Aboriginal cultural heritage consultant. Clearance would only be given once all archaeological excavation or heritage recommendations and approvals (where required) are complete. Resumption of	Contractor's Project Manager	

Step	Task	Responsibility	Guidance and tools
	project work must be in accordance with all the relevant project and heritage approvals / determinations.		
7.2	If required, ensure archaeological excavation / heritage reporting and other heritage approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and / or disposal strategies.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant / Contractor's Project Manager	
7.3	If additional unexpected heritage items are discovered, this procedure must begin again from Step 1.	All	

4. Responsibilities

Table 2: Roles and responsibilities

Role	Responsibility
Contractor / Supervisor	<p>Stop work immediately when an unexpected heritage item is encountered. Cordon off area until Contractor Environmental Manager / Excavation Director, archaeologist or Aboriginal cultural heritage consultant advises that work can recommence.</p> <p>Manage the process of the identification, protection and mitigation of impacts on the heritage item.</p> <p>Liaise with the Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor.</p> <p>Assist the Excavation Director, archaeologist or Aboriginal cultural heritage consultant with mitigation and statutory requirements.</p> <p>Complete Incident Report and review CEMP for any changes that may be required. Proposed amendments to the CEMP if any changes are required.</p>
Contractor's Project Manager	<p>Ensure all aspects of this procedure are implemented. Advise the Contractor / Supervisor to recommence work if all applicable requirements have been satisfied and the Contractor Environmental Manager/ Excavation Director, archaeologist or aboriginal cultural heritage consultant has approved recommencement of work.</p>
Contractor's Excavation Director / archaeologist or Aboriginal cultural heritage consultant	<p>Provide expert advice to the Contractor and Sydney Metro Environment Manager on find identification, significance, mitigation, legislative procedures and requirements.</p>
Environmental Representative	<p>Ensure compliance with relevant approvals (new and existing) and the Construction Environment Management Plan.</p>
Sydney Metro Environment Manager	<p>Notify the Director Project Environment, Sustainability & Planning of find and help support Contractor with managing Incident Reporting.</p>
Sydney Metro Senior Heritage Advisor	<p>Provide expert advice to Sydney Metro Environment Manager and project as required.</p>

5. Seeking advice

Advice on this procedure should be sought from the Sydney Metro Environment Manager in the first instance. Contractors and delivery partners should ensure their own project environment managers are aware of and understand this procedure.

Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from a suitably qualified and experienced archaeologist / Aboriginal heritage consultant.

6. Related documents and references

Related documents and references

- SM ES-PW-315/5.0 Sydney Metro Exhumation Management Procedure
- SM-17-0000096 Sydney Metro Environmental Incident Classification and Reporting
- 3TP-SD-015/7.0 Transport for NSW Guide to Environmental Control Map
- Roads and Maritime Services, November 2015, Unexpected Heritage Items Heritage Procedure 02
- [SM-17-0000203 Sydney Metro glossary](#)
- Department of Environment, Climate Change and Water 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010
- Department of Environment, Climate Change and Water 2010, Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW
- Heritage Branch Department of Planning 2009, Assessing Significance for Historical Archaeological Sites and 'Relics'

7. Superseded documents

Superseded documents

Sydney Metro Unexpected Heritage Finds Procedure v3.3

8. Document history

Version	Date of approval	Notes
1.1	June 2017	Incorporates Environmental Representative comments
1.2		Amends p13 step 8 reference to s146
1.3		Incorporates Planning Mods 1-4 including amended CoA E20
1.4	March 2018	Incorporates Environmental Representative comments
2.0		Removes SSI 15-7400 COA reference
3.0		Revises definitions
3.1		Revises procedure
3.2		Revises roles and responsibilities
3.3		Minor edits and corrections
4.0	April 2021	Revises definitions and procedure; references the Sydney Metro Exhumation Management Procedure v5 with amendments throughout for consistency with that document.
4.1	April 2021	Updates to related documents and references.

Appendix 1: Examples of unexpected heritage finds



Plate 1: Aboriginal stone artefacts found at the Wickham Transport Interchange, 2015



Plate 2: Aboriginal artefacts (shell material) found at the Wickham Transport Interchange, 2015



Plate 3: 1840s seawall and 1880s retaining wall uncovered at Balmain East, 2016



Plate 4: Sandstone pavers uncovered at Balmain East, 2016



Plate 5: Platform at Hamilton Station classified as a 'work' by the project archaeologist, Wickham Transport Interchange project, 2015



Plate 6: Sandstone flagging and cesspit, Wynyard Walk project, 2014



Plate 7: Chinese Ming Dynasty pottery and English porcelain / pottery dating back to the early nineteenth century, Wynyard Walk project, 2014



Plate 8: Pottery made by convict potter Thomas Ball during the early settlement, Wynyard Walk project, 2014

The following images, obtained from the Roads and Maritime Services Unexpected Heritage Items Heritage Procedure 02.



Plate 9: Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); linear archaeological feature with post holes (Hume Highway Duplication), animal bones (Hume Highway Bypass at Woomargama); cut wooden stake; glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area)

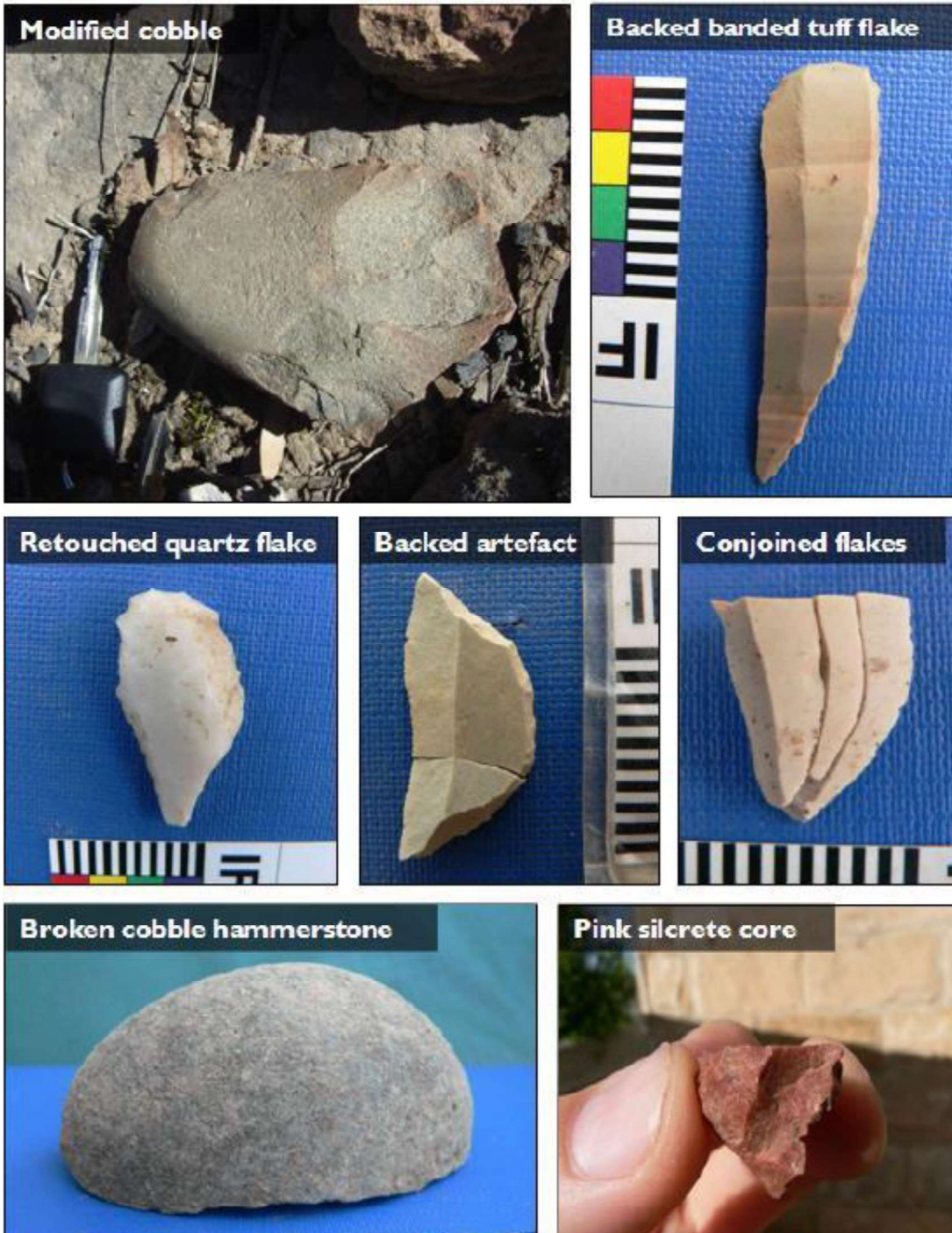


Plate 10: Culturally modified stone discovered on Main Road 92, about two kilometres west of Sassafras. The remaining images shown a selection of stone artefacts retrieved from test and salvage archaeological excavations during the Hume Highway Duplication and Bypass projects from 2006-2010.

Appendix 2: Unexpected Heritage Find Recording Form

This form is to be completed by the Excavation Director on the discovery of an archaeological heritage find during construction or maintenance works

Date:		Recorded by: (include name and position)	
Project name:			
Description of works being undertaken:			
Description of exact location of item			
Description of item found <i>(What type of item is it likely to be? Tick the relevant boxes).</i>			
A. A relic	<input type="checkbox"/>	A 'relic' is evidence of a past human activity relating to the settlement of NSW with local or state heritage significance. A relic might include bottle, utensils, plates, cups, household items, tools, implements, and similar items	
B. A 'work', building or structure'	<input type="checkbox"/>	A 'work' can generally be defined as a form infrastructure such as track or rail tracks, timber sleepers, a culvert, road base, a bridge pier, kerbing, and similar items	
C. An Aboriginal object	<input type="checkbox"/>	An 'Aboriginal object' may include stone tools, stone flakes, shell middens, rock art, scarred trees and human bones	
D. Bone	<input type="checkbox"/>	Bones can either be human or animal remains. Remember that you must contact the local police immediately by telephone if you are certain that the bone(s) are human remains.	
E. Other	<input type="checkbox"/>		
Provide a short description of the item <i>(E.g. metal rail tracks running parallel to the rail corridor. Good condition. Tracks set in concrete, approximately 10 cm below the current ground surface).</i>			

<p>Sketch <i>(Provide a sketch of the item's general location in relation to other road features so its approximate location can be mapped without having to re-excavate it. In addition, please include details of the location and direction of any photographs of the item taken)</i></p>			
<p>Action taken (Tick either A or B)</p>			
<p>A. Unexpected item would not be further impacted on by the works</p>	<input type="checkbox"/>	<p>Describe how works would avoid impact on the item. (E.g. the rail tracks would be left in situ and recovered with paving).</p>	
<p>B. Unexpected item would be further impacted by the works</p>	<input type="checkbox"/>	<p>Describe how works would impact on the item. (E.g. milling is required to be continued to a depth of 200 mm depth to ensure the pavement requirements are met. Rail tracks would need to be removed.)</p>	
<p>Excavation Director, archaeologist or Aboriginal cultural heritage consultant</p>		<p>Name</p>	
		<p>Signature</p>	

IMPORTANT

It is a statutory offence to disturb Aboriginal objects or relics (including human remains) without an approval. All work affecting Aboriginal objects and relics must cease until an approval is sought.

Appendix 3: Photographing unexpected heritage items

Photographs of unexpected finds in their current context (*in situ*) may assist archaeologists/Aboriginal heritage consultants to better identify the heritage values of the item. Emailing good quality photographs to specialists can allow for better quality and faster heritage advice. The key elements that must be captured in photographs of the item include its position, the item itself and any distinguishing features. All photographs must have a scale (ruler, scale bar, mobile phone, coin etc.) and a note describing the direction of the photograph.

Context and detailed photographs

It is important to take a general photograph (Figure 1) to convey the location and setting of the item. This will add value to the subsequent detailed photographs also required (Figure 2).

Removal of the item from its context (e.g. excavating from the ground) for photographic purposes is not permitted.

Photographing distinguishing features



Figure 2: Close up detail of the sandstone surface showing material type, formation and construction detail. This is essential for establishing date of the feature.

Where unexpected items have a distinguishing feature, close up detailed photographs must be taken of these features, where practicable. In the case of a building or bridge, this may include diagnostic details architectural or technical features. See Figures 3 and 4 for examples.



Figure 3: Ceramic bottle artefact with stamp.



Figure 4: Detail of the stamp allows 'Tooth & Co Limited' to be made out. This is helpful to a specialist in gauging the artefact's origin, manufacturing date and likely significance.

Photographing bones

The majority of bones found on site will be animal bones often requiring no further assessment (unless they are in archaeological context). However, if bones are human, the police must be contacted immediately (see Appendix 5 for detailed guidance). Taking quality photographs of the bones can often resolve this issue quickly. The project archaeologist can confirm if bones are human or non-human if provided with appropriate photographs.

Ensure that photographs of bones are not concealed by foliage (Figure 5) as this makes it difficult to identify. Minor hand removal of foliage can be undertaken as long as disturbance of the bone does not occur. Excavation of the ground to remove bone(s) should not occur, nor should they be pulled out of the ground if partially exposed.

Where sediment (adhering to a bone found on the ground surface) conceals portions of a bone (Figure 6) ensure the photograph is taken of the bone (if any) that is not concealed by sediment.



Figure 5: Bone concealed by foliage.



Figure 6: Bone covered in sediment

Ensure that all close up photographs include the whole bone and then specific details of the bone (especially the ends of long bones, the *epiphysis*, which is critical for species identification). Figures 7 and 8 are examples of good photographs of bones that can easily

be identified from the photograph alone. They show sufficient detail of the complete bone and the epiphysis.



Figure 7: Photograph showing complete bone.



Figure 8: Close up of a long bone's epiphysis.

Appendix 4: Archaeological / heritage advice checklist

The archaeologist/Aboriginal heritage consultant must provide advice to the Sydney Metro Environment Manager and Senior Advisor Heritage as soon as possible after an inspection of the site has been completed. This advice can include a range of activities and processes, which differ depending on the find and its significance.

In discussions with the archaeologist/Aboriginal heritage consultant the following checklist can be used as a prompt to ensure all relevant heritage issues are considered when developing this plan. This will allow the project team to receive clear and full advice to move forward quickly. Archaeological and/or heritage advice on how to proceed can be received in a letter or email outlining all relevant archaeological and/or heritage issues.

	Required	Outcome/notes
Assessment and investigation		
• Assessment of significance	Yes/No	
• Assessment of heritage impact	Yes/No	
• Archaeological excavation	Yes/No	
• Archival photographic recording	Yes/No	
Heritage approvals and notifications		
• AHIP, section 140, section 139 exceptions, section 60, exemptions etc.	Yes/No	
• Regulator Aboriginal objects / relics notification	Yes/No	
• Notification to the appropriate agency for s170 heritage conservation register	Yes/No	
• Compliance with CEMP or other project heritage approvals	Yes/No	
Stakeholder consultation		
• Consultation with Registered Aboriginal Parties	Yes/No	
Management		
• Retention or conservation strategy (e.g. items may be subject to long conservation and interpretation)	Yes/No	
• Disposal strategy	Yes/No	
• Short term and permanent storage locations (interested third parties should be consulted on this issue).	Yes/No	
• Control Agreement for Aboriginal objects	Yes/No	

Appendix 5: Template notification letter

Note: Notification of the discovery of a relic is required under section 146 of the Heritage Act 1977. The notification should be submitted through the Heritage Management System (HMS).

Insert on Sydney Metro letterhead

[Name]
Heritage NSW
[Address]

[Select and type salutation and name],

Re: Unexpected heritage item discovered during Sydney Metro activities

I write to inform you of an unexpected [select: Aboriginal object / relic] found during Sydney Metro activities at [insert location] on [insert date] in accordance with the notification requirement under select: [NPW Act, section 146 of the *Heritage Act 1977* (NSW)]. [Where the regulator has been informally notified at an earlier date by telephone, this should be referred to here].

NB: On finding Aboriginal human skeletal remains this letter must also be sent to the Commonwealth Minister for the Environment in accordance with notification requirements under section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth).

[Provide a brief overview of the project background and project area. Provide a summary of the description and location of the item, including a map and image where possible. Also include how the project was assessed under the *Environmental Planning and Assessment Act 1979* (NSW) (e.g. Part 5). Also include any project approval number, if available].

Sydney Metro [or contractor] has sought professional archaeological advice regarding the item. A preliminary assessment indicates [provide a summary description and likely significance of the item]. Please find additional information on the site recording form attached.

Based on the preliminary findings, Sydney Metro [or contractor] is proposing [provide a summary of the proposed archaeological/heritage approach (e.g. develop archaeological research design (where relevant), seek heritage approvals, undertake archaeological investigation or conservation, interpretation). Also include preliminary justification of such heritage impact with regard to project design constraints and delivery program].

The proposed approach will be further developed in consultation with a nominated Heritage NSW staff member.

Should you have any feedback on the proposed approach, or if you require any further information, please do not hesitate to contact [Environment and Planning Project Manager] on [add contact number].

Yours sincerely

[Name]

Sydney Metro Director, Environment, Sustainability & Planning

[Attach the advice from the Excavation Director, archaeologist or Aboriginal cultural heritage consultant, completed recording form and section 146 notification]

Appendix C

Sydney Metro Exhumation Management Procedure



Exhumation Management Procedure

SM ES-PW-315/5.0

Metro Body of Knowledge (MBoK)

Applicable to:	Sydney Metro
Document Owner:	Senior Heritage Advisor
System Owner:	Environment, Sustainability & Planning
Status:	Final
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1. Introduction

Sydney Metro has developed this Exhumation Management Procedure (ExMP) to provide guidance for managing the discovery of human skeletal remains during the course of works. The procedure is applicable to both unexpected skeletal finds and controlled archaeological investigations where human remains are anticipated to be uncovered. The procedure is applicable to any and all stages of any Sydney Metro project and to all staff and contractors.

Sydney Metro is Australia's biggest public transport project. In 2024, Sydney will have 31 metro stations and more than 66 km of new metro rail, revolutionising the way Australia's biggest city travels. When Sydney Metro is extended into the central business district (CBD) and beyond in 2024, metro will run from Sydney's booming North West region under Sydney Harbour, through new underground stations in the CBD and beyond to the south west (refer to Figure 1).

The purpose of this ExMP is to provide a clear and concise process to follow in the event of the discovery of potential human remains during Sydney Metro activities.

This ExMP will be reviewed as required and prior to any future Sydney Metro project that has potential to impact on known burials, graves, cemeteries or burial grounds. A review may require amending the ExMP to tailor additional controls or management procedures that are specific to the impacted cemetery or burial ground. In addition, the requirements of the relevant Planning Approval will be assessed during the review of this ExMP prior to its implementation.

This ExMP should be read in conjunction with the Sydney Metro Unexpected Finds Procedure.

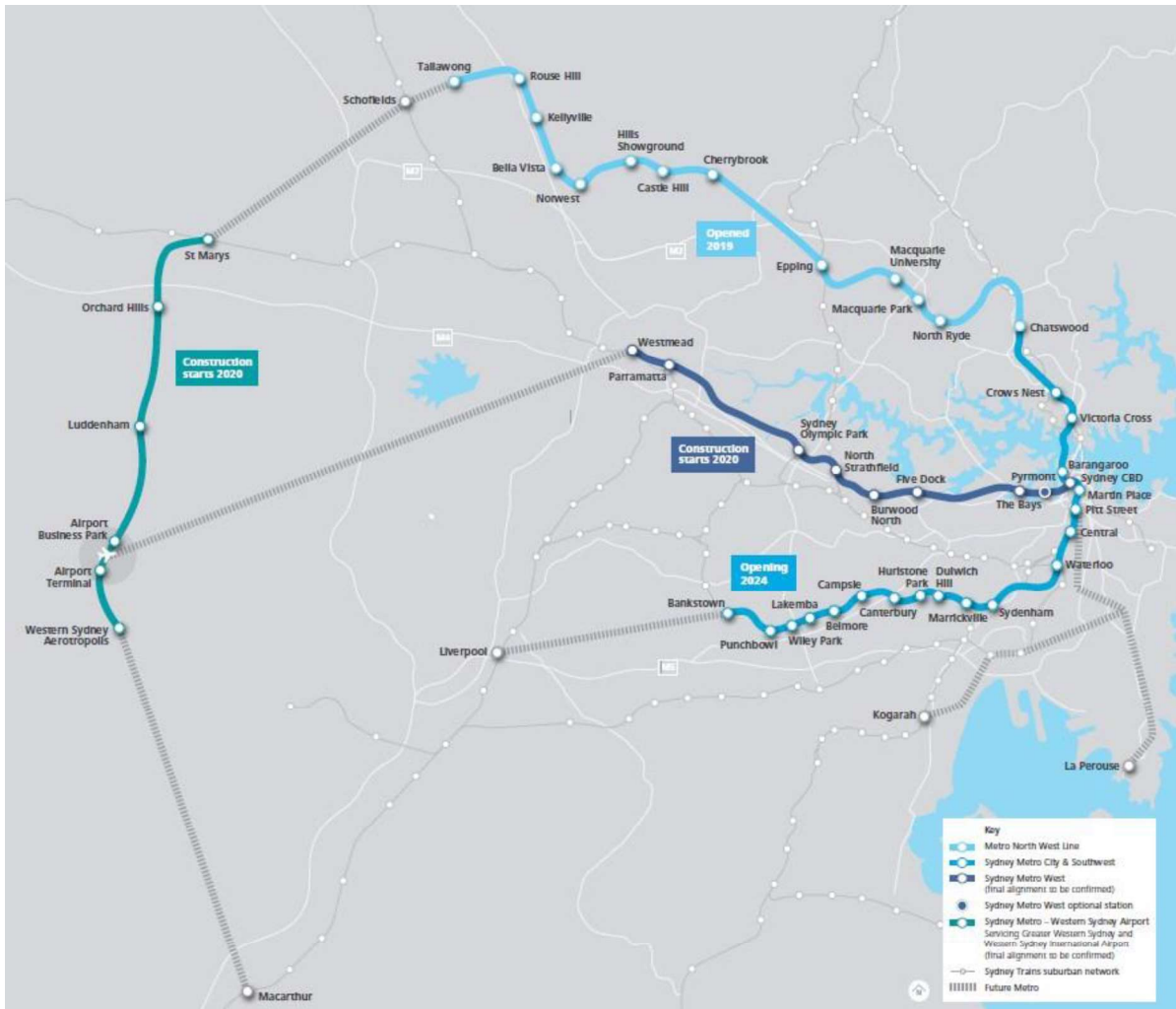


Figure 1 Sydney Metro project overview and station locations

1.1. Purpose and scope

This ExMP outlines the procedure for the management of the discovery of human remains within the Sydney Metro program. It includes:

- Overview of legislative requirements for dealing with human remains (e.g. *Coroners Act 2009*, *Heritage Act 1977*, *Guidelines for the Management of Human Skeletal Remains 1988*, and the *Public Health Regulations 2012*).
- A flow chart process to be followed when human remains are uncovered
- An archaeological methodology for the excavation of remains including processes for appropriately handling remains in accordance with the relevant guidelines (see section 2.3 and 2.4 below).
- Post-exhumation management processes including relocation, processing and long-term arrangements.

- Process for nomination of a physical anthropologist and temporary storage location.
- Process for additional analysis including DNA testing, isotope analysis and environmental sampling, and discussion on requirements for public involvement.

2. Overview of legislative requirements for dealing with human remains

The following section provides an overview of the legislation that would apply to the discovery, management and relocation of human remains. A discovery of suspected human remains may be subject to different Acts and requirements, thereby triggering different notification pathways based on the specific circumstances involved.

The first step will always be to notify the NSW Police. Confirmation of the age (antiquity) and nature of the skeletal remains as well as the reasons for the disturbance will dictate which Act and provisions will be applicable.

2.1. Discovery of human remains and forensic cases: NSW Coroners Act 2009

For a discovery of suspected human remains less than 100 years old, the remains would come under the jurisdiction of the State Coroner and the NSW *Coroners Act 2009*. Such a case would be considered a 'reportable death' and, under legal notification obligations set out in s35 (2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old, regardless of ancestry (i.e. both Aboriginal and non-Aboriginal remains).

35 Obligation to report death or suspected death

- (1) *This section applies to any person who has reasonable grounds to believe that a death or suspected death of another person:*
 - (a) *is a reportable death or occurred in circumstances that would be examinable under Division 2 of Part 3.2, and*
 - (b) *has not been reported in accordance with subsection (2).*
- (2) *A person to whom this section applies must report the death or suspected death concerned to a police officer, a coroner or an assistant coroner as soon as possible after becoming aware of the grounds referred to in subsection (1).*

Maximum penalty (subsection (2)): 10 penalty units.

- (3) *A police officer to whom a death or suspected death is reported under this section is required to report the death or suspected death to a coroner or assistant coroner as soon as possible after the report is made.*
- (4) *An assistant coroner to whom a death or suspected death is reported under this section is required to report the death or suspected death to a coroner as soon as possible after the report is made.*
- (5) *A coroner to whom a death or suspected death is reported under this section is required to inform the State Coroner of the report as soon as practicable after the report is made.*

2.2. Historic human remains: *Heritage Act 1977 and Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977*

The *Heritage Act 1977* (Heritage Act) and *Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977*¹ (the Guidelines) apply to historic burials in New South Wales. It should be noted that the Guidelines are outdated in terms of the current statutory framework.

A relic is defined as an archaeological deposit or artefact that has heritage significance at a local or State level. The guidelines, *Assessing Significance for Historical Archaeological Sites and 'Relics'*², have been endorsed by the Heritage Council of NSW and should be used to assess the level of heritage or archaeological significance of the remains. With reference to burial grounds, objects such as headstones, grave enclosures and grave goods, as well as buried human remains, may be 'relics' under the Heritage Act.

Approval under the Heritage Act and the *National Parks and Wildlife Act 1974* (NPW Act), is not required if human remains are uncovered during a Critical State Significant Infrastructure (CSSI) project. However, notification to the Heritage Council under s146 of the Heritage Act, and notification of an Aboriginal object under the NPW Act is required if human remains are uncovered during archaeological or other project related investigations.

2.3. Aboriginal human remains: *National Parks and Wildlife Act 1974*

The NPW Act, administered by Heritage NSW, provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Aboriginal occupation of NSW) under Section 90 of the Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84.

Discovery of Aboriginal burials and/or human remains would be addressed in the projects Aboriginal Cultural Heritage Assessment Report (ACHAR). ACHARs would be prepared in accordance with the following Heritage NSW guidelines:

- *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*³,
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*⁴,
- *Aboriginal cultural heritage consultation requirements for proponents 2010*⁵,
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*⁶.

¹ NSW Heritage Office, 1998

² Heritage Branch of the Department of Planning, 2009

³ NSW Department of Environment and Conservation, 2005

⁴ Office of Environment and Heritage, 2011

⁵ Department of Environment, Climate Change and Water, 2010

⁶ Office of Environment and Heritage, 2010

If suspected human skeletal remains are uncovered at any time during the archaeological management program, the process outlined in this ExMP and detailed in the flow chart is to be followed. Management of the remains would be guided by consultation with the nominated Registered Aboriginal Parties (RAPs) for the project, in adherence to the ACHAR.

2.4. Exhumation of human remains: *Public Health Regulation 2012 (NSW)*

Public Health Regulation 2012 and the *NSW Health Policy Statement – Exhumation of human remains of the Public Health Regulation 2012* provides specific regulation for the exhumation of human remains in NSW.

Under Clause 70 of the Regulation, an application for approval to exhume the remains of a dead person may be made to the Director-General via an approved form to the Director of the Local Public Health Unit that acts on behalf of the Director-General of NSW Health. Exhumation is not to take place unless an authorised officer or a NSW Health member of staff is present at the exhumation (the grave may be excavated to the lid of the coffin but nothing must be disturbed until the arrival of the authorised officer) (Clause 72). An authorised officer must be present at the exhumation to ensure the correct interment procedure is followed and that all of the remains are exhumed, and to enforce the protection of public health should this be necessary.

2.5. NSW Ministry of Health Policy Statement – Exhumation of human remains (2013)

The NSW Ministry of Health *Policy Statement on the exhumation of human remains* provides the policy to be observed by Public Health Units located in Local Health Districts on receipt of an application to seek permission for approval of the exhumation of human remains under the *Public Health Regulation 2012*. Public Health Units (PHUs) of Local Health Districts (LHDs) in NSW facilitate the approval for an exhumation.

Under Clause 69 a person must not exhume a body unless the exhumation of the remains has been approved by the Director-General. An application for permission to exhume the remains of a deceased person is to be made to the Public Health Unit on the approved form which is available at the [NSW Health website](#) and included in Appendix 2.

Note that the title of Director General of Health was replaced with the Secretary of Health when the Public Health Act and Public Health Regulation were amended. However, the Policy Directive PD2013-046 has not been amended to reflect this change.

2.6. *Work Health and Safety Act 2011*

The *Work Health and Safety Act 2011* provisions apply to protect personnel involved in the exhumation procedure by creating and maintaining safe and healthy work practices and are enforced by WorkCover NSW. Graves, crypts and vaults could be considered to be confined spaces in some circumstances under health and safety legislation. More information on safe work practices is available at or by contacting SafeWork NSW via their website or directly.

Health and safety aspects of working with human remains should be considered. Generally, working with archaeological human skeletal remains requires no extra precautions to be taken beyond normal health and safety regulations. Once any necessary site health and safety precautions have been taken, the exhumation of human remains can proceed.

3. Sydney Metro procedure for the discovery and management of human remains

This procedure provides project managers, principal contractors and the Project Excavation Director with advice on the steps to follow when suspected human remains are uncovered. Information on the potential for burials and human remains where known would be included in the general project induction for all personnel. The general project induction would also include the procedure to manage human remains set out in this ExMP.

3.1. Initial discovery of bones: What do we do?

To avoid doubt, all suspected bone items must be treated as potential human skeletal remains, and work in the immediate vicinity must stop while they are protected and investigated as a matter of urgency.

Stop Work and preliminary notification

If bone is uncovered, all work in the vicinity of the find must stop to allow for a positive identification as either human or non-human bone.

The Project Excavation Director must be notified.

Preliminary notification must be made to the NSW Police in compliance with Section 35 of the *Coroners Act 2009* (also refer to special conditions for Central Station noted in section 4).

What?	When bones are uncovered at a site, all work in the area of the find must stop immediately and the site must be secured.
Who?	The discoverer will immediately notify machinery operators so that no further disturbance of the remains will occur, as well as notifying the foreman/site supervisor, principal contractor, project archaeologist/Excavation Director and Sydney Metro Environmental Manager. Preliminary notification to the NSW Police will be undertaken by the Excavation Director. Notification should provide verbal description of the remains and inform the police that consultation with technical specialists is being undertaken to confirm that the remains are human, as well as the burial context (archaeological or less than 100 years old, refer Step 2).
How?	Inform all site personnel of restricted access to the area of the discovery until further notice. Area must be fenced off (flagging or temporary exclusion fencing).
Actions	Notify site supervisor, principal contractor, Project Archaeologist / Excavation Director and Sydney Metro Environmental Manger of the find and protect the suspected remains until an initial assessment can be undertaken by a technical specialist. Preliminary notification to NSW Police by Sydney Metro Environmental Manager.

Confirm the remains are human

Skeletal remains could either be articulated and in a recognisable form of burial such as a coffin or common burial position of the body (e.g. supine, prone or flexed), or they could be disarticulated or fragmented remains. Within the boundaries of a known historic burial ground, there is a high probability of the remains being human. In a suspected forensic case (less than 100 years old), the remains may have clothing and/or human tissue. Disarticulated or fragmented bones are often uncovered and these may require specialist assessment to determine legal jurisdiction.

If suspected human remains are identified during the course of project works, preliminary notification must be made to the NSW Police in compliance with Section 35 of the *Coroners Act 1999* (refer Step 1). NSW Police would be contacted immediately upon receipt of confirmation of human provenance.

What?	Confirmation that the remains are human, their burial context - whether they are forensic (less than 100 years) or archaeological (older than 100 years) and suspected ancestry (Aboriginal or non-Aboriginal).
Who?	Excavation Director and or Forensic or physical anthropologist, or archaeologist with specialist skills such as an osteoarchaeologist. Notification to the NSW Police will be undertaken by the Sydney Metro Environmental Manager.
How?	Consultation could be undertaken as either an on-site inspection or via good quality photos sent to the nominated technical specialist of 1) the remains; and 2) the site general site location of the discovery.
Actions	Contact nominated technical specialists to confirm that the remains are: a) human, b) burial context (archaeological or forensic), and c) suspected ancestry (Aboriginal or non-Aboriginal). For the duration of the Sydney Metro project, the nominated technical specialists are: <ul style="list-style-type: none"> • Forensic Anthropologist – TBC by contractor for project area. • Nominated Excavation Director – TBC by contractor for project area. • Sydney Metro Environmental Manager to conduct and or oversee liaison with NSW Police. The archaeologist may be able to identify the nature of remains without input from the Forensic Anthropologist. The Forensic Anthropologist should be contacted as required.

Notification based on jurisdiction (forensic or archaeological)

Once confirmation is received from the technical specialist that the remains are of human origin, there are three possible statutory pathways to follow based on the assessment.

What?	<i>Forensic case:</i> remains are less than 100 years old
Who?	If it is determined by specialist assessment (Step 2) that the remains are forensic, the remains come under the jurisdiction of the State Coroner and the Coroners Act 2009.
How?	The NSW Police would likely secure the site and will advise on the procedure to be followed.
Actions	Environmental Manager to liaise with NSW Police

What?	<i>Archaeological – non-Aboriginal human remains</i> – more than 100 years old.
Who?	Follow the Archaeology Exhumation Methodology as set out in Step 4 below

How?	Follow the Archaeology Exhumation Methodology as set out in Step 4 below
Actions	Follow the Archaeology Exhumation Methodology as set out in Step 4 below

What?	<i>Archaeological – suspected Aboriginal human remains – more than 100 years old.</i>
Who?	Recording of Aboriginal ancestral remains must be undertaken by, or conducted under the direct supervision of a specialist with registered Aboriginal parties (RAPs) present.
How?	The RAPs must be present where it is reasonably suspected that Aboriginal burials or human remains have been encountered.
Actions	Notify RAPs and Heritage NSW and follow the Aboriginal cultural heritage assessment report (ACHAR). Follow the Archaeology Exhumation Methodology as set out in Step 4.

3.2. Archaeological exhumation methodology

The following section provides a broadly accepted archaeological methodology for exhumation and the appropriate handling of human remains.

Securing the site

The strategy for the excavation and removal of human remains must be sensitive to public opinion and ethics and exhumation activities should not be visible to the general public. The site may need to be screened off from public areas, not only with hoarding but also in some cases with a roof to screen the site off from overlooking buildings. At all times, human remains should be treated respectfully. The perimeter of the excavation site should be demarcated by plastic tape or flagging, with only technical staff allowed within this area for the duration of exhumation activities.

The site should be protected from the elements including flooding, contamination with dust or debris, and other disturbance. These measures would be formulated by the Excavation Director in consultation with the contractor and Sydney Metro where required and may differ from site to site.

Excavation Director

Archaeological investigations are to be managed by a suitably qualified Excavation Director with experience in the excavation and management of human remains. For sites with potential for locally significant remains, the Excavation Director should meet the NSW Heritage Council criteria for experience with locally significant archaeological sites. For sites with potential for State significant archaeology the Excavation Director should meet the Heritage Council of NSW criteria for experience with State significant archaeological sites.

Excavation and recording

Exhumation and recording is to be undertaken in accordance with best practice forensic and Heritage Council of NSW guidelines. Prior to removal, the remains should be fully recorded in situ to understand their surrounding archaeological context. This will include recording any disturbances to the burial and the identification of bones present. In some cases, the deposit

of bones may be a mixture of articulated and disarticulated remains. Care should be taken to distinguish articulated remains and to assess if they represent commingled individuals or disturbed remains belonging to one individual, and to record them accordingly.

Recording

- A standard context recording system is to be employed.
- Detailed survey and/or measured drawings are to be prepared and include location of remains within the overall site (position of the body, the direction of the burial, noting any stratigraphic relationships with other archaeological features).
- Any associated artefacts (potential grave goods, burial furniture) are to be recorded and collected by context for later analysis.
- Photographic record of all phases of work in accordance with 'Photographic Recording of Heritage Items Using Film and Digital Capture'. Photographs are to be in RAW format, using photographic scales and photo boards where appropriate.
- Registers of contexts, photos, samples and drawings are to be kept.

Excavation

- Detection of the extent of the grave/remains (if disarticulated).
- Surface soils removed in excavation units of 100mm (site dependent) using small hand tools.
- Expose remains with soft paint brushes and pedestal the remains.
- Record position and depth of remains.
- Soil removed is to be sieved through 3mm mesh to examine for teeth and bone fragments.
- Soil samples may be taken from the abdominal and/or chest areas of the body (articulated remains) to retrieve further evidence.
- Exhumation must be under the control of the Excavation Director, with the assistance of a Forensic Anthropologist if required. Exhumation permit/s, provided by NSW Ministry of Health may also require the presence of an authorised officer or a member of staff of the Ministry of Health.
- Further excavation of the bottom of the pit (grave) following removal to confirm the absence of further remains.

Relocation of bones

- Removal and collection of skeletal remains is to follow the standard forensic practice of labelling as follows:
 - Remove remains from the ground systematically and place in plastic bags according to anatomical areas of the body.
 - Bags should not be air-tight and should have ventilation holes to prevent deterioration of fragile skeletal material. Each bag should contain labels and the separate bags should then be placed in a large plastic bag, crate or box, labelled with the context information.
 - The remains should be placed in a sturdy, large cardboard box (approximately 600 x 300 x 200 mm) for relocation to off-site processing location.

3.3. Resume work

Construction work may only recommence upon receipt of clearance certificate from the Excavation Director and may require additional NSW Ministry of Health approval. If a forensic case, written authorisation from the NSW Police is required.

3.4. Reporting

A report would be prepared following the completion of the program of exhumation works, separate to the archaeological excavation report for the project. This report would include skeletal analysis catalogue, comprehensively describe the process of exhumation, detail the recording of the remains and synthesise the results of any further laboratory testing. An assessment of significance for the remains would be provided and interpreted within the context of the archaeological research design (response to research questions).

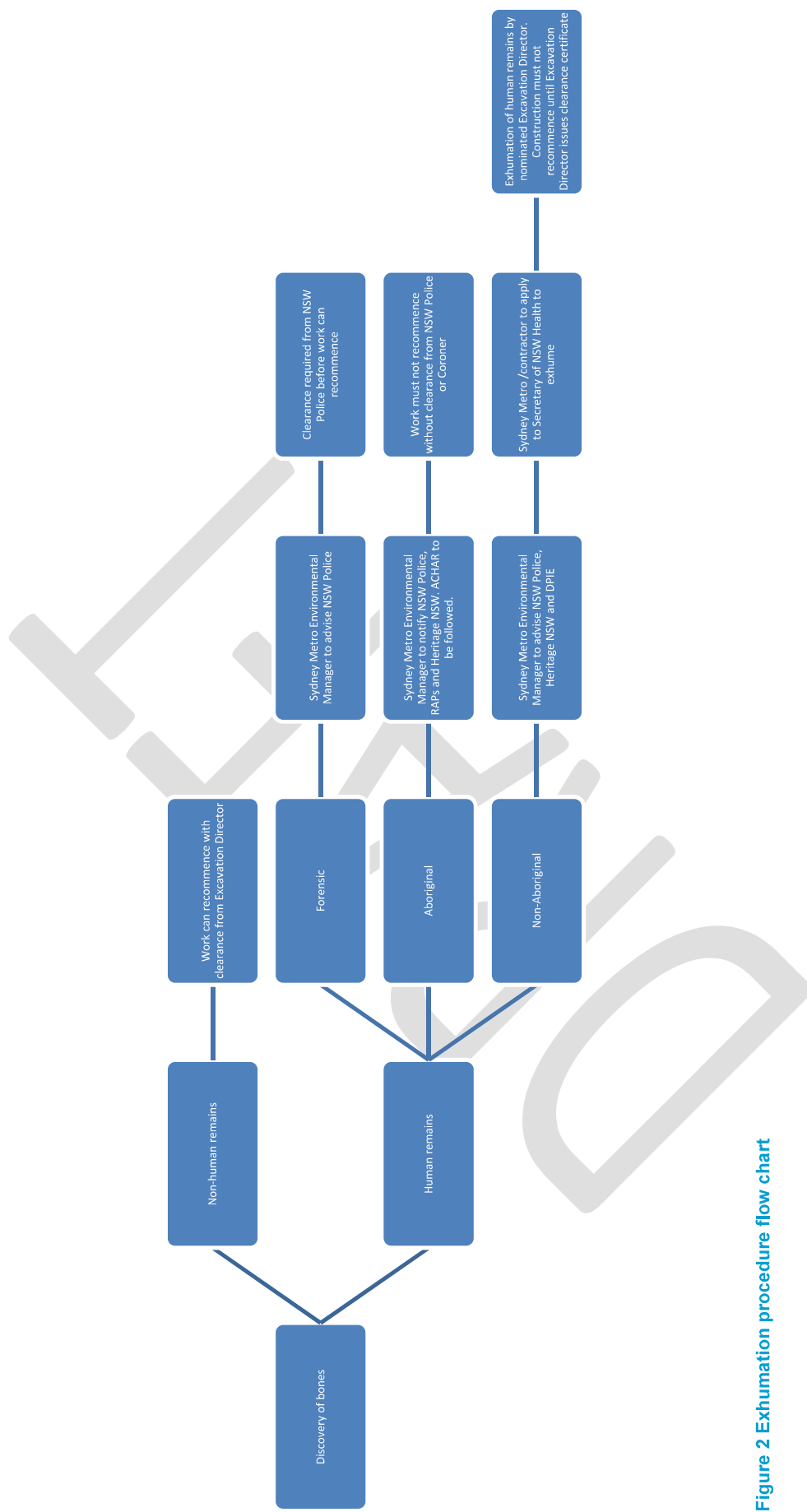


Figure 2 Exhumation procedure flow chart

4. Excavation and post-excavation tasks

All on-site management should be in accordance with the archaeological research design (ARD) and relevant archaeological method statement (AMS), and be overseen by the Excavation Director. The Excavation Director would nominate a Forensic Anthropologist where required.

4.1. Research questions

Research questions should be specific to the site and the site history. The research questions in the archaeological research design can be revised as new information emerges and new research questions can be investigated.

The following general research questions can be used to guide exhumations, should intact burials, disarticulated remain, burial cuttings or associated material culture be uncovered during work.

Social history and burial practices

- Does the location of the burial/burial cutting correspond with historic plans/descriptions?
- Is there evidence of exhumation?
- Do graves cut into older ones? What can this tell us about nineteenth century burial practices, and how does this compare to other excavated cemetery sites in the region?
- What is the distance between burials (if multiple burials uncovered)? Does this conform to known nineteenth century burial practices?
- What type of fill was used within grave cuttings? What can this tell us about the surrounding environment and burial practices at the time?
- What materials/tree species were used in the coffin manufacture? Can coffin manufacturing techniques or fastening methods (use of mortar, screws, nails, tacks) be identified? Does this match known burial practices of the time? If alternative methods are identified, what can this tell us about the manufacturer or economic/social landscape?
- Can the class or rank of the individual be identified via coffin materials, grave goods or clothing/shrouds?
- Which direction is the burial orientated? How does this correspond with the known/hypothesised location of denomination areas?
- If the burial is associated with more than one individual, can a familial relationship be assessed through DNA or other genetic markers identifiable within the skeletal remains?

Environmental factors and scientific analysis

- What is the condition of the bones? How does their condition compare to known or nearby burials of the same age? What environmental or human factors may have influenced the decomposition process?
- Can the health, nutrition, sex, race, stature or age be identified through the skeletal remains? Is there evidence of trauma on the bones? Is there evidence of pathology on the bones (e.g. syphilis, tuberculosis, tumours)?
- Can stable isotope analysis address any questions regarding diet, country of origin and nutrition?
- Can DNA testing address any questions not answerable by the skeletal remains themselves, such as sex, familial relationships (if buried with another individual/s) or

race?

- Is there potential for DNA to be tested against any individuals who may come forward as a descendant of the deceased?

4.2. Process for DNA testing, isotope analysis and environmental sampling

Pre-excavation

The Excavation Director, in consultation with the Forensic Anthropologist, will nominate a suitable laboratory prior to works commencing. Requirements for DNA testing, isotope analysis and environmental sampling will be identified in the archaeological research design and archaeological method statement.

Excavation

In order to prevent cross-contamination, the following sample collection and excavation process should be followed:

- The location, quantity and material (bone, teeth, hair, soil, wood) of samples will be determined by the Excavation Director or Forensic Anthropologist prior to its collection.
- Samples would be stored in a safe, secure and climate controlled location while excavations are in progress. This would be chosen by the Excavation Director or Forensic Anthropologist on site.
- Each collected sample would be given a unique catalogue number and a sample register would be recorded throughout the excavation;
- 'Clean excavation' procedures would be followed during the excavation of burials and during the sample collection process⁷. This would include:
 - Latex gloves would be worn by individuals excavating and/or handling bone or soil samples. Gloves would be changed for each bone and/or individual to prevent cross-contamination;
 - Excavation tools/brushes would be cleaned prior to and after the collection of each sample to prevent cross-contamination;
 - In some cases, a face mask would be worn when samples for DNA analysis are being collected;
 - Bone samples for DNA testing would be collected with surrounding in situ soil and should not be cleaned prior to bagging;
 - It may be necessary for individuals involved in sample collection to submit DNA for comparison in the event of cross-contamination; and
 - All bags containing samples for analysis would be bagged and labelled appropriately to prevent cross contamination and ensure they are handled and stored correctly.

Post-Excavation

⁷ Guidelines for 'clean excavation' are based on procedures outlined in: Yang, D. Y. & Watt, K. 2005. Contamination controls when preparing archaeological remains for ancient DNA analysis. *Journal of Archaeological Science*, vol. 32, pp. 331–336 and *Society for Historical Archaeology*, 2015-2017. Research and Analysis of Artefacts. Accessed online at: <https://sha.org/conservation-facts/faq/analysis/#C> on 25/5/2017.

On completion of excavations, samples will be transported to nominated laboratories for analysis. A record of their location will be kept.

4.3. Reporting

The results of the investigation of human remains and the exhumation will be included in the archaeological reporting for the project in accordance with the project ARD.

Once finalised, and where it is appropriate to do so as determined in consultation with RAPs and/or as may be required by the relevant Planning Approval obligations, archaeological and associated specialist reports should be submitted to:

- The relevant local Council and Library;
- Heritage NSW Library;
- The State Library of NSW; and
- Made available online for public access and educational purposes.

Further, if significant remains are identified during excavations, the results and findings would be published in academic journals and conference papers where feasible.

4.4. Public involvement

Archaeological excavations may uncover remains directly associated with early settlement and burial practices. Such remains are likely to generate public interest.

Public involvement may include:

- Media releases;
- Public Open Days;
- Preparation of brochures detailing the archaeological excavations;
- Interpretive signage and online blog posts or site diaries while excavations are taking place; and
- The preparation of a Heritage Interpretation Plan designed to provide interpretation of the site within the new development upon the completion of works.

Due to sensitive nature of human skeletal remains, these recommendations would be adapted and modified as appropriate under the direction of Sydney Metro and the Excavation Director.

Such recommendations would also be considered and require approval from relevant stakeholder groups such as known or potential descendants of the deceased, Heritage NSW/Heritage Council of NSW, local Council and interest groups.

4.5. Temporary storage and permanent repository or resting place for remains

Temporary storage

Upon the completion of archaeological excavations, skeletal remains should be boxed separately and temporarily stored within a safe, secure controlled environment to allow for further analysis of the remains. This location would be chosen by the Excavation Director and the Forensic Anthropologist and comply with NSW legislative requirements.

Permanent repository or resting place for remains

A permanent repository or resting place for remains is dependent on the nature and volume of skeletal remains. Final arrangements would be dictated by Sydney Metro, the Excavation Director, Forensic Anthropologist, identified descendants of the deceased, RAPs (if applicable) and/or other stakeholders upon the completion of excavations and subsequent analysis.

5. Definitions

All terminology in this document is taken to mean the generally accepted or dictionary definition. Other terms and jargon specific to this document are defined within the [SM-17-00000203 Sydney Metro glossary](#). Acronyms specific to this document are listed below.

	Definitions
IMS	Integrated Management System (IMS)
TfNSW	Transport for New South Wales
RAP	Registered Aboriginal party
ACHAR	Aboriginal cultural heritage assessment report
ARD	Archaeological research design
AMS	Archaeological method statement
OEH	Office of Environment and Heritage (now Heritage NSW)
PHU	Public Health Unit
ExMP	Exhumation Management Procedure (this Procedure)
ER	Environmental Representative (independent)

6. Accountabilities

The Director Environment, Sustainability and Planning is accountable for this document including approving the document, monitoring its effectiveness and performing a formal document review.

Direct Reports to the Chief Executive are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

Direct Reports to the Chief Executive who are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this document.

7. Related documents and references

Related documents and references

- SM-18-00105232 Sydney Metro Unexpected Heritage Finds Procedure
- Department of Environment, Climate Change and Water 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010
- Department of Environment, Climate Change and Water 2010, Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW

8. Superseded documents

Superseded documents

Exhumation Management Plan Version 1.1
 Exhumation Management Plan Version 2.0
 Exhumation Management Plan Version 2.1
 Exhumation Management Plan Version 2.2
 Exhumation Management Plan Version 3.0
 Exhumation Management Plan Version 4.0

9. Document history

Version	Date of approval	Notes
1.1	May 2017	New IMS document.
2.0	July 2017	Incorporates Stage 2 (section 3)
2.1	February 2019	Extended for Metro Program wide application, includes changes specific Central Station management, and incorporates comments received from the State Coroner's Office, NSW Police, NSW Health, and Sydney Metro Environmental, Environmental Representatives engaged on the Central site and the Office of Environment and Heritage (OEH).
2.2	February 2019	Incorporates comments received from Artefact Heritage and Dr Denise Donlon issued to Health and OEH Heritage Division for consultation.
3.0	May 2019	Incorporates Health, Coroner and OEH comments.
4.0	April 2020	Updates to remove specific references to City and South West and Central Station. Change of title to "Procedure". Update to references.
5.0	March 2021	Minor edits.
5.1	April 2021	Updates to related documents and references.

Appendix 1

NSW Health Policy Directive for Exhumation of Human Remains

CONDITIONS OF APPROVAL FOR EXHUMATION FROM GRAVE

1. The exhumation is to be carried out in the presence of a Public Health Unit's authorised officer or other authorised officer of the NSW Ministry of Health or Local Council authorised Officer and person appointed by Cemetery Authority.
2. At least 48 hours notice of the exhumation arrangements shall be given to the Public Health Unit.
3. Day and time of the exhumation shall be arranged by the participating parties and agreed to by the Public Health Unit.
4. The approval granted is valid for a period of three months and shall lapse on ___/___/____, unless a further approval is granted.
5. The presence of any relative of the deceased at the exhumation is strictly prohibited.
6. No animals are to be permitted within the exhumation site.
7. The cemetery authority and funeral director shall be responsible for the work health and safety of all persons involved in the exhumation and shall ensure that all NSW WorkCover requirements are complied with.
8. If, during the course of the exhumation, it is determined necessary to stop the exhumation by either the exhumation supervisor / cemetery manager or authorised Officer, for any valid reason e.g. work health and / or public health risk, then the exhumation must cease.
9. The remains of the deceased shall be enclosed in a body bag and placed into a new coffin with a name plate attached inscribed with the name of the deceased.
10. The remains of the original coffin are to be placed in the new coffin where possible. Where there is an excess of remains of the original coffin, these remains should be disposed in a sanitary and agreed manner.
11. Excavated soil should be back filled. The soil that was removed from immediately above and around the coffin should be replaced first.
12. If the exhumed remains are to be transferred to another cemetery, a funeral director shall be contracted to transfer the remains from the cemetery grounds or carry out preparatory work for the safe reinterment of the remains.
13. The exhumation will not proceed during or following a period of heavy rainfall within the preceding 24 hours of the appointed time of exhumation. The cemetery manager is to confirm that satisfactory conditions exist for the exhumation to proceed two hours prior to the commencement of the exhumation.
14. Used disposable protective equipment and materials are to be placed in a sealed plastic bag and disposed of in a sanitary manner.

CONDITIONS OF APPROVAL FOR EXHUMATION FROM ABOVE GROUND STRUCTURE

1. The exhumation is to be carried out in presence of a Public Health Unit authorised officer or other authorised officer of the NSW Ministry of Health or Local Council authorised Officer and person appointed by Cemetery Authority.
2. At least 48 hours notice of the exhumation arrangements shall be given to the Public Health Unit.
3. Date and time of the exhumation shall be arranged by the participating parties and agreed to by the Public Health Unit.
4. An approval granted is valid for a period of three months and shall lapse on ___ / ___ / ___, unless a further approval is granted.
5. The cemetery authority and funeral director shall be responsible for the work health and safety of all persons involved in the exhumation and shall ensure that all NSW WorkCover requirements are complied with.
6. If, during the course of the exhumation, it is determined necessary to stop the exhumation by either the exhumation supervisor / Cemetery Manager or authorised officer, if for any valid reason e.g. worker health and/or public health risks, then the exhumation must cease.
7. Used disposable protective equipment and materials are to be placed in a sealed plastic bag and disposed in a sanitary manner.



Appendix 2

NSW Health Permit Application



Health

APPLICATION TO EXHUME REMAINS

PUBLIC HEALTH REGULATION, 2012 Clause 70(2)

In accordance with the requirements of Clause 70 (2) of the Public Health Regulation 2012, I
(Full name of applicant)

..... of hereby
(Address)

apply for permission to exhume the remains of the late
(Name of deceased)

from Grave No:....., Section:, being a single

interment within the Cemetery, for the purpose of

I seek permission to exhume for the following reason/s:

The deceased: (cross out which is not applicable)

- was not known to be infected with a prescribed infectious disease as defined in clause 53 of the Public Health Regulation 2012; or
- was known to be infected with a prescribed infectious disease as defined in clause 53 of the Public Health Regulation 2012

I am entitled to make this application, because I am: (tick one)

1. The executor of the estate of the deceased; or
2. The nearest surviving relative of the deceased; or
3. If there is no such executor or relative available to make the application, another the proper person to make the application for the reasons set out below:

.....
(Full reasons for proper person to make application)

Attached is:

1. A certified copy of the death certificate of the deceased.
2. A statutory declaration as to:
 - My relationship to the deceased; and
 - the wishes of the deceased regarding the disposal of the body (if known);
 - the reasons why the Director-General may consider me the proper person in all the circumstances to make the application (if applicable)
3. The application fee of \$.....

The exhumation is to be supervised in strict accordance with the attached Plan of Management

by
employed with (Funeral Director/Cemetery)
in the capacity of

Signature: Date:
(Applicant)



Appendix D

Heritage NSW consultation log

Consultation 1—Heritage NSW meeting—14 July 2021

Initial meeting to discuss Heritage NSW comments on the EIS non-Aboriginal archaeology assessment and research design. Discussion on Heritage NSW's expectations for the revised ARD and what GML's approach would be. GML requested assistance in locating reports on previous archaeological excavations within and adjacent to the site. Archaeological report for excavations at 41-53 George Street, Parramatta was identified as being important – as references in other publications indicate that there is conserved archaeology below the 1990s development. Heritage NSW agreed to follow up on hard copies of older reports that may be in their archives, though also noted there was limited access.

Consultation 2 – Heritage Working Group presentation – 18 August 2021

Presentation of Aboriginal heritage and historical archaeology revised assessment findings to the HWG. This included a summary of the archaeological context, archaeological potential and significance assessment outcome, the approach to the archaeological research framework and the topics and themes for the site-specific research design, and an overview of the methodologies.

HNSW Points Raised	GML Response/Actions
Contact archaeology—how has this been addressed?	<ul style="list-style-type: none"> The research design includes questions regarding contact archaeology. Contact archaeology is also addressed in the Aboriginal Heritage Report (August 2021). The Archaeological Investigation Methodology (Section 6) includes an integrated approach with Aboriginal archaeology to ensure alignment between the two disciplines. The integrated methodology also addresses the potential for contact archaeology.
Convict/Town Drain—excavation of the town drain within the Sydney Metro site was recently undertaken for Parramatta Square. Heritage NSW (HNSW) to provide report.	<ul style="list-style-type: none"> This report was provided to GML and the results have been incorporated into the assessment.
Significance assessment: <ul style="list-style-type: none"> concern that state significance is only limited to Phase 1 (pre-1820s). HNSW consider there is potential for archaeological remains from Phases 2–4 to be of State significance. What does the Parramatta Historical Archaeological Landscape Management Plan (PHALMS) say about significance? 	<ul style="list-style-type: none"> The significance assessment considers the archaeology from Phases 2–4 within the site and whether it would be state significant. Generally, archaeology from these phases would be locally significant. However, there is not a 'hard line' between the phases and the level of state versus local. The archaeological significance is summarised and illustrated as state significant for phase 1 and local for phase 2-4 to aid archaeological management and identify key areas for more detailed investigation and management. The significance assessment has been edited to consider the early decades of phase 2 as potentially state significant. Individual PHALMS Archaeological Management Units (AMUs) were reviewed for the site and the conclusions from this report are presented and discussed in relation to the site.
The report should include the results of other company's projects in Parramatta.	A range of other consultancy reports have been reviewed for this project including: <ul style="list-style-type: none"> comparative analysis of archaeological investigations carried out within the site and within a one block radius (Section 4.3). review of recent ARDs and post-excavation reports to identify current research themes and agendas for Parramatta (Section 5).
Concerns were raised that archaeologists need to be involved during demolition. HNSW have recently dealt with a non-compliance issue relating to demolition (not connected to GML or Sydney Metro).	<ul style="list-style-type: none"> The Archaeological Investigation Methodology includes information on the construction program and the type of archaeological investigation required for each activity (ie demolition, service investigation, excavation) (Section 6.2).
What is proposed for public engagement? Will public open days be held?	<ul style="list-style-type: none"> A strategy for public engagement during archaeological investigations is included in the report (Section 6.19). This includes open days.

HNSW noted that the presentation was general and not enough details on the draft ARD was provided.

- Sydney Metro and GML agreed an additional meeting to provide further details on the archaeological assessment, research design and methodologies and allow further discussion with HNSW prior to formal submission through DPIE

Consultation 3 – Heritage NSW meeting – 7 September 2021

Meeting with focused discussion on the historical archaeology, research design and methodologies. HNSW noted they had not received the preliminary draft ARD for initial review prior to the meeting. GML provided a brief presentation to frame the discussion with HNSW. This include updated potential and significance mapping, and the draft research design.

Points Raised	Response/Actions
<p>The following comments were raised regarding the assessment of archaeological potential:</p> <ul style="list-style-type: none"> • concern that the assessed potential of the multi-storey carpark as low is incorrect. Reference was made to an earlier archaeological assessment and testing program for the car park site. 	<p>A copy of this report was requested from HNSW and has not been provided. GML was previously provided a report for 3 Horwood Place identified as the carpark site, however this site appears to be located on the north side of George Street and not within the Sydney Metro site.</p>
<p>The following comments were raised regarding the significance assessment were:</p> <ul style="list-style-type: none"> • significance was based on time period/ phase rather than broader considerations (such as historical or associative connections, or representative value). • need to consider the archaeology of Parramatta within the historical development pattern of NSW. • mid-nineteenth century archaeology was not considered as state significant or having research potential / comparative analysis potential. • would locally significant archaeology be discounted for detailed investigation? • what is the interplay between archaeology and other significant values? 	<p>The following actions have been implemented to address the points raised:</p> <ul style="list-style-type: none"> • Review archaeological potential grading definitions to clarify where needed, particularly in regard to the definition of low potential and how this informs the approach to archaeological management. • Review and update significance assessment to: <ul style="list-style-type: none"> ○ address the historical significance of Parramatta within the historical development pattern of NSW and incorporate HNSW comments where needed; ○ address how state and local significance has been identified within the site, noting why the archaeology transitions from state to local during Phase 2. ○ clarify distinction between phasing and assessed level of significance. • Edits to the statement of significance to incorporate updates from the significance assessment review.
<p>The following comments were raised regarding the research design:</p> <ul style="list-style-type: none"> • the opportunity to investigate almost an entire city block is rare and comparative analysis with other significant projects of similar scale should be undertaken. • are there outstanding questions from other company's research in Parramatta that are worth addressing at this site? • concern that there is only one question related to contact archaeology. 	<ul style="list-style-type: none"> • The research design includes questions on comparative analysis at both intra- and inter-site levels, addressing topics such as convicts, urbanisation, commerce, industry and material culture. Comparative sites can be chosen from across Parramatta, and with other specific settlement types such as the penal settlement at Port Macquarie or the neighbourhood studies from The Rocks in Sydney and Little Lonsdale in Melbourne. The potential, and scope for comparative analysis would be understood following excavation and during post-excavation analysis. • The Aboriginal Heritage Report includes several questions regarding contact archaeology. The historical archaeological research design also includes a contact archaeology question to link with the Aboriginal archaeological research.
<p>The following comments were raised regarding contact archaeology:</p> <ul style="list-style-type: none"> • general observation (not specific to this project or the ARD) made regarding contact archaeology that 'you won't find what you are not looking for'. Suggestion that the 	<ul style="list-style-type: none"> • The Archaeological Investigation Methodology includes an integrated approach with Aboriginal archaeology to ensure the two disciplines align. The methodology also includes a section on contact archaeology and how this will be managed during the archaeological investigations (Section 6.4.4).

Consultation 3 – Heritage NSW meeting – 7 September 2021

Meeting with focused discussion on the historical archaeology, research design and methodologies. HNSW noted they had not received the preliminary draft ARD for initial review prior to the meeting. GML provided a brief presentation to frame the discussion with HNSW. This include updated potential and significance mapping, and the draft research design.

Points Raised	Response/Actions
methodology should include measures to manage contact archaeology.	
The following comments were raised regarding the archaeological investigation methodology: <ul style="list-style-type: none"> concerns raised regarding demolition and the need for archaeological supervision. 	<ul style="list-style-type: none"> The Archaeological Investigation Methodology includes sections on construction impacts (Section 6.2.1) and the construction program (Section 6.2.2) that details how the archaeology will be managed during demolition and construction.
Public Open Days should be linked to significant finds.	<ul style="list-style-type: none"> The Archaeological Investigation Methodology includes a section on public archaeology (Section 6.18). This includes open days a potential strategy. Sydney Metro confirmed that open days will be required as part of the archaeological investigations.

Heritage NSW comments on final draft ARD dated 8/10/2021 and received by Metro/GML on 11/10/2021

Refer to HNSW letter dated 8/10/2021 for the comment details. GML responses are provided below and are dated 13/10/2021

Comment	Response/Actions
1	<p>The potential for a creek prior to the Convict Drain is considered in the archaeological potential and significance assessment. Refer to Table 4.3 (1, 4, 5 and 6) for comparative analysis of sites including the creek and Sections 4.8, 4.8.4, 4.8.17 and 4.9.6 for assessment discussion of the creek within the Metro site.</p> <p>Section 4.5 provides a general predicted depth profile for the whole site. It is based on geotechnical and archaeological data. The purpose is to provide a site-wide view of the historical archaeological deposits as one 'layer' to inform archaeological management and integration in construction program. It includes consideration of a backfilled/reclaimed creek (refer to bullet point 3).</p> <p><u>Actions</u></p> <p>Edits to Section 4.5 to clarify the depths and provide a general profile for the archaeological layers across the site. Figure included to illustrate the areas.</p>
2	<p>Rationale and approach to archaeological phasing is provided in Section 4.7. The phases generally reflect both historical phases and predicted changes in archaeological formation across the site. Site-wide phasings provide a framework to discuss the archaeological potential and present/compare a complex historical development pattern across multiple properties and subdivisions. There will be archaeological phasing nuances between the properties across the site. There is no suggestion that there is a 'hard line' between Phases 1 and 2. The phasing/changes in archaeology in the early-mid nineteenth century can be clarified with archaeological investigation.</p> <p>The HNSW comment incorrectly refers to Phase 1 ending in 1820. Phase 1 is 1788 to c1820s and represents around a 42-year period, which includes the decade of the 1820s. This encompasses the establishment of the settlement and town grid, construction and occupation of convict huts, and transition period to a free settlement with associated redevelopment by emancipists and free settlers. This is identified in Section 4.7.1.</p> <p>The significance assessment discussion in Sections 4.9.2 to 4.9.10 does not follow the phasing structure used as a framework to discuss archaeological potential. The significance discussion is based on analysis of the evidence – history (Section 2), comparative archaeological studies (Section 4.3), geotechnical data and previous impacts (Sections 4.4 to 4.6), and archaeological potential assessment outcomes (Sections 4.7 and 4.8). The significance assessment considers both the potential archaeology of individual allotments, and the patterns of development and occupation across the site, in the context of Parramatta and more widely in NSW.</p> <p>The statement of significance (Section 4.9.10) is followed by a table (Table 4.7) that presents the correlated findings of the archaeological potential assessment (Section 4.8) and the archaeological significance assessment (Section 4.9). The intent of this table is to summarise the assessment outcomes in relation to each allotment/property. This table reintroduces the phasing structure used for archaeological potential assessment and identifies state significant archaeology in Phase 1 and 2 for several properties – as this reflects the</p>

outcome of the significance assessment. This assessment outcome and identification of state significant archaeology is also illustrated in Figure 4.82.

The HNSW comment in final paragraph includes a quote is from the archaeological potential discussion of Lot 15a – one of 17 Lots discussed separately in Section 4.8. It is understood this comment relates to occupation and changes (or lack of) through the 1820s and 1830s, and influence on significance assessment and research potential. For most of the Lots, the persons identified as occupying in the 1810s/1820s and issued formal leases in 1823, are no longer living or leasing those properties in the 1830s. After the formal lease grants in 1823 there is an increase in the exchange of ownership and occupancies from the 1820s/1830s. The detailed site history in Section 2.3 (subheadings 2.3.1 to 2.3.39) provides information on the owners/occupiers for each lot. The archaeological assessment discussion for each lot in Section 4.8 provides key information and individuals from the detailed history in Section 2.3 that are relevant to the discussion (potential and significance). Two lots are identified with potential continued occupancy from c1820s through the c1830s – Lot 77 on Macquarie Street (William Bateman + family) (refer to Section 4.8.17) and Lot 76 on Macquarie Street (William Scott + family) (refer to Section 4.8.16). Edits to specifically reference these in the significance assessment are now included.

Actions

Edits to clarify the rationale for the archaeological phasing in Sections 4.7, 4.7.1 and 4.7.2.

Edits to Phase 1 and Phase 2 in Sections 4.7.1 and 4.7.2 to clarify archaeology associated with permissive occupancy and initial development following formal leases in 1820s, as the initial transition period to free settlement, as Phase 1. Also clarified is this decade also forms the beginnings of the free town (residential and commercial development) that is consolidated during the early-mid nineteenth century, as Phase 2.

This has been the intent throughout the assessment and has been checked and edited to clarify where needed throughout Sections 4.7, 4.8, 4.9 and 4.10.

Significance assessment – Associative (Section 4.9.3) and Research (Section 4.9.6) – updated to include specific reference and consideration of Bateman and Scott as longer-term residents of vacant allotments (not occupied by convicts) on Macquarie Street.

Statement of significance (Section 4.9.10) - last paragraph. This has been amended to reflect the outcome of the significance assessment more clearly. The reference to the phases and dates have been removed and replaced with the type of archaeology, to allow for nuances beyond a specific date.

Table 4.8 has been edited to clarify two longer term occupancies of Bateman (Lot 77) and Scott (Lot 76), and state significance level for 1820s/1830s occupation evidence associated with them.

3

Criterion A comment regarding Parramatta's significance, archaeological phasing and significance – addressed in responses and edits associated with comment 2 above.

Criterion A comment regarding Ritchie's ironworks and potential that it is state significant. The historical significance of Ritchie's ironworks is assessed as local. It is one of a number of private businesses that supplied rolling stock to the NSW government railways in the 1870s-1880s. Rolling stock was also manufactured at the NSW railways yards at Eveleigh, Cardiff and Chullora. Ritchie's ironworks demonstrates the evolution of industry in Parramatta. There is not a strong connection and contribution to the historical development of NSW or in demonstrating industrialisation patterns or innovations at a state level. Other contemporary foundries/engineering works better represent the evolution of small to large scale industrial enterprises, and industrialisation in NSW. For example, PN Russell foundry in Sydney, became one of the largest engineering works in the state during the mid-late nineteenth century. It produced a large range of products for several industries such as rail and mining, it is associated with technical innovations, key events in labour history and development of engineering as a profession. In comparison, Ritchie's ironworks, while significant in the history of Parramatta for the reasons identified in the assessment, does not reach the threshold for state significance. The items in MAAS are from Ritchie's Brothers in Auburn, an evolution of the business when it moved from Parramatta. The builder's plate is one of 40 manufactured at various workshops between the 1880s and 1950s held at MAAS as a set. It's inclusion in the collection does not increase the significance of Ritchie's ironworks archaeology to a state level. The significance assessment will be reviewed following archaeological excavations and included in reporting.

Criterion B comment that the level of associative significance in Section 4.9.3 is not discussed in first three paragraphs. This is incorrect - the first sentence of the first paragraph identifies state significant level and what is associated with that, as an introduction. The following paragraphs discuss this significance. Paragraph 3 includes an opening sentence as an introduction that refers to significance to Parramatta – this is local significance, as the reference is to Parramatta, not the state of NSW. The statement of significance (Section 4.9.9) provides the conclusion of what is local and what is state significance.

Criterion E comment regarding linking the research questions to the discussion of research potential in Section 4.9.6. The research themes used to group the research questions (Section 5.3.3) are informed by the

	<p>archaeological potential and significance assessment. The research themes are identified in the first paragraph of the research potential section discussion, which takes a holistic approach. The interconnections between research themes and questions arising from the archaeology are elaborated further in the research design section (section 5.3). The exclusion of specific research questions from the Criterion E discussion is intentional, as this warranted much more consideration and discussion on the opportunities from the site, which is provided in Section 5.3. The linking between the two is provided by the research themes being identified in Criterion E in the first paragraph of Section 4.9.6.</p> <p>The convict huts on Church Street and association with female convicts (and/or families) has been identified and considered in the archaeological potential section, archaeological significance, and research questions. The omission of specific reference to these in Criterion E research potential discussion is an oversight. Criterion E has been edited to include this.</p> <p>Comment relating to research potential significance levels and identifying what is state significant. The level of research potential is identified throughout the discussion – either with using local or state significance or referencing significance to Parramatta or the state of NSW. The concluding paragraph states that the research potential is significant at both a local and state level. The concluding paragraph has been edited to identify what archaeology is state and local, and that there is potential for synergy in a neighbourhood study.</p> <p>Criterion F comment. The rarity of a whole block investigation is identified in the discussion – refer to the last line of the first paragraph. This also links to the research potential and the potential for a synergy of local and state significance when considering the potential for a neighbourhood study.</p> <p>Town Drain comment. The assessment of local significance remains. The Town Drain is not 'undisturbed' as it has been previously impacted by various developments, including recent ones with archaeological excavations removing it. The Town Drain within the construction impact area of the site is likely to have been previous impacted to some degree by the current three storey building development at 74 Macquarie Street. The management for the Town Drain remains consistent with Condition D26 – as it is specified in this condition (and others) - which requires early investigation "to inform excavation in these areas". There is no reference to design in this condition.</p> <p><u>Actions</u></p> <p>Clarification to include specific reference to the Convict huts on Church Street being designed female convicts and/or families is Section 4.9.6.</p> <p>The concluding paragraph in Section 4.9.6 has been edited to identify what archaeology is state and local, and that there is potential for synergy in a neighbourhood study.</p>
4	<p>First comment/paragraph has been addressed by the response to comments 1, 2 and 3.</p> <p>Second comment is an observation. The statement of significance has been edited to include this, as it is consistent with the significance assessment.</p>
5	<p>Convict huts – comment is an observation. No actions.</p> <p>Urban Parramatta – comment relating to the need for the project to focus on the transition from convict to free settlement. This is reflected in the research questions under the theme 'Convicts and Free Settlers' and 'Urbanisation'. There is overlap with the themes as the boundaries between when it is 'convict' and when it is 'free' is not clear-cut at a particular date – the transformation is a process that is driven by multiple forces in the early-mid nineteenth century. The question of how this transition occurred and is there a point the archaeology of this site demonstrates a 'free town', will be explored through archaeological excavations and research. No actions.</p> <p>Contact – comment is an observation and indicates support of contact archaeology questions. The archaeological investigation and approach outlined in the ARD provides for a wider integration of Aboriginal and colonist archaeologies.. No actions.</p> <p>Convicts and free settlers – comment relating to comparison of gaol towns such as Newcastle and Port Macquarie. These have now been included in the last research question under the theme.</p> <p>Commerce and economies – comment relating to convict cottage industry. This is included in the first question under the theme and is also include in the Material Culture research theme questions. No actions.</p> <p>Comment relating to the need of the questions to ensure the research is building from previous work in Parramatta and other large urban digs in Australia and overseas. This is the intent and is identified in Section 5.3 opening paragraph and Section 5.3.2 bullet 3. No actions.</p> <p><u>Actions</u></p> <p>Last research question under Convicts and Free Settlers theme amended to include Newcastle and Port Macquarie</p>

6	<p>Comment is an observation and supports the public archaeology approach.</p> <p>No actions.</p>
7	<p>Comment is an observation. Archaeological collections from the Parramatta site will be stored at facility identified by Sydney Metro. The artefact cataloguing and analysis method in Section 6.14.4 identifies the artefact specialist may recommend discard for certain medium or low research potential artefacts. The preparation of a collection management policy is identified in Section 6.18.1 outlining the historical archaeological collection long term management/storage.</p> <p>No actions.</p>
8	<p>Observation regarding the excavation team.</p> <p>No actions.</p>
9	<p>Comments on the testing approach and condition D26.</p> <p>Tables 6.1 and 6.2 provide a summary, simplified and quick-reference guide to the archaeological methods for various construction activities and program. The detail of these methods and how they are applied during the archaeological fieldwork is provided in subsequent sections – Section 6.3 to 6.13 – including the process for state significant archaeology conservation review in Section 6.4. This has been clarified in Section 6.2.2 and Table 6.2.</p> <p>Condition D26:</p> <p><i>The revised Archaeological Research Design and Excavation Methodology(s) must include provide for early physical investigation of areas of impact identified to contain State significant archaeology or subterranean heritage items in the research design to inform excavation in these areas. This must include the Parramatta and The Bays metro station sites, including Parramatta Convict Drain, Parramatta Sand Body, White Bay Power Station (inlet) and Beattie Stormwater Channel.</i></p> <p>The method for early investigations required to “inform excavation in these areas” as required by Condition D26 is provided in Section 6.3 – historical archaeological test excavation. This includes informing the excavation strategy and management of state significant archaeology and the Convict Drain. The process for management of state significant archaeology is identified during testing, or if identified during archaeological salvage excavations of an area, is provided in Section 6.4. The process for salvage excavation is provided in Section 6.5. The sequence of these activities and triggers for applying the methods are included in each section.</p> <p>Comment that the ACH testing grid in Figure 6.5 does not align well with the historical investigation is incorrect. The mapping for the ARD has been produced using GIS. The ACH pits have been adjusted to allow for a combination of alignment with historical trenches, likely open yard areas with potential for intact natural soils, and avoidance of features recorded on historical maps. The purpose of Figure 6.5 is to illustrate the indicative ACH sampling grid on the Aboriginal archaeological zoning map and reference the historical archaeology trenches.</p> <p>Comment that test trench locations illustrated on Figure 6.4 are not near state significant archaeology illustrated in Figure 4.82 is incorrect. The mapping for the ARD has been produced using GIS. The overlay of buildings from historic maps on the 1895 plan in Figure 6.4 provides more useful information to illustrate the testing locations and multiple aims, including locations for state significant archaeology and the Convict Drain alignment.</p> <p>Adjustment of ACH pits to avoid significant historical archaeology is identified in Section 6.3.3 'Locations' on page 281.</p> <p><u>Actions</u></p> <p>Section 6.2.2 text added to clarify the table is a summary and details methods are in subsequent sections 6.3 to 6.13.</p> <p>Table 6.2 general archaeology program summary table updated to include reference to state significant conservation review step.</p> <p>Clarification in test trench locations in Section 6.3.2 to clarify the three trench types.</p> <p>Amended expansion to salvage to clarify where and why this would be undertaken.</p>
10	<p><u>Action</u></p> <p>Edited to clarify that review of opportunities for state significant archaeology will be undertaken by Sydney Metro and the Contractor team, including the archaeology excavation director(s). The process and outcome would be documented and included in the reporting, as per requirements of Condition D30.</p>

11	<p>Section 6.5.1 provides the general approach to archaeological salvage excavation. It includes cross-references to subsequent sections where the detail of each method is provided. Section 6.7 specifies the survey coordinate system as MGA2020 zone 56 AHD. Survey will be undertaken throughout the archaeological excavation process.</p> <p><u>Action</u></p> <p>Edit to Section 6.8.1 to clarify that survey will be undertaken throughout the archaeological excavation process, at various stages such as pre-, mid- and post- excavation (as-builts).</p>
12	<p><u>Action</u></p> <p>Artefact retrieval strategy for high and moderate research potential has been amended to include significance and phasing brackets in Section 6.9.2 and 6.9.3</p>
13	<p>Comment is an observation and samples strategy is supported.</p> <p>No actions.</p>
14	<p>Support for artefact database and collections approach.</p> <p><u>Action</u></p> <p>Added EAMC system as example of a best practice database that will be developed for the project in Section 6.14.4 bullet 3.</p>
15	<p>Reporting is outlined in Section 6.16. The approach, which includes preparation of several volumes, is specific to the Parramatta site, the archaeology, construction and archaeological program, the research design and public archaeology strategy.</p> <p>No actions.</p>

Attachment 8 – AHR 2021

GML Heritage Pty Ltd Sydney Metro West Parramatta Station Construction Site – Aboriginal Heritage Report, Report prepared for Sydney Metro October 2021.

Darling
Mills
Creek

GML
HERITAGE

Sydney Metro West Parramatta Station Construction Site

Aboriginal Heritage Report

Report prepared for Sydney Metro

October 2021

Parramatta
River

Parramatta

George Street

Macquarie Street

Parramatta
River

Great Western Highway

Harris Street

Hassall Street

Acknowledgement of Country

At GML we acknowledge that we work and live on the land of the First Australians. We know that this land was never ceded, and we respect the rights and interests of Australia's first people in land, culture, and heritage. We acknowledge their Elders past and present and support the concepts of voice, treaty, and truth in the Uluru Statement from the Heart.

Report Register

The following report register documents the development and issue of the report entitled Sydney Metro West, Parramatta Station Construction Site—Aboriginal Heritage Report, undertaken by GML Heritage Pty Ltd in accordance with its quality management system.

Job Number	Issue Number	Notes/Description	Issue Date
21-0167	1	Draft Report for Sydney Metro Review	11 August 2021
21-0167	2	Draft Report for Aboriginal Community Review	27 August 2021
21-0167	3	Final Report following Aboriginal Community Review	21 October 2021

Quality Assurance

GML Heritage Pty Ltd operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2016.

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

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Executive Summary

Sydney Metro engaged GML Heritage Pty Ltd (GML) to prepare a place-specific Aboriginal heritage archaeological assessment and excavation strategy for the Sydney Metro Parramatta station construction site. This project is one component of the Sydney Metro West – Concept and Stage 1 (major civil construction between Westmead and The Bays) project (Figure ES1).

This report provides the results of a detailed investigation into the potential Aboriginal archaeological resources of the Parramatta station site. This report is not an Aboriginal Cultural Heritage Assessment Report (ACHAR), but provides supplementary analysis to the previously prepared ACHAR, and forms part of the Environmental Assessment for the project prepared under Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW).

The Sydney Metro, Parramatta site is located centrally within the Parramatta Central Business District. Across the wider area of the Parramatta CBD, prior Aboriginal heritage and archaeological investigations have identified multiple locations that retain evidence of Aboriginal occupation over the past 40,000 years. This evidence is found primarily in the form of stone artefacts, manuported stone and features such as hearths and cooking pits. Parramatta is unique in Sydney in that it retains a deep sand sheet—the Parramatta Sand Body (PSB)—within which this archaeological evidence is retained. More recent archaeological evidence can be related to local Aboriginal traditions which provide insight into how this place was perhaps viewed and used by Aboriginal people.

The Parramatta Metro site is location at the margins of the Holocene alluvium and PSB, connected with an area which could have been a large wetland zone. This report provides a synthesis of the available archaeological and sedimentology data to present a model for possible Aboriginal connections. An Aboriginal archaeological predictive model has been developed which connects known historical impacts with the potential for remnant soils, and for those soil to hold Aboriginal objects. The predictive model describes 5 zones with archaeological potential. These are presented in Table ES1, and shown in Figure ES2.

This report also provides a heritage impact assessment, examining how the project would impact these different zones. An Aboriginal archaeological research design and archaeological investigation methodology is presented to guide the onsite archaeological works, and post excavation analysis of sediments and archaeology materials.

This report has been provided with the Metro project Registered Aboriginal Parties (RAPs) who were asked to review the report and provide feedback. RAPs who provided comment have supported the analysis, and proposed methods of investigation. All RAP comments are include in the final section of the report.

Table ES 1 Sydney Metro, Parramatta site, Aboriginal archaeology zoning plan.

Zone	Historical changes and soil integrity/ condition	Possible Aboriginal archaeology
1	Zones 1 has the fewest post-1788 impacts and changes; soils could retain good condition. The area is principally connected with yards, and 'movement' through the site. Some activities could have turned soil horizons over, but deposits would be expected to have moderate to good integrity.	Bore logs suggest 0.5m of fill is present, which could cap Holocene alluvium A ₁ and A ₂ horizons. If intact, the depth of A ₂ with Aboriginal archaeology could be between 300mm and 500mm deep. This should interface with a higher plasticity B horizon clay, which has no archaeological potential.
2	As for zone 1.	This zone is associated with the mapped extent of PSB, and also the water channel. Fluvial actions could have eroded PSB and deposited a further type of alluvium in this zone. Archaeology could be associated with A ₁ and A ₂ horizons of the alluvium, to a depth of 0.5m (?), below which PSB could be present, with further archaeological deposits to a depth of 1.5m below the current surface level (assuming 0.5m of fill).
3	Zone 3 has been subject to similar impacts to zones 1 and 2, until the construction of the car park. This action may have cut soil horizons, and no remnant soils with archaeological potential may remain in this zone. The condition and integrity of soils requires clarification through further sedimentary analysis.	If remnant soils are present, zone 3 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.
4	Zone 4 is associated with construction of houses and warehouses. These features will have cut wall foundations into the underlying basal clay, removing soils with the potential for archaeological deposits. Locations inside rooms can retain a full soil profile (as occurred in APHS Q1). More recent buildings are likely to have basements or lower floor levels which have cut remnant soils. The condition and integrity of soils below each building could vary between none and good, depending on how each building was constructed.	Where remnant soils are present, zone 4 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.
5	Zone 5 is associated with a historical archaeological excavation completed in 1996 prior to construction of the existing building. The results of this excavation were not available at the time of preparing this report and the survival of remnant soils with archaeological potential is not known.	Where remnant soils are present, zone 5 could present archaeological deposits according to the soil landscape. The description for zone 1 would be applicable. The survival of remnant soils can be clarified following removal of the building.



Figure ES1 The Parramatta metro station construction site in its immediate context. (Source: GML 2021, with Sydney Metro data, over base map from Nearmap)

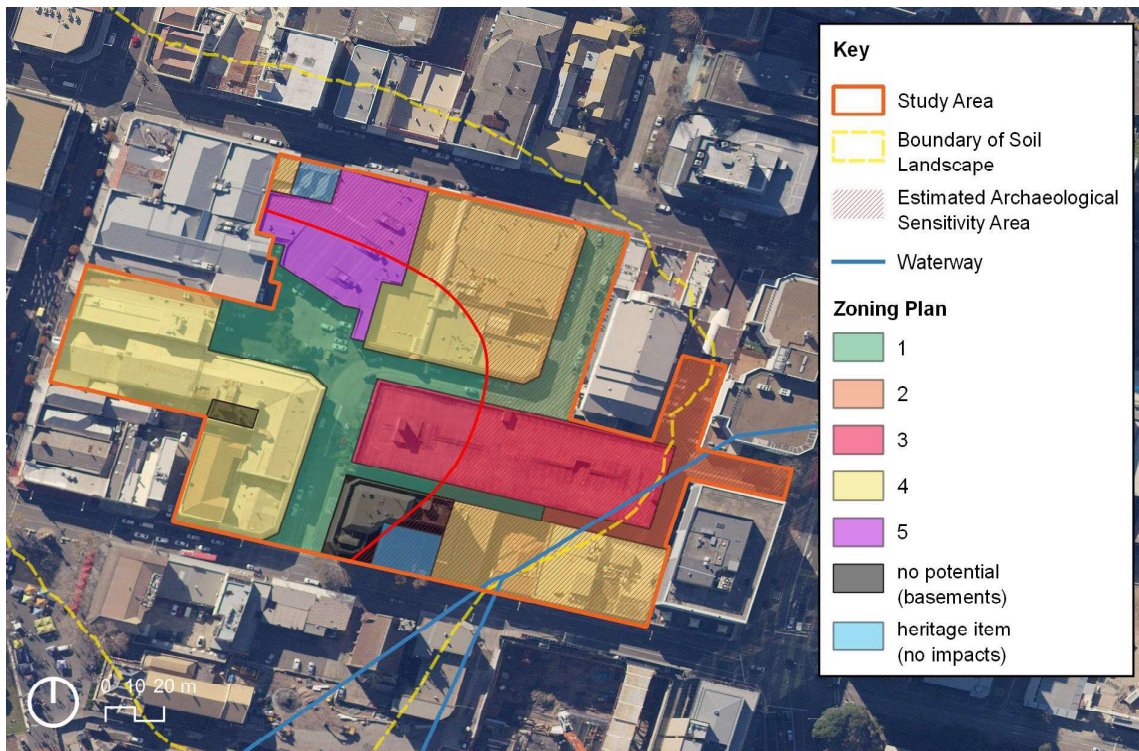


Figure ES2 Aboriginal archaeology zoning plan for the Sydney Metro, Parramatta site, with hypothetical 'sensitivity line'. (Source: GML 2021, over Nearmap base map)

Sydney Metro, Parramatta— Introduction

1 Sydney Metro, Parramatta—Introduction

1.1 Introduction

Sydney Metro engaged GML Heritage Pty Ltd (GML) to prepare a place-specific Aboriginal heritage archaeological assessment and excavation strategy for the Sydney Metro Parramatta station construction site. This project is one component of the Sydney Metro West – Concept and Stage 1 (major civil construction between Westmead and The Bays) project (Figures 1.1 to 1.3).

This report provides the results of a detailed investigation into the potential Aboriginal archaeological resources of the Parramatta station site. This report is not an Aboriginal Cultural Heritage Assessment Report (ACHAR), but provides supplementary analysis to the previously prepared ACHAR, and forms part of the Environmental Assessment for the project prepared under Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW).

1.1.1 About Sydney Metro

Sydney Metro is owned by the NSW Government and is part of the NSW Government’s transport cluster, operating as a transport delivery agency for Transport for NSW. The NSW Government’s Sydney Metro authority has been tasked with developing and delivering metro railways and managing their operations.

Sydney Metro also leads the development of station precincts to meet customer and community needs, transforming the way Sydney travels and helping shape the future of the city. Sydney Metro has responsibility for delivering great places around metro stations so that precincts are designed, developed, activated, and managed in alignment with the metro system to ensure the best outcomes for customers and communities.¹

1.1.2 Sydney Metro—Parramatta

The Sydney Metro West includes a station in the Parramatta Central Business District (CBD) (Figures 2 and 3). The *Sydney Metro West Environmental Impact Statement: Westmead to The Bays and Sydney CBD* (EIS) for the site identified the potential for both significant Aboriginal and non-Aboriginal archaeological remains. The archaeological potential of this site is considered to present a potentially high risk of disruption to the Sydney Metro program due to the need to understand and investigate the archaeological resources within a tight time frame.

This Aboriginal heritage assessment is being undertaken in parallel with the preparation of a site-specific historical Archaeology Research Design and Excavation Methodology (ARD). An integrated methodology for historical archaeology and Aboriginal archaeology will be developed based on this report.

1.1.3 Sydney Metro West—Project EIS

Sydney Metro has submitted, as part of its EIS, technical papers for Aboriginal heritage including an ACHAR by Artefact (2020)² (<https://www.planningportal.nsw.gov.au/major-projects/project/25631>).

The project EIS was prepared as part of the State Significant Infrastructure (SSI) application in 2020. In addition, an Aboriginal heritage due diligence report has been prepared to inform the investigation of utilities during the project’s enabling works (RPS 2021³). These two reports provide background

details on the project, the local environment, and Aboriginal heritage, and are referred to throughout this report.

Following assessment by the Department of Planning, Industry and Environment (DPIE), *Sydney Metro West – Concept and Stage 1 (major civil construction between Westmead and The Bays)* is an approved SSI project (Application No. SSI-10038).

1.1.4 Project Staging

The approved Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (Stage 1 of the planning approval process for Sydney Metro West), application number SSI-10038, were approved on 11 March 2021.

The approved Concept includes:

- Construction and operation of new passenger rail infrastructure between Westmead and the central business district of Sydney, including:
 - Tunnels, stations (including surrounding areas) and associated rail facilities
 - Stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- Modification of existing rail infrastructure (including stations and surrounding areas).

Approved major civil construction work for Sydney Metro West between Westmead and The Bays (Stage 1 of the planning approval process) includes:

- Tunnel excavation including tunnel support activities between Westmead and The Bays
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Docks and The Bays
- Shaft excavation for services facilities
- Civil work for the stabling and maintenance facility at Clyde.

Stages of the planning approval process for Sydney Metro West currently underway include:

- All major civil construction works including station excavation and tunnelling between The Bays and Sydney CBD (Stage 2 of the planning approval process)
- Tunnel fit-out, construction of stations, ancillary facilities and station precincts, and operation and maintenance of the Sydney Metro West line (this proposal).

1.1.5 Scope for this Report

The purpose of this report is to confirm how the Sydney Metro, Parramatta site has the potential for Aboriginal heritage archaeological sites, places, objects, landscapes and/or values, in accordance with the Heritage NSW guidelines for Aboriginal heritage assessment.

An Archaeological Research Design and Excavation Methodology will be prepared for management of the site to accord with the project's conditions of consent. This report will be submitted to the project's Registered Aboriginal Parties (RAPs) for their review and comment.

1.2 Statutory Context

In NSW, Aboriginal heritage is principally protected under two Acts:

- the *National Parks and Wildlife Act 1974* (NSW) (NPW Act)
- the *Environmental Planning and Assessment Act 1979* (NSW) (EPA Act).

The Sydney Metro West—Concept and Stage 1 is an approved SSI project, with consent issued by the NSW Planning Minister Rob Stokes on 11 March 2021. Given the project is SSI, impacts to Aboriginal objects arising from the proposed works do not require approvals under the NPW Act. All future management, works and impacts are guided and approved under the project's conditions of approval.

Approval for the concept proposal and Stage 1 include provision for Aboriginal heritage under Conditions C-B4 to C-B6 (Heritage Interpretation), C5 and C13 (Construction Environmental Management Plan), D19 to D24 (Heritage, Aboriginal Heritage), D27 to D29 (Excavation and Archaeology), and D32 (Unexpected Finds). This report has been prepared in accordance with, Condition D20, and the first part of Condition D22 and the intent of Condition D19:

D19. All reasonable steps must be taken not to harm, modify or otherwise impact Aboriginal objects except as authorised by this approval.

D20. The Registered Aboriginal Parties (RAPs) must be kept informed about Stage 1 of the CSSI. The RAPs must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of Stage 1 of the CSSI.

D22. An Aboriginal Archaeological Test Excavation Methodology(s) must be prepared and appropriately integrated with the revised Archaeological Research Design and Excavation Methodology. The Aboriginal Archaeological Salvage Excavation Methodology(s) must be prepared after analysis of the test excavation results.

D23. At the completion of Aboriginal cultural heritage test and salvage excavations, an Aboriginal Cultural Heritage Excavation Report(s), prepared by a suitably qualified expert, must be prepared in accordance with the Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW, OEH 2011 and the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, DECCW 2010. The Aboriginal Cultural Heritage Excavation Report(s) must document the results of the archaeological test excavations and any subsequent salvage excavations. The RAPs must be given a minimum of 28 days to consider the report and provide comments before the report is finalised. The final report must be provided to Heritage NSW within 24 months of the completion of the Aboriginal archaeological excavations (both test and salvage).

1.3 Authorship

This report has been prepared by Dr Tim Owen (Principal, GML), with assistance from Andie Coulson (Graduate Heritage Consultant, GML). The report has been reviewed by Sharon Veale (CEO, GML).

1.4 Glossary

The following terms and phrases are used in this report:

- Contact Phase—the time period following 1788.

- Deep Time—referring to all time periods prior to ‘written’ Colonial records.
- PSB—Parramatta Sand Body, also known as the Parramatta Sand Sheet. The fluvial and aeolian sand sheets located adjacent to the Parramatta River, notably associated with the tidal portions of the Parramatta River.



Figure 1.1 The location of Parramatta in Western Sydney. (Source: GML 2021)



Figure 1.2 The location of the Parramatta Metro Station and construction site in the context of the Sydney Metro West line. (Source: Sydney Metro 2021)



Figure 1.3 The Parramatta metro station construction site in its immediate context. (Source: GML 2021, with Sydney Metro data, over base map from Nearmap)

1.5 Endnotes

- ¹ Sydney Metro 2020, SMC-21-0118 Archaeological Services – Parramatta & The Bays Services Brief.
- ² Artefact 2020, Sydney Metro West, Stage 1. Technical Paper 4: Aboriginal Cultural Heritage Assessment Report Parramatta, Cumberland, Canada Bay, Burwood, and Inner West Local Government Areas, report for Sydney Metro.
- ³ RPS 2021, Sydney Metro West: Utilities Investigation – Parramatta Draft Aboriginal Heritage Due Diligence, report for Sydney Metro.

The Setting and Aboriginal Heritage Context

2 The Setting and Aboriginal Heritage Context

This section outlines our understanding of Parramatta’s environmental and heritage context, both ‘deep time’ and ‘Before Time’ (that is prior to Aboriginal people being in the area we now refer to as NSW). Parramatta’s appearance, topography, and condition have changed dramatically over the course of millennia. The questions framing our analysis are:

1. How the place has changed over time?
2. How did Aboriginal people live, move through, and use the banks and flats adjacent to the feature we now call Parramatta River?

Parramatta’s landscape began forming perhaps 1 to 2 million years ago, at a time when sea levels were far lower than today, and *Homo erectus*—an antecedent to modern humans—still walked the earth. The deep underlying bedrock platforms were gouged out (probably by water action), leaving two depressions in the basal sandstone and shale geologies. As sea levels rose, alluvial materials were deposited and settled to form the deep clays that lie beneath the surface geology and regoliths of today.¹ Parramatta’s surface geology and soils consequently formed over the later Pleistocene and Holocene, in the last 100,000 years.

Evidence suggests that the first people came to the Sydney Basin region (including the area we now call Parramatta) approximately 40,000 years ago (Figure 2.1).² Aboriginal people have maintained a strong and enduring connection with this place ever since. The Aboriginal people of Parramatta are identified by local Darug people today, and in early historical accounts at the time of British colonisation, as the Burramattagal or the Boromedegal.³ The Burramattagal were part of a much broader and larger group commonly referred to as the Darug, a major language group extending across what is now known as Sydney’s Cumberland Plain.

Parramatta is archaeologically unusual. It retains multiple sites with material evidence of Aboriginal presence since the earliest period of occupation of the Sydney Basin.

This section provides an overview of this context and connects the Sydney Metro, Parramatta site, with the known archaeological and sedimentary record. This context is consequently used to analyse the site for the Sydney Metro, Parramatta project (Section 3).

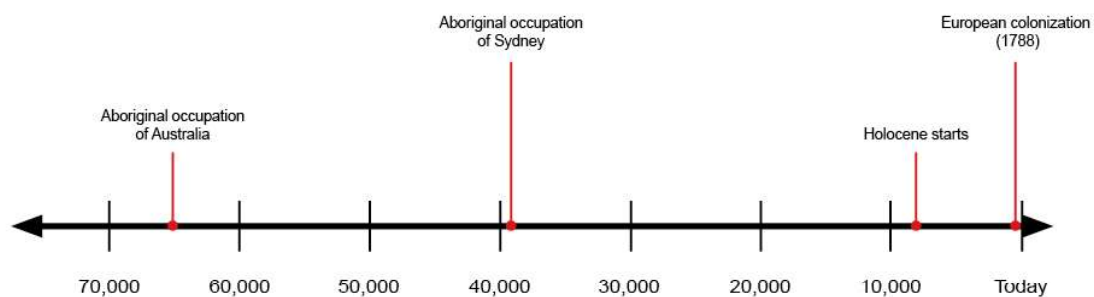


Figure 2.1 Timeline showing the approximate length of Aboriginal people’s occupation of Australia and Sydney. (Source: GML 2021)

2.1 Parramatta—Annotated Bibliography

In recent years, Aboriginal heritage and sedimentary investigations within Parramatta have sought to understand the relationships between landforms, soil landscapes, and long-term trends in archaeological deposits. When synthesised together this body of work provides some insight and understanding regarding Aboriginal peoples' habitation and lifeways across Parramatta over 40,000 years. Due to the breadth of the literature and the site-specific approach required for this project, an exhaustive review is not likely to yield significant new information of value to the current study. Refer to Artefact (2020)⁴ and RPS (2021)⁵ for more extensive analysis of the available heritage background documents.

We note that technical understanding of Parramatta's sedimentology and archaeology is evolving, and there are currently many information gaps in this area. These gaps are identified and underpin part of the archaeological and sedimentary research design for the project.

The following Aboriginal sites, projects, papers and reports are considered essential to developing a detailed evidence-based understanding of Aboriginal heritage in Parramatta.

2.1.1 Sediments and Geomorphology

- Parramatta Sand Body (PSB), mapping by Mitchell (2008):⁶ this report provides mapping for the extent of PSB and Birrong alluvium across Parramatta. The mapping is relatively accurate. This report provides a reliable baseline for understanding the extent of the PSB today. It also includes an early interpretation of PSB formation, along with thermoluminescence dates for its formation.
- Owen and Player (in press):⁷ this paper outlines the PSB formation process, the age of its formation, and the connection with Aboriginal archaeology held in the PSB. The paper deepens an understanding of the PSB and its connection with Aboriginal heritage in Parramatta.
- Aboriginal sites (PS2, 3, 5 and 6) at Parramatta Square, post-excavation reporting:⁸ these four Aboriginal sites are the most extensive identified on the Birrong alluvium. The post excavation reports define and establish the baseline for archaeological deposits on this soil landscape. The reports also contains two sedimentary reports by Dr Roy Lawrie,⁹ and a geomorphology report by Dr Sam Player.¹⁰ These three non-archaeological reports are the only scientific analysis of the alluvial soil landscape which bisects the PSB in the centre of Parramatta.

2.1.2 Archaeological and Cultural understanding

- Owen and Darug Custodial Knowledge Holders (DCKN) (in preparation):¹¹ this paper provides a synthesis of 25 Aboriginal sites from across Parramatta, analyses their content and period of occupation, and presents a landscape model for the long-term Aboriginal occupation of Parramatta. Some of the outcomes from this paper have been used and presented in this report and underpin the analysis of the Sydney Metro site.
- Aboriginal sites (PS2, 3, 5 and 6) at Parramatta Square, as described above. These reports contain details of later Holocene, and post 1788 glass artefacts connected with soils on the margins of the alluvial soil landscape.
- Arthur Phillip High School (APHS) and Parramatta Public School (PPS) Aboriginal Archaeological Post-excavation Report:¹² this report provides the outcomes of the detailed

archaeological investigations across lands to the immediate east of the Sydney Metro Parramatta site. The work included excavations on Blacktown residual soil, Birrong alluvium and the PSB, which recovered stratified sequences of stone artefacts from all three soil landscapes. Two locations (on the PSB and residual soil landscapes) yielded post 1788 sites, with glass and flint artefacts. The report provides a detailed statistical analysis of lithics (stone artefacts) from many Aboriginal sites across Parramatta, and underpins the development of the landscape model presented in Owen and DCKN (in preparation). The report also includes a comprehensive integration of prior Aboriginal heritage reporting within Parramatta, contextualising this information into a framework for Aboriginal cultural understanding.

- Parramatta Light Rail, Aboriginal Archaeological Post-Excavation Report:¹³ archaeological and sedimentary analysis for this project included testing soils and sediments along Church Street and Macquarie Street, Parramatta. The analysis and outcomes inform the precise nature of soils within the street corridors, and can be extrapolated to the Sydney Metro site. The project data also includes additional geotechnical information, which underpins our analysis for the Sydney Metro site.
- Aboriginal Sites RTA GTC1 and CG1, post-excavation reporting:¹⁴ these two archaeological excavation reports focus on the largest Aboriginal archaeological deposits within the PSB on the southern side of Parramatta River. Data from these sites on the nature, extent and age of Aboriginal archaeology within the PSB provides a baseline for the Parramatta CBD.
- Barry et al 2021:¹⁵ this paper provides evidence for a late Pleistocene to Holocene site on the northern side of Parramatta. A key outcome is the identification of a rare stone material, which was traced to an origin in the Blue Mountains. The paper contains evidence demonstrating the movement of stone material across considerable distance, and indicates the research value of archaeology in the PSB.
- White 2018:¹⁶ this PhD thesis presents analysis of Aboriginal lithic sites across Parramatta and the wider Cumberland Plain. It establishes the chronology for Sydney's Aboriginal occupation, and has been used as the baseline for studies in Parramatta.

Key information from these reports, papers and sites is referred to and cited as relevant throughout this report.

2.2 Climatic Background

Extensive climatic changes took place during the period of Aboriginal occupation of Parramatta. These changes would have affected many environmental factors, particularly temperature, rainfall patterns, and sea level. Temperature and rainfall would have directly altered the vegetation communities and ecology of the area. Indirect effects would have included alterations to basic social and economic factors, such as water availability and subsistence. The late Pleistocene rise in sea levels resulted in considerable land loss along the east coast of Australia. This included the flooding of the area which became Sydney Harbour, and the formation of a tidal estuary at Parramatta. An overview of changing environmental conditions for Sydney is provided in Table 2.1.

Table 2.1 Late Pleistocene and Holocene temperature, effective precipitation (considered as a trend in relation to the previous time period), and sea level (relative to today), for the Sydney region. Eastern Regional Sequence (ERS) phases are described in Section 2.4.2. (Source: Owen and DCKN, in preparation, Table 1¹⁷)

Time point	Temperature	Effective precipitation	Sea level (m)	ERS phase
c. 32 ka	Colder	Wetter	-70m	1
c. 25 ka	Hotter	Drier	-130m ?	1
c. 20 ka (LGM 21 ± 3 ka)	Colder	Wetter	-110m ?	1
c. 17 ka	Hotter (8–10° < today)	No change	-100m ?	1
c. 14 ka	Hotter/no change	Wetter	-65m	1
c. 9 ka	Hotter	Wetter	-11m	1 to 2
c. 7 ka	Hotter (higher than today)	Wetter (higher than today)	+2.0m	2
c. 5 ka	No change/colder	No change, drying	+1.5m	2
c. 2 ka	No change/colder	Drier	+1.5m	2B

2.3 Sedimentary Background

Parramatta is associated with three different soil landscapes:

- Blacktown residual soil
- the late Pleistocene or Tertiary alluvial clay and sand, which is often referred to as the ‘Birrong alluvium’
- the Parramatta Sand Body (PSB).

Each soil landscape has a distinct formation period, formation process and sedimentary characteristics; each can retain Aboriginal archaeology, although the nature of that archaeology is distinct because of the inherent characteristics of the soils. A brief summary of each soil landscape is provided for context.

The extent of these three soil landscapes was initially mapped by Mitchell in 2008 (see Figure 2.2 for an updated version of this map). This mapping has been used exhaustively by archaeology projects in Parramatta since 2008. For the Sydney Metro, Parramatta site, Mitchell’s mapping has been used as the baseline for commencing analysis of the archaeological and sedimentary modelling.

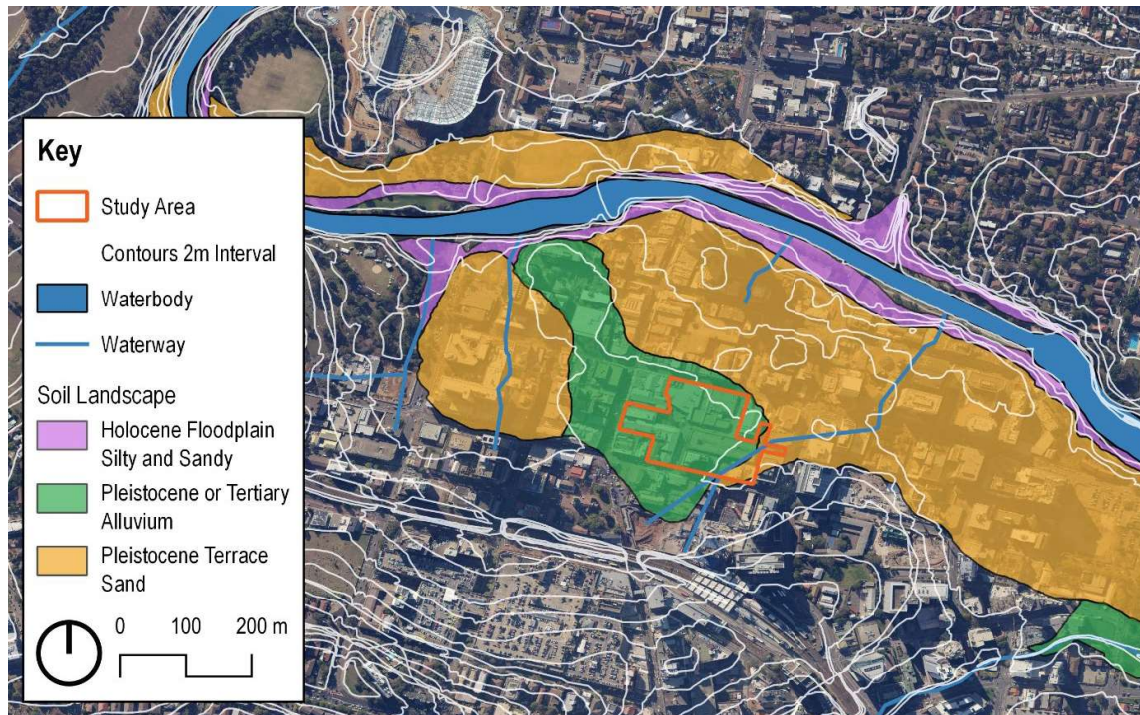


Figure 2.2 A map of Parramatta showing the soil landscapes, contour lines and water sources. (Source: GML 2021, with data from Mitchell 2008, DPIE, Owen and DCKN [in preparation])

2.3.1 Parramatta Sand Body



The PSB is a sand deposit, initially derived from the fluvial movement of upstream sand and clay materials, associated with the catchments of Darling Mills Creek and Toongabbie Creek. When considered as a whole unit, the PSB is very complex and exhibits considerable local variability. It was deposited as a sand terrace in and around Parramatta River (and also farther upstream), with expressions extending back 300m from the river. Optically stimulated luminescence (OSL) and thermoluminescence (TL) dating,¹⁸ undertaken for three separate locations with disconnected PSB expressions, all suggest the initial fluvial formation occurred between 58 and 50 thousand years ago. The expressions of the PSB set down during its initial formation are deep, and can comprise hard-setting clays and/or deposits of deeper and softer sand. These older, deeper PSB units do not contain expressions of Aboriginal archaeology, primarily because they formed before Aboriginal occupation in Parramatta.

Aboriginal people started living on the PSB around 40,000 years ago. The places they occupied contain evidence for stone artefacts, hearths, cooking pits and flat sandstone plates they transported into their living areas. Both habitation and the changing environment mobilised the fluvial PSB sands and clay, causing them to become airborne (aeolian) and drift like dune sand. In many areas, this action covered the archaeology of the living places, burying it below a harder-setting (yet still 'soft') clayey sand. The action of aeolian sands burying Aboriginal archaeology continued post-1788, and means that places used by Aboriginal people throughout the last 40,000 years hold stratified archaeological deposits—the deeper you excavate, the older the archaeology uncovered. Detailed analysis of materials from some Aboriginal sites with this extended period of occupation has shown


the stratigraphical sands are very stable, and the sites retain very high levels of integrity (ie the archaeology has not been moved or disturbed following its deposition).¹⁹

The nature of the PSB with archaeology varies across Parramatta in its appearance, chemical composition, hardness and depth. Some of the differences are outlined in Table 2.2. The first two examples show the difference in PSB to the east and northwest of the Sydney Metro, Parramatta site. The last four images show how the PSB can vary along a single transect moving away from the river. The variability in these examples demonstrate why a location-specific approach needs to be undertaken to assess the PSB.

Table 2.2 Images and descriptions of the PSB from across Parramatta.

Photographs of the PSB (all photographs by GML)	Description of the PSB
	<p>Church Street, located 80m beyond the northwest boundary of the Sydney Metro, Parramatta site:</p> <ul style="list-style-type: none"> • 210m from the top of the Parramatta River riverbank. • 0.5m fill above the PSB. • Very distinct, sharp interface with the fill layer above. • Medium compaction PSB clayey sand. • The PSB was quite uniform through all spits until a hard basal clay PSB layer was reached at spit 9. • One Aboriginal object present in spit 3.
	<p>APHS Quadrant 2, located 250m east of the Sydney Metro, Parramatta site:</p> <ul style="list-style-type: none"> • 270m from the top of the riverbank. • 1.2m of fill and historical topsoil above the PSB. • 0.3m of softer aeolian PSB with 19 lithics, above the hard-setting lower PSB clays— which in this instance could be residual clays from the shale geology, or the ancient alluvial clays connected with the initial formation of soils in Parramatta. • Many nodules of iron and manganese, which form from minerals leaching out of solution.

Photographs of the PSB (all photographs by GML)	Description of the PSB
	<p>Cumberland Hospital—eastern side (10m from the top of the riverbank):</p> <ul style="list-style-type: none"> • 0.5m fill above PSB. • Very distinct, sharp interface with the fill layer above. • Very soft clayey sand PSB upper terrace. • Orange to brown in colour. • Uniform colour with depth. • Few inclusions, although tree and plant roots extended to depth. • No Aboriginal objects present.
	<p>Cumberland Hospital—eastern side (40m from the top of the riverbank):</p> <ul style="list-style-type: none"> • 0.5m fill, over 0.2m historical archaeology, over PSB. • Gradual interface with the historical topsoil layer. • Deep softish clayey sand upper terrace. • Varying colour with depth, with some deeper orange patches. • Few roots, only present in the upper layer. • Some inclusions which are present as iron deposits. • High density of Aboriginal objects through all spits across the extent of the site (a high density in this case is over 5/metre/spit).
	<p>Cumberland Hospital—eastern side (120m from the top of the riverbank):</p> <ul style="list-style-type: none"> • 0.5m fill, over PSB. • Sharp interface between the fill and PSB. • Medium depth, hard clayey sand upper terrace. • Varying colour with depth, with some deeper orange patches. • Few roots, only present in the upper layer. • Many nodules of iron and manganese, which form from minerals leaching out of solution. • A few Aboriginal objects were present.

Photographs of the PSB (all photographs by GML)	Description of the PSB
	<p>Cumberland Hospital—eastern side (170m from the top of the riverbank):</p> <ul style="list-style-type: none"> • 0.7m fill, over 0.2m historical topsoil, over PSB. • Gradual interface with the historical topsoil layer. • Shallow depth, hard, very clayey sand upper terrace. • Some colour variation with occasional brownish patches. • Few roots, only present in the upper layer. • Some nodules of iron and manganese, which form from minerals leaching out of solution. • Some pressed in modern material, and two Aboriginal objects.

Soil landscape mapping of the PSB extent (Figure 2.2) suggests the southeast corner of the Sydney Metro, Parramatta site is associated with an expression of the PSB which protrudes from the main deposit. If the mapping is correct, this expression would be 365m from the river, and is expected to be relatively thin, bleached yellow to white, with manganese and iron nodules, as per the expressions in the Cumberland Hospital and in APHS. The extent of area with mapped PSB is approximately 200m².

2.3.2 Alluvial Clay and Sand

The centre of Parramatta contains a large expression of the late Pleistocene or Tertiary alluvial clay and sand, which is often referred to as the ‘Birrong alluvium’. However, this should probably be classified as a separate unit from the ‘Birrong alluvium’ because it has different characteristics. Very little is known about this soil unit and it has been subject to few sedimentary investigations.

Mitchell provided the first description of this unit:

... an area of high ground (about 10mASL) appears to be underlain by another body of alluvium that is a mixture of clay and sand that is probably older than the main sand body and may even be of Tertiary age and comparable to the known Tertiary clay at Rosehill ... no section has been seen where the two materials interface, its precise nature and distribution remain uncertain. It is known to contain Aboriginal artefacts on the [Cumberland] Hospital site and should be considered to be part of the same landscape as the sand body in terms of its archaeological management although it is less likely to contain large numbers of artefacts or deeply buried artefacts.²⁰

Later descriptions of this soil landscape indicate there are two distinct units. Lawrie described these units at the Parramatta Square sites (which are on the southernmost expression of this soil landscape):

The lower unit is a ‘deeply weathered layer 2 m thick, probably Pleistocene in age, and may have formed either on the old colluvium, or on a very old deposit of alluvial sediments... This old mottled clay has a significant effect on profile drainage; its very low permeability seriously impedes downward movement, producing perched watertables in the layers above it, particularly where there might be depressions in its upper surface...


The upper boundary of the dense clay subsoil was clear or abrupt, reflecting a change in the depositional history ie that the silty sediments above it were deposited by more recent alluvial activity... [there are] many small charcoal fragments in the very pale upper silty alluvial layer (A2 horizon); this very pale (bleached) horizon is common across the PS2 site, sitting underneath a variable depth of surface fill and/or disturbed historic topsoil.²¹


This unit has been archaeologically excavated both in the Parramatta Square excavation and at APHS. The expression of alluvium at APHS had not been mapped by Mitchell, indicating the nature of variability around the margins of these units. At both sites, Aboriginal archaeological deposits were only associated with the thin upper unit of pale silty alluvial unit, described as an A₂ horizon. A sharp interface with ancient B horizon clay means Aboriginal objects have been recovered from depths below 300mm on this soil landscape (Table 2.3).

The underlying ancient alluvial/colluvial clay is described as having ‘very low permeability’, which explains the waterlogged nature of landforms within the centre of Parramatta. Wetlands were likely to form, notably during periods of wetter climatic conditions (Table 2.1). In locations suitable for Aboriginal habitation, which are most likely to be associated with the margins of the wetland area, the nature of the more recent alluvium means that it should be capable of retaining stratified archaeological deposits, albeit within a shallow profile. Dates for archaeological features within this alluvial layer have been obtained from carbon associated with Aboriginal features (at APHS) and TL connected with Aboriginal clay heat retainers (at PS2). All dates returned are from the last 2,000 years. Analysis of lithics from these two sites also suggests the archaeology in this alluvium is from the middle to later Holocene. This report refers to this unit as the ‘Holocene alluvium’.

Mapping of soil landscapes (Figure 2.2) suggests the majority of the Sydney Metro, Parramatta site is associated with this alluvial soil landscape. Descriptions and prior work on this soil landscape indicate that the primary deposits capable of retaining Aboriginal archaeology are relatively thin and located below both modern fill and historical topsoil.

Table 2.3 Images and descriptions of the alluvial clay and sand at Parramatta Square (taken from Lawrie 2019) and APHS (taken from GML 2021)

Photographs of the alluvium	Description of the alluvium
 <p data-bbox="256 1801 797 1854">The alluvium at Parramatta Square 2. (Source: Lawrie 2019, p 1)</p>	<p data-bbox="873 1360 1344 1413">Parramatta Square 2, located 85m south of the Sydney Metro, Parramatta site:</p> <ul data-bbox="873 1423 1352 1749" style="list-style-type: none"> • On the southern expression of the mapped extent of the soil landscape. • Silty alluvial sediments up to 40cm thick. • A dark A₁ surface horizon, which was absent, truncated or disturbed. • A pale A₂ horizon containing many small charcoal fragments. • A yellowish B horizon at the bottom. This clay is a much older hard, dense clay. • Aboriginal objects were recovered from the A₂ horizon only.

Photographs of the alluvium	Description of the alluvium
	<p>APHS Quadrant 1 (Q1), located 120m east from the Sydney Metro, Parramatta site:</p> <ul style="list-style-type: none"> • Expression of alluvium had not been previously mapped. • Alluvium (A₂) was ~200mm deep, with a thin layer of historical topsoil above. • The base had a sharp interface onto the hard-setting basal B horizon clay. • Trench measuring 5.25m yielded 81 Aboriginal lithics from the A₂ horizon.

2.3.3 Blacktown Residual Soils

The Blacktown soil landscape²² occurs extensively across the Cumberland Plain between the Georges River and Parramatta River. Soils in this landscape are residual, formed by the weathering in situ of the underlying geology—predominantly shale. They tend to be shallow to moderately deep (less than 100cm), red brown podzolic soils on crests, grading to yellow podzolic soils on lower slopes and drainage lines. These soils increase in depth on the lower slopes, and weathered ironstone concretions are common. The topsoil strata lie over strong, mottled basal clay that is plastic in consistency.

The ancient residual nature of these soils means that they rarely hold Aboriginal archaeological deposits in a stratigraphic sequence. Artefacts discarded on the ground surface become worked into the profile through disturbance and bioturbation. However, some instances do exist where separation of the upper and lower spits can display stratified sequences (for instance, at the APhS there was distinct separation between silcrete and quartz artefacts in Trench 5).

Soil landscape mapping suggests the Sydney Metro, Parramatta site is not associated with the Blacktown soil landscape; however, the accuracy of mapping at its margins means these soils could be found along the southern boundary, specifically the southeast corner of the site.

2.4 Aboriginal Heritage Background

2.4.1 The AHIMS Records

The Heritage NSW Aboriginal Heritage Information Management System (AHIMS) is a record of Aboriginal sites recorded across NSW. In many landscape contexts the AHIMS record provides useful baseline data which may inform archaeological investigation. However, for Parramatta the AHIMS record is not particularly insightful. The record is relatively scant, two-dimensional (in that it only includes stone artefact sites and areas with potential archaeological deposit [PAD]), and the recorded 'dots' or sites do not describe the extent of archaeological deposits, nor the deep time connection of the archaeology. The AHIMS record for Parramatta is provided in Figure 2.3. The Sydney Metro, Parramatta site has one recorded AHIMS site located within its boundary—AHIMS #45-6-3582 is an area with PAD (the Macquarie Street PAD). Further descriptions of the AHIMS record are provided by RPS (2021) and Artefact (2020).



Figure 2.3 The results of an AHIMS search for Parramatta. (Source: GML 2021, with data from AHIMS, over Nearmap base map)

2.4.2 Parramatta’s Deep Time Cultural Landscape

A detailed analysis of Aboriginal archaeological sites across the Parramatta CBD, coupled with interpretation through environmental and social themes, is presented in Owen and DCKN (in preparation). In this section, we provide an analysis of the deep time Aboriginal cultural landscape within the relevant context for the Sydney Metro project. This underpins the approach to Aboriginal heritage (archaeological) assessment, management and future investigations.

Analysis of 25 Aboriginal sites across Parramatta has provided an understanding of how occupation and interaction with the landscape changed over 40,000 years. An overview of this interpretation is provided in Figure 2.4 and Figure 2.5. Analysis of lithics from 25 sites was undertaken, combined with carbon, TL and OSL dates, and phasing of use/occupation was designated for each site. The periods of occupation were grouped under the Eastern Regional Sequence (ERS),²³ which describes four main phases, each with its own primary technological characteristics:

- Phase 1—Pre-Bondaian, prior to 7,000 Before Present (BP)
- Phase 2—Bondaian, after 7,000 BP to 1,500 BP
- Phase 2B—Late Bondaian, after 1,500 BP to 1788
- Phase 3—the ‘Contact Phase’, following European colonisation in 1788.

The deep time Aboriginal cultural landscape of Parramatta is underpinned by its physical geography (Figure 2.4). Parramatta is defined by fixed boundaries, with the east–west ridgeline in the south, small rises and a bend in the river to the west, the actual river valley on the north, and the floodplain of Clay Cliff Creek to the east. These features provided a habitation ‘zone’ which may have been socially

described, with access controlled and restricted at certain points during the deep time. Prior to sea levels rising at the end of the Pleistocene, the river was not tidal and formed a small freshwater creek which flowed through the deeply incised river valley. The advent of tidal waters brought substantial change to how Parramatta was viewed economically and (later, in Phase 2B) socially.

The Holocene tidal reach of the river has remained relatively constant (Figure 2.4), and corresponds with a central portion of Parramatta which contains alluvial clays and sand. This location likely became a wetland area. During wetter Holocene periods (ERS Phase 2, Table 2.1) it would have been swampy and a source of freshwater foods. It is notable that no dense concentration of archaeological sites has been recorded within this 'wetland' zone (AHIMS record in Figure 2.3), with excavated archaeological sites being positioned on its margins (sites 6, 9, 10 and 11, Figure 2.4).

Temporal and spatial patterning of archaeological sites within this landscape is clearly apparent. Certain zones have been a focus for more concentrated Aboriginal use, which has resulted in an archaeological signature. The occupation and use of these sites (places) differed; some were used across all time points, but most were connected with one or two defined periods (Figure 2.5). Pleistocene (Phase 1) occupation appears to have focused on the eastern side of Parramatta, with a cluster of sites being found in a band. Holocene occupation (Phase 2) resulted in a proliferation of uses, and several archaeological sites. This time point was warmer and wetter than today, and the quantum of available food resources increased exponentially (compared to the Pleistocene). Locations with archaeological evidence for this phase are abundant and encircle the wetland area.

The final phase of pre-invasion Aboriginal occupation (Phase 2B) saw a withdrawal from Phase 2 sites to the area on the east of Parramatta, notably connected with the lower tidal point of the river. Changes in occupation patterns in this phase were seen across NSW, not just Parramatta, and have been archaeologically associated with many changes in Aboriginal society, economy and demography. Within Parramatta, oral records, assessment of historical resources and consultation with Darug people, suggest the changes may have been associated with social control of the landscape consequent of increased territoriality, which saw local occupants define who and when people could enter Parramatta.

Following invasion, it appears local Aboriginal people attempted to maintain connections with the places they had occupied during the late Holocene. Historical records indicate that in 1801 the British attempted to forcibly remove Aboriginal people from Parramatta;²⁴ this event halted the traditional Burramattagal connection with the place. From 1810–1821 (Governor Macquarie's period) onwards, Aboriginal people in Parramatta identified themselves as belonging to other nearby groups (as well as to groups from outside Sydney, such as Bathurst).

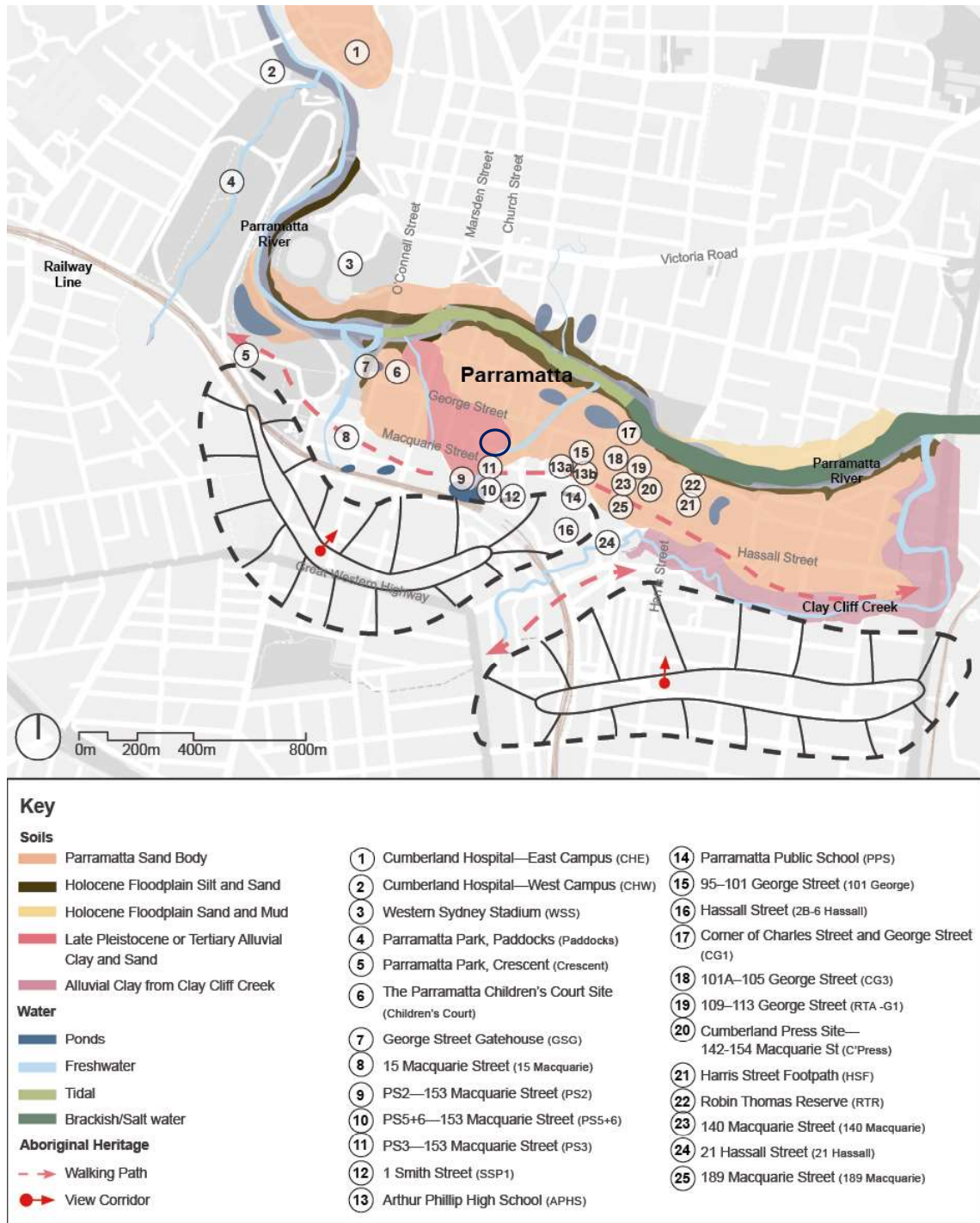


Figure 2.4 Aboriginal places, features and interpretation of the Holocene Aboriginal cultural landscape prior to colonisation. The approximate location of the Sydney Metro, Parramatta site is north of site 11, in the dark blue circle. (Source: Owen and DCKN, submitted, Figure 10)

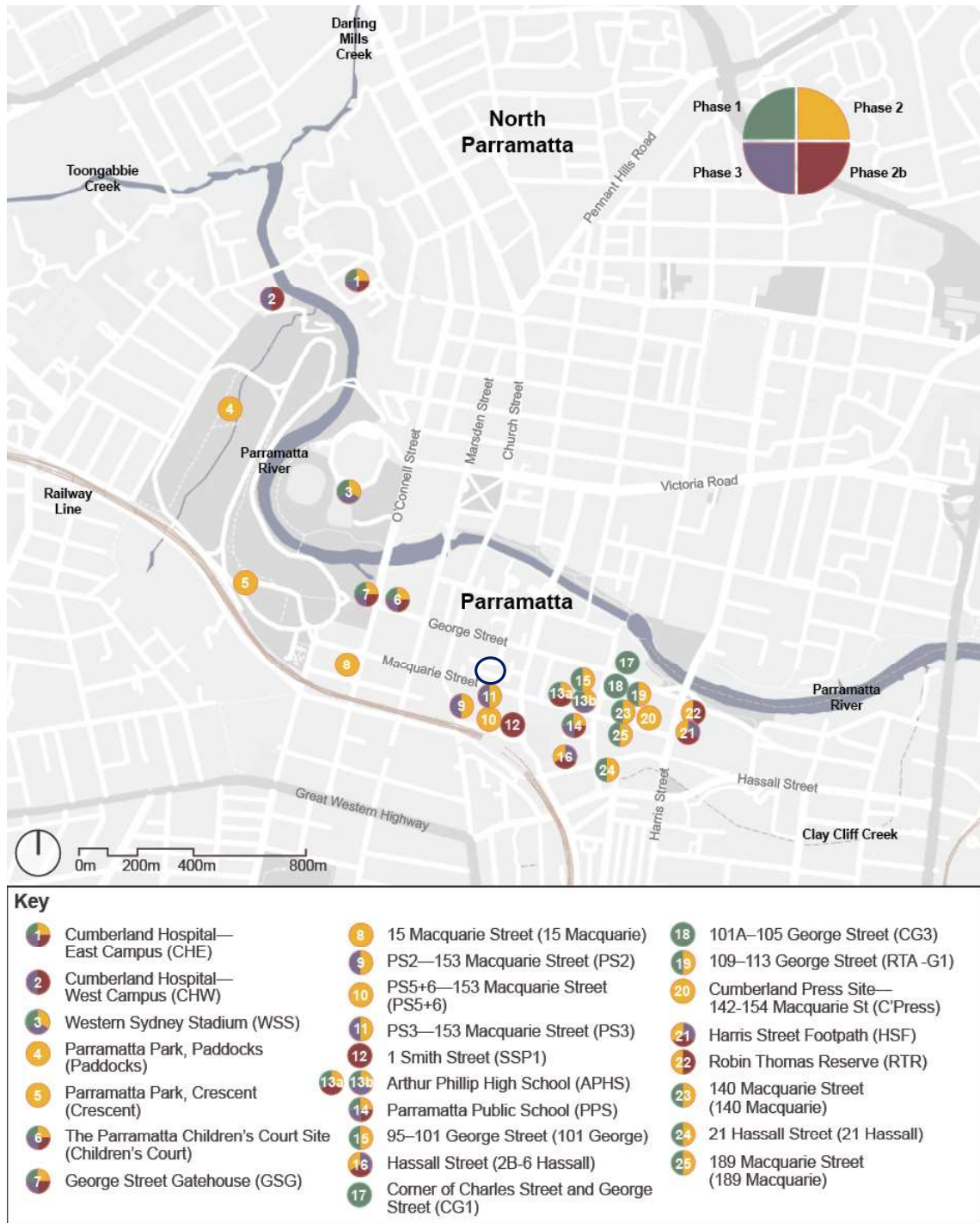


Figure 2.5 Aboriginal archaeological sites and their ERS phases of use. The approximate location of the Sydney Metro, Parramatta site is north of site #11, in the dark blue circle. (Source: Owen and DCKN, submitted, Figure 3)

2.4.3 The Sydney Metro, Parramatta site—Baseline Analysis

The Sydney Metro, Parramatta site is located on the margins of the Holocene alluvium, connected with an area which could have been a large wetland zone during the ERS Phase 2. The extent of the wetland is currently unknown and requires assessment through work on projects such as the Metro. Soils connected with this location do not appear to display the characteristics of the PSB, and are thus not expected to retain the signature of Pleistocene occupation. The reasons for an absence of Pleistocene and early Holocene PSB below the later Holocene alluvium are not apparent and have not been previously explored. Excavations for the Parramatta Light Rail (PLR), APHS and Parramatta Square projects have not previously encountered the interface or overlap between these two soils.

The eastern margins of the Sydney Metro, Parramatta site are associated with a former creek or drainage channel. Excavation in Parramatta Square showed the nature of this feature, and also its connected archaeological signature. The landforms adjacent to this former creek may retain stratified archaeological signatures, deposited after 4,000 BP. Archaeological deposits associated with this location may include glass, ceramic and flint artefacts from Phase 3 (the contact phase). Any Aboriginal archaeology would be located below modern fill and historical topsoil, in a layer which would be only 300mm deep. Where the alluvium interfaces with the watercourse, the layers of alluvial fill may be deeper, up to 1m deep.

The northern part of the Sydney Metro, Parramatta site is located on a mapped expression of the alluvium, but could be positioned near the interface with the PSB. This boundary could retain PSB below alluvium—if present this PSB could retain Pleistocene archaeological deposits, although this would be the westernmost expression of such occupation on the east of the wetland area. Irrespective of whether PSB were present, this portion of the site could be expected to retain deeper alluvium (deeper than APHS or Parramatta Square), possibly with an Aboriginal archaeological signature. Aboriginal archaeology would be located below modern fill and historical topsoil, in a layer which would be only 300mm deep.

The central and western portion of the Sydney Metro, Parramatta site is located within the centre of the alluvial soil landscape, and could be positioned in the middle of the wetland area. Archaeological signatures inside this zone are yet to be identified. If this specific zone was used by Aboriginal people for an activity which resulted in an archaeological signature, the deposits could be unique in Parramatta, as specific strategies for accessing the wetlands may have been employed. For instance, outside Sydney (in South Australia, Victoria, and along the Murray–Darling system) Aboriginal people commenced constructing ‘mound’ sites in similar wetland areas during Phase 2b.²⁵ These features comprise layers of black organic material, derived from cultural activities, which were constructed to allow access inside wetland areas. Such a feature could be found inside the wetland area (although this would be unexpected, and has not been previously identified in Parramatta). Mound sites may be up to 1m deep and can be buried below +1m of alluvium (often the case in the Holocene alluvium, which covers Adelaide).

In addition, inside the wetland zone, it is possible that smaller ‘islands’ of raised alluvium formed, and contain limited evidence for one-off activities connected with preparing for resource gathering, or food processing, in connection with using the wetland zone. If present, Aboriginal archaeological deposits could be below fill, historical archaeology deposits, and in alluvial layers up to 1m deep.

Interpretation of these descriptions suggest that locations on the east of the Sydney Metro, Parramatta site may be more 'sensitive' for Aboriginal archaeological deposits. An approximate 'sensitivity' line has been drawn on the zoning plan for the site (Figure 3.3). At the current time, this sensitivity line is a hypothesis, and used to underpin future research directions for the site.

Of course, the presence of any Aboriginal archaeology deposit depends on the formation process, the changes over both the Pleistocene and Holocene, and the treatment of the location since 1788. The last 200+ years have resulted in considerable alterations to soil horizons, frequently removing and altering the natural landscape. However, as is evident from the breadth of Aboriginal archaeological material scientifically excavated to date, the process of historical development is often very shallow, and substantial intact Aboriginal archaeological deposits remain.

We now turn to an analysis of the site to understand some of the potential impacts and alterations to this site over the last 230+ years.

2.5 Endnotes

- ¹ Lawrie, R, 2019. Soil properties at archaeological site, Parramatta Square PS2, 160-180 Church Street, Parramatta. Report prepared for Comber Consultants. Page 1 and Figure 1.
- ² Several published papers provide dates for the earliest evidence of First Nations connections to Sydney. The earliest data for Parramatta is provided in Owen, T, Player, S, and Toms, P In Press, 'Sands with Time: The Antiquity of Aboriginal Archaeological Deposits and the Formation of the Parramatta Sand Body', *Archaeology in Oceania*.
- ³ Attenbrow, V 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of New South Wales Press, Kensington, NSW, p 24.
Flynn, M, Parramatta & the Aboriginal People of the Sydney Region, Part One 1788-1810, report prepared for Parramatta City Council, May 1995, p 7.
Kohen, J 1993, *The Darug and their Neighbours—The traditional Aboriginal owners of the Sydney Region*, Darug Link in association with the Blacktown and District Historical Society, Blacktown, p 21.
- ⁴ Artefact 2020. Sydney Metro West, Stage 1. Technical Paper 4: Aboriginal Cultural Heritage Assessment Report Parramatta, Cumberland, Canada Bay, Burwood, and Inner West Local Government Areas. Report to Sydney Metro.
- ⁵ RPS 2021. Sydney Metro West: Utilities Investigation – Parramatta Draft Aboriginal Heritage Due Diligence. Report for Sydney Metro.
- ⁶ Mitchell, P B, Nature and Distribution of Parramatta Terrace Sand, report prepared for Parramatta City Council, May 2008.
- ⁷ Owen, T, Player, S, and Toms, P In Press, 'Sands with Time: The Antiquity of Aboriginal Archaeological Deposits and the Formation of the Parramatta Sand Body', *Archaeology in Oceania*.
- ⁸ Comber Consultants, Parramatta Square 2 (PS2), 160-182 Church St Parramatta. Aboriginal Archaeological Excavation Report, report prepared for Walker PS2 Developments Pty Ltd, 2019.
Comber Consultants, Parramatta Square 3 (PS3): 153 Macquarie St Parramatta: Excavation Report, AHIP No. C0001379., report prepared for City of Parramatta Council, 2018.
Comber Consultants, Parramatta Square 5 & 6 (Ps5&6): 12-38 Darcy St Parramatta. Excavation Report, Ahip No. C0001379, report prepared for Parramatta Square Property No. 1 Pty Ltd, 2019.
- ⁹ Lawrie, R, 2019. Soil properties at archaeological site, Parramatta Square PS2, 160-180 Church Street, Parramatta. Report prepared for Comber Consultants.
Lawrie, R, 2018. Soil properties at the Parramatta Square archaeological site, PS 5 & 6, 153 Macquarie Street, Parramatta. Report prepared for Comber Consultants.

- ¹⁰ Player, S. 2018. Assessment of the Parramatta Square 5&6 Archaeological Site, Macquarie Street, Parramatta, NSW. Report prepared for Comber Consultants.
- ¹¹ Owen, T and Darug Custodial Knowledge Holders, Submitted. 'The Deeptime Aboriginal Cultural Landscape of Parramatta'. To be submitted to AACAI Journal for review in August 2021.
- ¹² GML Heritage 2021. Arthur Phillip High School and Parramatta Public School Aboriginal Archaeology Post Excavation Report. Prepared for SINSW and DET.
- ¹³ GML Heritage In preparation. Parramatta Light Rail, Aboriginal Archaeological Post Excavation Report. Prepared for Parramatta Connect and TfNSW.
- ¹⁴ JMcDCHM, Archaeological Salvage Excavation of Site CG1 at the Corner of Charles and George Streets, Parramatta, NSW, report prepared for Meriton Apartments Pty Ltd, January 2005.
JMcDCHM, Archaeological Salvage Excavation of Site RTA-G1, 109–113 George Street, Parramatta, NSW, report prepared for Landcom, October 2005.
- ¹⁵ Barry, L et al. 2021, 'Tracking an exotic raw material: Aboriginal movement through the Blue Mountains, Sydney, NSW during the Terminal Pleistocene', *Australian Archaeology*, vol 87.
- ¹⁶ White, E 2018, 'Time matters on shallow open sites: An example from Western Sydney, Australia', Doctor of Philosophy, University of Sydney, Sydney.
- ¹⁷ Based on Attenbrow 2006:205 (all metrics); Reeves et al 2013 (temperature, precipitation); Lewis et al 2013; Sloss et al 2007:1010-1012; and Williams et al 2018 (sea-level). References in Owen and
- ¹⁸ Owen, T, Player, S, and Toms, P In Press, 'Sands with Time: The Antiquity of Aboriginal Archaeological Deposits and the Formation of the Parramatta Sand Body', *Archaeology in Oceania*.
Mitchell, P B, Nature and Distribution of Parramatta Terrace Sand, report prepared for Parramatta City Council, May 2008.
GML Heritage In preparation. Parramatta Light Rail, Aboriginal Archaeological Post Excavation Report. Prepared for Parramatta Connect and TfNSW.
- ¹⁹ GML Heritage In preparation. Parramatta Light Rail, Aboriginal Archaeological Post Excavation Report. Prepared for Parramatta Connect and TfNSW. Site AT14 in the Cumberland Hospital.
- ²⁰ Mitchell, P B, Nature and Distribution of Parramatta Terrace Sand, report prepared for Parramatta City Council, May 2008, pp 11-12.
- ²¹ Lawrie, R, 2019. Soil properties at archaeological site, Parramatta Square PS2, 160-180 Church Street, Parramatta. Report prepared for Comber Consultants, pp 2-5.
- ²² Bannerman, S M and Hazelton, P A 1990, *Soil Landscapes of the Penrith 1:100 000 Sheet*, Soil Conservation Service of NSW.
- ²³ Hiscock, P. and Attenbrow, V. 2005 *Australia's Eastern Regional Sequence Revisited: Technology and Change at Capertee 3*. BAR International Series 1397. Oxford: Archaeopress.
White, B 2017, 'Analysis with Confidence: Distinguishing Pre-Bondaian and Bondaian IMSTC Artefact Assemblages from the Cumberland Plain of Western Sydney, New South Wales', *Australian Archaeology*, vol 83, no 3.
White, B 2018, 'Time matters on shallow open sites: An example from Western Sydney, Australia', Doctor of Philosophy, University of Sydney, Sydney.
- ²⁴ HRNSW 1801. Philip Gidley King, Government and General Order, 1 May 1801, HRNSW Vol. V: 362.
- ²⁵ For example in South Australia: Westell, C and Wood, V 2014, 'An Introduction to Earthen Mound Sites in South Australia', *Journal of the Anthropological Society of South Australia*, vol 38.

Site Analysis

3 Site Analysis

3.1 Introduction

The review of the Aboriginal heritage deep time background (Section 2) has argued that the Sydney Metro, Parramatta site is located on the margins of an alluvial wetland zone, where archaeology is most likely to be associated with a relatively shallow layer of silty-clay alluvium, particularly in the eastern and northern parts of the site. The central part of the wetland could retain deeper alluvial layers with associated archaeological deposits, although the nature of such deposits is more difficult to predict. Any Aboriginal archaeology present is likely to be associated with signatures from ERS phases 2, 2B and 3. Older Pleistocene archaeology would be associated with remnant pockets of PSB, which are most likely to occur in the southeast of the site.

Our analysis now examines the known history of impacts to the site, attempting to understand where major development and change has removed the horizons with sensitivity for Aboriginal archaeological deposits. This analysis is based on historical records and geotechnical data, although we note that both are imprecise and do not provide the clarity that focused sedimentary and archaeological investigations provides. As such, the concluding statements in this section have assumed an absence of data equates to a location which is archaeologically sensitive.

3.2 Geotechnical Data

Geotechnical data is derived from bore holes and test pits excavated during geotechnical testing. The record of bore logs from this testing can provide some insight into the subsurface conditions, which may be relevant to our analysis. Details on the depth of fill, bedrock, layers of clays, silts and sands need to be reinterpreted from an archaeological perspective. A greater level of detail is required for archaeological analysis than is normally recorded on bore logs; descriptions of horizons that can hold either historical archaeology or Aboriginal archaeology are often described as 'fill', or lumped into miscellaneous 'clays'. Unless recorded by an archaeologist at the point of sampling, the logs provide little information about the nature of A₁ and A₂ soil horizons, or how they interface with the B horizon clay. However, when we contrast the logs against archaeological records from nearby excavations (in this instance the PLR, APHS and Parramatta Square), we can extrapolate from the various descriptions of the 'clay', and in this instance 'alluvial' layers, what type of soil landscapes may be present. This is important because it establishes the basis for archaeological sampling. Further records of surface RL (Australian Height Datum [AHD] in metres), coupled with the general depth of fill, allows us to interpret whether all archaeologically sensitive horizons may have been removed. In general Parramatta has a depth of fill between 0.5m and 1.0m above those archaeologically sensitive layers.

Analysis for the Sydney Metro, Parramatta site has included seven geotechnical logs associated with the project, of which four are located inside the Metro site. In addition, we have drawn on 10 bore logs taken for the PLR which are adjacent to the Metro site. We have further contrasted the data with archaeological samples (test trenches) excavated on Church Street and Macquarie Street in 2020 (by GML and the Deerubbin Local Aboriginal Land Council), and Parramatta Square (by Comber 2019, 2020). Figure 3.1 shows the locations of the bore logs and depth of fill associated with each location. Overview of the analysis is provided in Table 3.1.

Analysis commenced by assessing the logs at a distance from the site, where soil landscapes were known (BH703 and BH04, on PSB; and BH49 and BH2027, at the interface between the PSB and alluvium). These provided standards against which other bore logs could be assessed. Analysis of logs closer to and within the site aimed to contrast the descriptions to provide a holistic picture of the soil landscapes. We have presented our understanding of soil landscapes as derived from these logs in Figure 3.2.

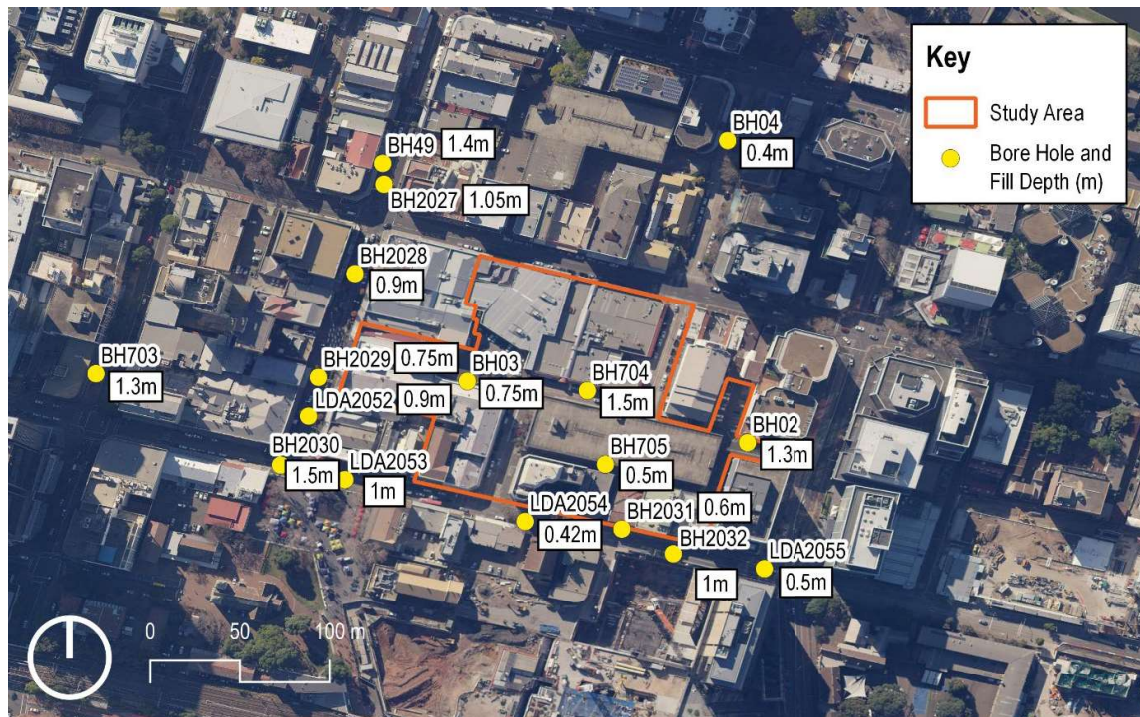


Figure 3.1 Bore log data locations, assessed to infer soil landscape. This figure shows the location, log number and depth of fill recorded for each log. (Source: GML 2021, PLR data held by GML, and Sydney Metro bore data, over Nearmap base map)

Table 3.1 Summary of geotechnical data from bore holes from inside and adjacent to the Sydney Metro, Parramatta site. (Source: Bore logs for the Sydney Metro, Parramatta site and from the PLR project)

Bore hole	Surface elevation AHD (m)	Fill depth (m)	Description of the primary soil horizon below the fill layer and depth (m) Other notable soil horizons and depth (m) Bedrock and its reduced level (AHD) (m)	Interpretation
SMW_BH002 Inside the Metro site	8.99	1.3	Silty clay, alluvium, medium to high plasticity, red-brown to grey, 9m deep. Bedrock is siltstone over sandstone, at -1.4m.	Located near the mapped course of a creek (later channelised). Water drainage may have removed any PSB, replacing it with alluvium. Uncertain whether any remnant A ₁ /A ₂ could survive.

Bore hole	Surface elevation AHD (m)	Fill depth (m)	Description of the primary soil horizon below the fill layer and depth (m) Other notable soil horizons and depth (m) Bedrock and its reduced level (AHD) (m)	Interpretation
SMW_BH003 Inside the Metro site	10.67	0.75	Clay, alluvium, medium to high plasticity, pale brown to brown, with silt, 2.25m deep. Over clayey sand, red-brown and pale grey, 3m deep; over various sands, 8.3m deep. Bedrock is siltstone over sandstone, at - 3.6m.	Alluvium, over older expressions of sand, which would likely be associated with the formation of the lower alluvium (+1 million years). Fill depth may not have impacted archaeological horizons.
SMW_BH004	8.68	0.4	Clay, alluvium, low to medium plasticity, grey and brown, 4.9m deep. Over grey sand, 6, deep. Bedrock is sandstone and siltstone, at - 2.6m.	Describes the PSB, although no distinction is drawn between the upper and lower layers. Over an old sand layer, which could be similar to that from BH03.
SMW_BH049	8.99	1.4	Silty clay, alluvium, high plasticity, fine to medium grained sand, 6.7m deep. Over a sandy clay 'residual' soil, 2.8m deep. Bedrock is siltstone over sandstone, at - 2.95m.	Located at the junction between the PSB and alluvium. Appears to possibly have a mix of the two soil landscapes. Same structure as Trench 10 Church Street, PLR excavations.
SMW_BH703	8.85	1.3	Clayey sand, alluvium, brown and yellow brown, fine grained sand, trace sand, 0.7m deep. Over a silty clay, with gravel, 2m deep; over a pale grey sand 6.5m deep. Bedrock is siltstone over sandstone, at - 2.05m.	Describes a shallow layer of PSB. Over an old sand layer, which could be similar to that from BH03.
SMW_BH704 Inside the Metro site	10.31	1.5	Clay, alluvium, low to medium plasticity, brown and grey, 12.4m deep. Bedrock is siltstone over sandstone, at - 3.59m.	The lower layer of alluvium as described at Parramatta Square. No indication of whether the A ₁ or A ₂ horizons remain, although at this specific location the depth of fill is deep and may have impacted these horizons.
SMW_BH705 Inside the Metro site	10.14	0.5	Clay, alluvium, medium to high plasticity, pale grey mottled red-brown, 12.5m deep. Over a thin layer of sand 0.5m deep. Bedrock is siltstone over sandstone, at - 3.36m.	Same as BH704, although the depth of fill is typical for Parramatta CBD and may not have impacted A ₁ /A ₂ horizons.

Bore hole	Surface elevation AHD (m)	Fill depth (m)	Description of the primary soil horizon below the fill layer and depth (m) Other notable soil horizons and depth (m) Bedrock and its reduced level (AHD) (m)	Interpretation
CPBD-BH-2027	9.58	1.05	Sandy clay, alluvium, grey, medium to high plasticity, 1.05m deep. Over a clayey sand, 1.2m deep.	Alluvium over deeper ancient sand pockets.
CPBD-BH-2028	10.28	0.9	Silty clay, alluvium, red-brown, medium to high plasticity, 1.65m deep. Over sand and sandy clay, 3.45m deep.	Alluvium over deeper ancient sand pockets, bedded within clay.
CPBD-BH-2029	10.26	0.75	Clay, alluvium, medium to high plasticity, brown, 3.85m deep. Over clayey sand, and sandy clay layers, 1m deep.	Alluvium over deeper ancient sand pockets, bedded within clay.
CPBD-LDA-2052	10.49	0.9	Clay, residual soil, medium to high plasticity, brown, 2.55m deep.	Alluvium over deeper ancient sand pockets, bedded within clay.
CPBD-BH-2030	10.43	1.5	Clay, alluvium, high plasticity, brown and grey, 6.5m deep.	Alluvium over deeper ancient alluvial clays.
CPBD-LDA-2053	10.57	1	Clay, alluvium, high plasticity, brown and grey, 1.95m deep.	Alluvium over deeper ancient alluvial clays.
CPBD-LDA-2054	10.06	0.42	Clay, alluvium, high plasticity, brown and grey, 2.53m deep.	Alluvium over deeper ancient alluvial clays.
CPBD-BH-2031	—	0.6	Clay, alluvium (Holocene), high plasticity, dark grey, 12.9m deep.	Alluvium over deeper ancient alluvial clays.
CPBD-BH-2032	11.7	1	Clay, alluvium, high plasticity, dark grey, 1.7m deep.	Appears to be the Blacktown residual soil landscape.
CPBD-LDA-2055	—	0.5	Sandy silt, alluvium, low plasticity, brown-grey, 0.3m deep. Over clay alluvium, 2.65m deep.	Alluvium over deeper ancient alluvial clays.

This part of Parramatta has a bedrock comprising interbedded sandstone and siltstone (shale). The depth of bedrock varied between -1.4m (AHD) and -3.6m (AHD), with an average of -2.8 (AHD). In some places the bedrock appears to have decayed and formed the lowest residual soil horizons or either clays or sands.

Modern ground surface contours indicate a gently undulating land surface, slightly sloping up towards the southeast. Fill depth varies, with no consistent patterning between 0.4 and 1.5m, and an average depth of roughly 1m. Locations with around 1m of fill may not have impacted the pre-1788 land

surfaces. Deep fills may reflect cut activities that have removed layers which are archaeologically sensitive.

The geotechnical data indicates that most of the study area should be associated with the Holocene alluvial soil landscape. The mapped extent of soil landscapes indicated that PSB was located on the eastern side; however, the geotechnical information for this area suggests otherwise and that alluvium is present. The extent of alluvium appears to extend beyond the mapped boundary, which was expected as Parramatta Square excavations yielded alluvium beyond the mapped boundary. The Blacktown soil landscape is mapped to the south of the Metro site, and only one bore log suggested its presence. Blacktown soils may be present in the southeast corner of the Metro site.

The flow of water in association with the creek channel in the southeast part of the Metro site may have altered soils in this area, eroding PSB and replacing it with fluvially moved soils from farther upslope. This area could therefore hold different expressions of alluvium to that across the remainder of the site, as is present inside Parramatta Park, Gardens Precinct.

In conclusion, the geotechnical data suggests an absence of PSB inside the Sydney Metro, Parramatta site. The site appears to be predominantly associated with Holocene alluvium, and possibly a separate alluvial soil in the southeast corner. It should be expected that a depth of fill 0.5m deep is present across the Metro site. Below this introduced layer may be intact historical surfaces and remnant A₁/A₂ horizons.

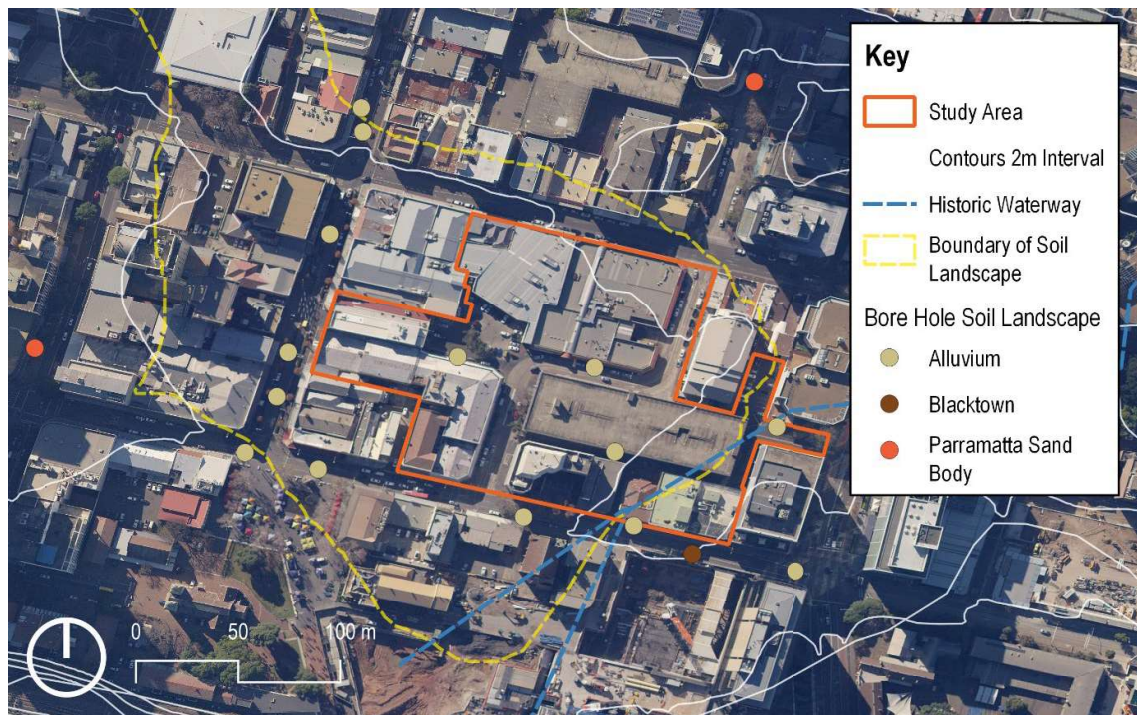


Figure 3.2 Interpretation of soil landscapes from the bore log data. This figure shows the contour lines, water course, and the boundary between the 'Holocene alluvium clay and sand' PSB/Blacktown soil landscapes. (Source: GML 2021 and Mitchell 2008, over Nearmap base map)

3.3 Historical Period Analysis (1788 to 2021)

The Sydney Metro, Parramatta site has been subject to a detailed historical archaeological assessment, which has examined the last 230 years of alterations to the site. This analysis has been summarised and interpreted in the context of Aboriginal heritage, through multiple maps, plans and historical aerial photographs. A summary of this review is provided in Table 3.2, and the relevant maps, plans and photographs are presented in Appendix A.

Table 3.2 Summary review of historical plans and aerial photographs, with reference to features and items which could have altered the pre-1788 soil landscapes.

Map/aerial photograph	Description	Interpretation for Aboriginal heritage
1796 plan Figure A1	The plan shows the earliest layout of Parramatta, with George Street to the north of the Metro site, and 'Ground under cultivation' to the south.	During the early years of Parramatta, Aboriginal people remained in and around the settlement. Locations connected with 'ground under cultivation' have retained Phase 3 (post-1788) Aboriginal objects made from glass, ceramic and flint (eg at Parramatta Square, APHS and PPS, and Robin Thomas Reserve [RTR]). This type of archaeology can therefore be expected, particularly in lower historical topsoils, or the upper parts of A ₂ soils (if these remain).
1804 plan	Subdivision into multiple lots, with convict huts located fronting George Street and Church Street. Each lot was associated with a yard, which could have a historical 'surface' resulting from working in that yard.	The convict huts were small, but cut into the A ₁ and A ₂ horizons. Excavation of many other huts in Parramatta has shown an association between historical (non-Aboriginal) artefacts and Aboriginal lithics. The formation of yards often capped the former A ₁ soil horizon, and this preserved intact soils below historical archaeology deposits. This was seen in APHS Q1, in a yard surface with alluvial soils below.
1812 plan	Shows the formalisation of lots, huts and yards. Hospital Lane runs east–west through the centre of the Metro site (see comment below).	Hospital Lane has an alignment of the east–west portion of Horwood Place today. This early road alignment may retain all soil horizons below modern fill and any historical road surfaces.
1823 plan	The width of lots on George and Macquarie Streets has increased, having the effect that huts are no longer located on the street. Hospital Lane is not shown on this plan.	Little change from the prior periods, noting some additional smaller buildings have been constructed.
1844 plan	Most lots have additional buildings, which either expanded or replaced the former huts—the sites and locations have been re-used.	The footprints of the buildings are relatively small compared to the size of lots. It is not expected these buildings cut substantial amounts of soil during their construction, with likely impacts being connected with foundation trenches for external walls, and interior supporting walls only.
1858 plan	Shows land to the south of Macquarie Street only. However, the map provides evidence for the channelised creek, which flows into the	Indicates that water management in the southeast part of the site was a problem, which required management.

Map/aerial photograph	Description	Interpretation for Aboriginal heritage
	southeast of the Metro site. In addition, a number of ponds/water pools are shown adjacent to the channel.	
1895 plan	<p>The extent of construction on all four bounding streets has increased, with continuous building frontage on Church Street, and most of George and Macquarie Street having non-abutting buildings along their length. Most buildings retain yards. The central portion of the Metro site remains relatively free of construction, with a few new structures.</p> <p>The route of modern-day Horwood Place can be seen without construction.</p> <p>The plan shows the sewer line construction through the Metro site.</p>	<p>Construction of new buildings at the end of the nineteenth century would have involved demolition of earlier items, most likely knocking the building material into the lot. This would have built up the ground surface, and covered earlier layers rather than removing these buildings.</p> <p>New buildings could have basements which cut into the ground, but many would have had slabs and simple brick walls.</p> <p>Yards behind buildings would have limited works undertaken that altered the ground surface.</p> <p>Of note is the sewer line plan. All locations with sewers would have required excavation of a 'deep' trench, around 1m wide. Within this footprint any Aboriginal archaeology would be removed.</p>
1928 aerial	Shows several larger warehouse type buildings and many smaller structures, along with yards, and the open route of Horwood Place.	The aerial is not very clear, which makes determining impacts from prior periods difficult. There does not appear to be a substantial degree of change in built form from the 1895 plan.
1943 aerial	The aerial provides a clear indication of larger warehouse type buildings, and many smaller houses. Around 50% of the Metro site is located on land outside a building (in gardens, yards, or 'streets').	<p>When juxtaposed against the 1895 plan, the 1943 aerial does not show substantial changes. A few smaller buildings have been replaced, but the general pattern of development remains.</p> <p>The central portion of the Metro site, away from the outer bounding streets, has a lot of open space, and does not appear to be cut.</p>
1951 aerial	The aerial shows the same pattern of development as the 1943 aerial. Car parking has commenced in the northern area which becomes Horwood Place.	Little change has occurred. The commencement of car parking is likely to have necessitated bringing in stabilising fills, which would have been used to cap the prior surface. Other similar locations have retained +1m of fill above the original ground surface.
1981 aerial	Substantial change has occurred with the formalisation of Horwood Place, the construction of the single-storey shopping centre on Lots 15 and 16, the car park across the rear of Lots 74 to 77, larger warehouse type structures on Lots 80 and 81, and a car park on Lot 14.	<p>Most of these changes would have required the demolition and removal of all former structures. Large buildings are likely to have deeper foundations, which could have cut into original soil profiles. The large car park appears to have been constructed on-grade, but the depth of foundations is unknown.</p> <p>It is possible that these items did not require significant cut prior to construction. However, the extent of excavation is really unknown,</p>

Map/aerial photograph	Description	Interpretation for Aboriginal heritage
		and excavations 0.5m below current surface levels may have removed any Aboriginal archaeological signatures.
2021 aerial	The only major change is the construction of larger buildings across the front of Lot 14.	Construction of this building is likely to have cut the ground surface, removing Aboriginal archaeological signatures.

3.4 Archaeological Zoning Plan

The baseline analysis for the Sydney Metro, Parramatta site (Section 2.4.3) identified locations connected with different soil landscapes, and described how these may correlate to different modes of Aboriginal interaction and use, notably over the Holocene. A ‘sensitivity line’ has been proposed (Figure 3.3). The sensitivity line indicates locations to the east that may yield more extensive archaeological evidence of Aboriginal habitation (NB this hypothesis is to be tested through archaeological investigations). Land to the east of the line is likely to hold shallower deposits of alluvium (up to 300mm deep), and be infrequently inundated by water. Land to the west of the line may be located within deeper expressions of alluvium (over 300mm) and may be associated with an alluvial wetland zone, where semi-permanent surface water was present. Locations regularly inundated are less likely to retain an Aboriginal archaeological signature because these areas would have been underwater, and thus not suitable for activities that culminated in formation of archaeological deposits. Conversely, such a zone could retain a detailed paleo-soil and pollen record, which could provide detailed insight into ecological regimes over the period of its formation.

Analysis of historical impacts (Section 3.3) indicates around half of the Sydney Metro, Parramatta site may have been subjected to historical disturbance that could have removed Aboriginal archaeological deposits; the other half may have remnant intact soil horizons (this is referred to as the condition of the soils). The ‘treatment’ of remnant soils (referred to as the integrity of the soils) must also be considered. For instance, locations which have been turned over, but retained their soils, would hold low integrity because any archaeology will have been substantially displaced from its original context.

The analysis of soils and historical period changes provides the basis for determining Aboriginal archaeological potential. Five zones are described. Each has a different level of archaeological potential, and potential for different ‘types’ of archaeology, which may be related to both the cultural landscape position and anticipated soil landscape (Table 3.3 and Figure 3.3). For zones 1, 3 to 5, all locations north and east of the sensitivity line may yield more extensive archaeological deposits.

Table 3.3 Sydney Metro, Parramatta site, Aboriginal archaeology zoning plan.

Zone	Historical changes and soil integrity/condition	Possible Aboriginal archaeology
1	Zones 1 has the fewest post-1788 impacts and changes; soils could retain good condition. The area is principally connected with yards, and ‘movement’ through the site. Some activities could have turned soil horizons over, but	Bore logs suggest 0.5m of fill is present, which could cap Holocene alluvium A ₁ and A ₂ horizons. If intact, the depth of A ₂ with Aboriginal archaeology could be between 300mm and 500mm deep. This should interface

Zone	Historical changes and soil integrity/ condition	Possible Aboriginal archaeology
	deposits would be expected to have moderate to good integrity.	with a higher plasticity B horizon clay, which has no archaeological potential.
2	As for zone 1.	<p>This zone is associated with the mapped extent of PSB, and also the water channel. Fluvial actions could have eroded PSB and deposited a further type of alluvium in this zone.</p> <p>Archaeology could be associated with A₁ and A₂ horizons of the alluvium, to a depth of 0.5m (?), below which PSB could be present, with further archaeological deposits to a depth of 1.5m below the current surface level (assuming 0.5m of fill).</p>
3	Zone 3 has been subject to similar impacts to zones 1 and 2, until the construction of the car park. This action may have cut soil horizons, and no remnant soils with archaeological potential may remain in this zone. The condition and integrity of soils requires clarification through further sedimentary analysis.	If remnant soils are present, zone 3 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.
4	Zone 4 is associated with construction of houses and warehouses. These features will have cut wall foundations into the underlying basal clay, removing soils with the potential for archaeological deposits. Locations inside rooms can retain a full soil profile (as occurred in APHS Q1). More recent buildings are likely to have basements or lower floor levels which have cut remnant soils. The condition and integrity of soils below each building could vary between none and good, depending on how each building was constructed.	Where remnant soils are present, zone 4 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.
5	Zone 5 is associated with a historical archaeological excavation completed in 1996 prior to construction of the existing building. The results of this excavation were not available at the time of preparing this report and the survival of remnant soils with archaeological potential is not known.	Where remnant soils are present, zone 5 could present archaeological deposits according to the soil landscape. The description for zone 1 would be applicable. The survival of remnant soils can be clarified following removal of the building.

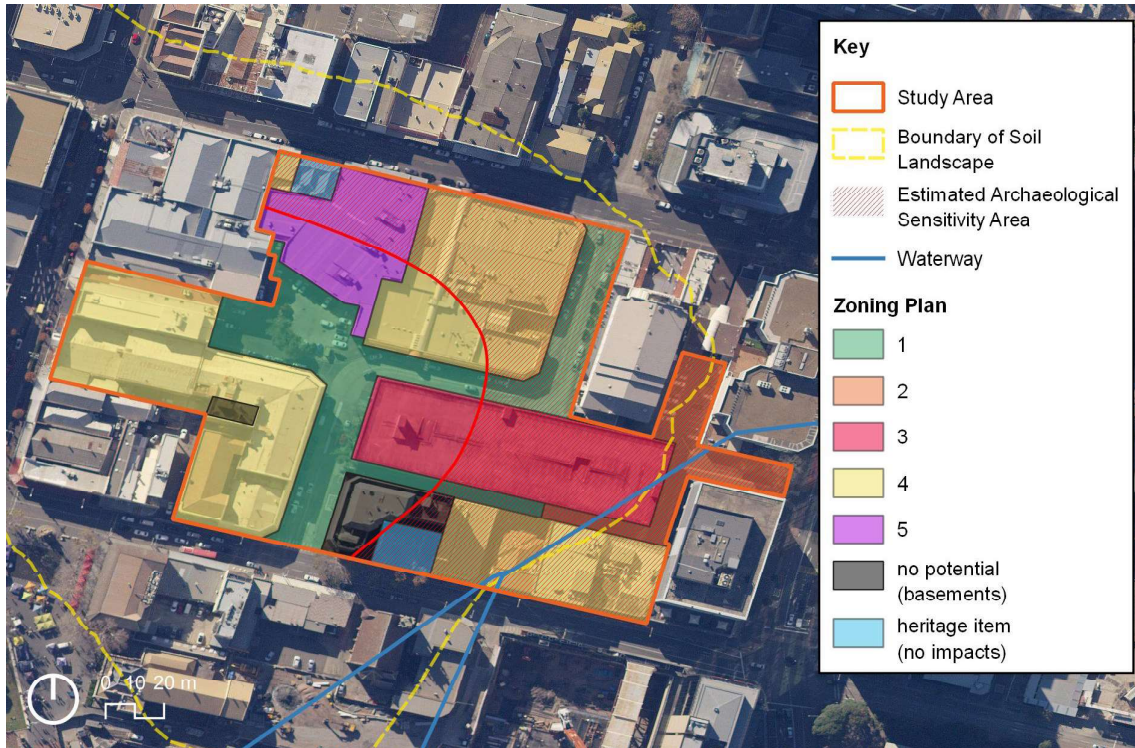


Figure 3.3 Aboriginal archaeology zoning plan for the Sydney Metro, Parramatta site, with hypothetical 'sensitivity line'. (Source: GML 2021, over Nearmap base map)

Impact Assessment and Mitigation Strategy

4 Impact Assessment and Mitigation Strategy

4.1 Project Impacts

The project's EIS ACHAR provides the following description of the project (Artefact 2019, Section 4.2.2 Parramatta Metro Station Construction Site):

The Parramatta [sic] metro station would be constructed as a cut-and-cover excavation station, located across Horwood Place in Parramatta. The site currently contains medium density commercial structures, public roads (Horwood Place and Macquarie Place), rear access carparking for commercial properties and a public multistorey carpark (City Centre carpark).

The Parramatta metro station construction site is illustrated in Figure 3. All existing structures, except two heritage listed buildings, would be removed from the site in order to clear the area for future excavation and construction. The two heritage listed buildings to be retained are the two-storey sandstone building at 41 – 59 George Street and 'Kia Ora' at 62 – 64 Macquarie Street.

The final excavation depth of this station would be around 25 metres in depth.

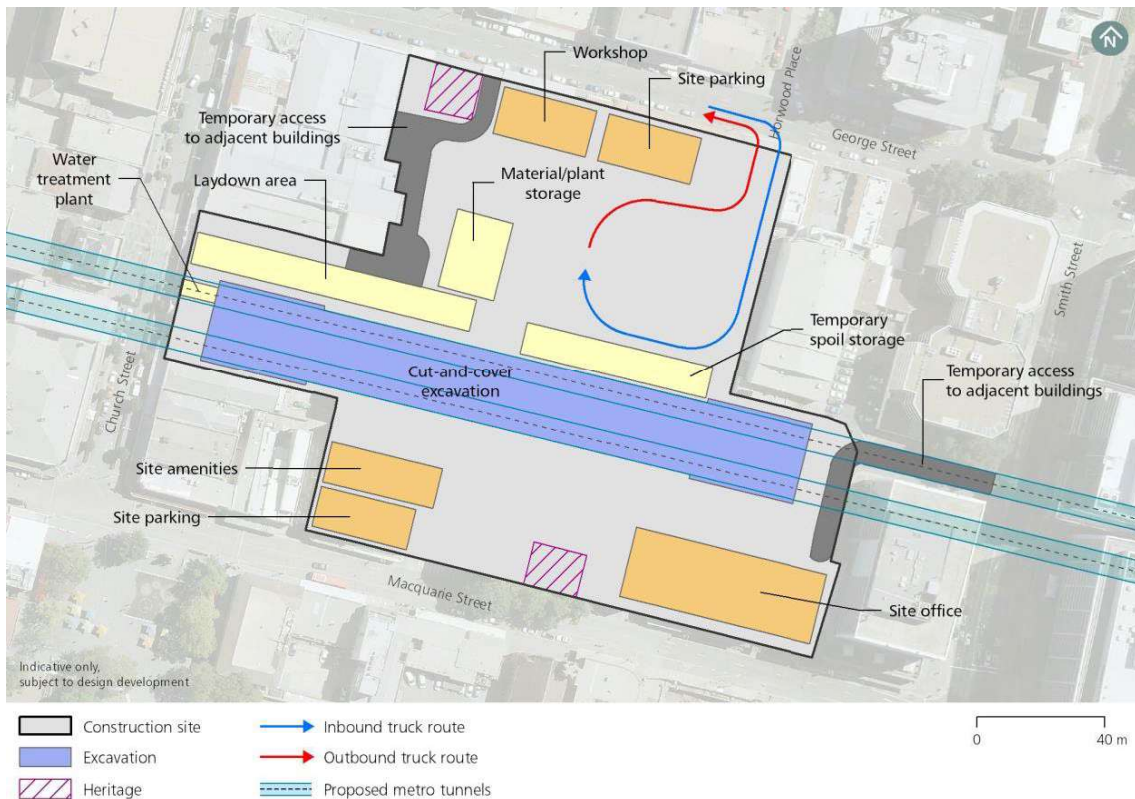


Figure 4.1 Parramatta Metro Station construction site. (Source: Artefact 2019, Figure 3)

In summary, except for two locations associated with heritage buildings, all extant buildings and soil horizons below those buildings (capable of retaining an Aboriginal archaeological signature) are proposed to be removed from inside the Sydney Metro, Parramatta site. Given the constrained nature of the site, there are no locations with an opportunity for proposed conservation except underneath the retained buildings.

The project's EIS ACHAR identified these impacts and they have been approved under SSI 10038. The EIS discussed these impacts with reference to Aboriginal heritage in Parramatta, and reference should be made to that document for further information on cumulative impacts. The EIS ACHAR did not, however, assess the impact to the specific Holocene soil landscape within the context of Parramatta—further comment is provided here.

The majority of the Sydney Metro, Parramatta site is situated across a Holocene alluvial soil landscape. The soil landscape has a total mapped area of approximately 83,000m². The Sydney Metro, Parramatta site has an area of approximately 24,000m² within this soil landscape. The project will therefore impact between 25–30% of this total soil landscape. (We acknowledge these figures make no allowance for prior impacts, but have been calculated to express the extent of possible loss for this soil landscape.) Given the dearth of sedimentary and archaeological knowledge associated with this specific soil landscape, the mitigation methods for these two disciplines should be in line with best practice, with every effort made to investigate the cultural and scientific importance of this location.

4.2 Specified Works

Two phases of work will be undertaken: enabling works and construction work. Details of these are provided below:

- enabling works, estimated to occur between October 2021 to May 2022, which includes:
 - geotechnical investigations, assumed to be standard bores with a diameter between 100–300mm diameter
 - potholing to identify services, assumed to respond to extant services
 - services and substation decommissioning, assumed to be localised ground disturbance around existing services and substations
 - construction of a new switching station, which would involve excavation of a 40m trench within the current road through the centre of the site
 - demolition of existing buildings to their slabs or the current ground surface.
- construction work, estimated to occur from May 2022 onwards, which includes:
 - removal of building slabs, any remediation work, and make good works—this work would remove layers above any archaeology (historical and Aboriginal), and the phasing and timing may be altered to allow for archaeological work in key areas
 - piling—no further details provided
 - temporary road building—no further details provided
 - station box bulk excavation—deep excavation for the station box
 - other works across the site to prepare for Over Station Development (OSD)—no further details provided.

4.3 Impact Mitigation Strategy

The project will result in harm to Aboriginal objects, if present. Harm is approved under condition D19. Condition D22 requires an Aboriginal archaeology test excavation methodology to be prepared. A salvage methodology needs to follow the results of testing. Yet given the extent of existing knowledge associated with Parramatta, it is possible to prepare the salvage methodology concurrent with testing. The salvage methodology would be approved if it remains applicable following the outcomes of testing. Revisions may be necessary should the nature of sediments or archaeology uncovered during test excavation differ greatly from the potential described in Section 3.4.

Archaeological Research Direction and Excavation Methodology

5 Aboriginal Archaeological Research Direction and Excavation Methodology

This section provides a methodology for the investigation of potential Aboriginal archaeological resources within the Sydney Metro, Parramatta site. It is set out in two parts:

- the Aboriginal archaeology research direction
- the Aboriginal archaeology excavation methodology (which also includes the methodology for assessing and understanding sediments across the site).

The Aboriginal archaeological salvage methodology proposed may need to be revised following archaeological test excavation—this is defined under condition D22.

5.1 Archaeological Research Design

There are many scientific and Aboriginal heritage gaps and ‘unknowns’ about this specific area of Parramatta, relating to sedimentary formation/composition and Aboriginal heritage and archaeological questions. The archaeology and sedimentary questions are interconnected, notably because of the unique formation and characteristics of the Holocene alluvium.

5.1.1 Sedimentology Research Questions

The site is primarily associated with the Holocene alluvium. Framing questions focus on the nature of the deposit, its formation processes, its structure, its association with the adjacent PSB, and how evidence for Aboriginal use of the area has been encapsulated and retained:

- What is the extent of the alluvial landscape?
 - Is the alluvial landscape uniform and consistent across its extent?
 - Is there more than one alluvial landscape (eg does the alluvium connected with the water course in the southeast of the study area differ to that mapped by Mitchell 2008?)
 - What is the depth of the alluvium, and how does this depth differ across its extent?
- How did alluvium soil landscape form?
 - What is the structure of the alluvial soil landscape? Does it comprise the two distinct layers described by Lawrie 2019? Are these layers uniform? Do they extend across the entire soil landscape?
 - What is the date of formation for each layer?
 - Does each layer comprise a pollen record which allows for palaeoenvironmental reconstruction?
- How does the alluvial soil landscape interface with the PSB?
 - If the lower layer of alluvium predates the fluvial component of the PSB, how did the PSB interface with the alluvium, or does the alluvium extend below the PSB?

- Why is there no PSB as a stratigraphical horizon within the mapped extent of the alluvium?
- How did the Holocene layer of the alluvium form? Did this cut and erode PSB?
- What are the Aboriginal cultural connections associated with this alluvium?
 - Did the lower layer form a wetland or contribute to a waterlogged environment in the centre of Parramatta?
 - During what period was this wetland present (eg how does this correlate with climatic and environmental change [as defined under the ERS and Table 2.1])?

5.1.2 Archaeology Research Questions

The archaeological research questions associated with most projects on the Cumberland Plain ask simple questions of the archaeology, namely:

- What is the condition and extent of the archaeological deposit?
- How old is the archaeological deposit?
- What does the archaeological deposit tell us about how Aboriginal people used the landscape and specific places within it?
- How does the archaeology relate to contemporary Aboriginal communities and peoples today?

These fundamental questions apply to the current investigation, but have been refined to be location-specific, while continuing the process of cultural landscape investigation commenced through the investigation of sediments.

- Prior archaeological investigations have suggested that deposits connected with the alluvium date to the last 2,000 years only:
 - Is there evidence of earlier Phase 1 and/or 2 archaeology? Or does the archaeology relate only to the last 2,000 years (Phases 2B and 3)?
 - Where is this located within the stratigraphical matrix of alluvium/PSB?
 - Have geoarchaeological processes of Holocene alluviation stripped and removed earlier evidence of Phase 1 and earlier Phase 2 archaeology from this particular location?
- If the alluvium did form in connection with a wetland during the mid-Holocene, was this a major resource zone for Aboriginal people?
 - Modelling for site patterning has suggested a ‘sensitivity line’, drawn at an arbitrary 50m to 80m from the mapped edge of the alluvium (Figure 3.3). Are Aboriginal sites located to the east and north of this line, in locations on the margin of the alluvium, which may have been drier? Can the ‘sensitivity line’ be refined?
 - What is the patterning of archaeological sites in and around the alluvium?

- What is the composition of the archaeological sites? Do the tools present evidence for their type of use, and does this specifically relate to uses connected to wetland resources?
- Are there other types of archaeological evidence? Can we observe archaeological signatures for plant, animal and/or resource processing?
- The alluvium is located within a deep time cultural landscape in the centre of Parramatta, considering the above:
 - How does new information on use of a wetland resource change our understanding of middle to late Aboriginal cultural landscape use?
 - Does the archaeological signature vary over the last 2,000 years, and can this be related to social and economic changes under local Aboriginal tradition?
 - If the wetland only formed during the mid-Holocene, what was here before? And how was this landscape used?
 - After 1788, did Aboriginal people attempt to maintain traditions connected with resource extraction from a wetland area? Is there evidence of post-contact material culture (glass, ceramic or flint?) Can usewear define how these were manufactured and used? Do these uses suggest continuity or divergent methods to those connected with stone implements in Phase 2B?
- How do the archaeological signature of the Metro site change and alter our understanding of deep time Parramatta? And how is this understanding interpreted by Darug people today?
 - Can the results from the work be interpreted through cultural frameworks and local Darug traditions?
 - Do the results support recent investigations into late Holocene social and demographic interpretation?
 - Does the archaeological and environmental research support further public interpretation or this specific place within Parramatta? And how do Darug people want this specific story to be disseminated?

5.2 Aboriginal Archaeological Excavation Methodology

Addressing the project's research questions requires input from the following disciplines through a process of collaborative field excavation and sampling, followed by post-excavation laboratory work, and consultation with the local Aboriginal community:

- Sedimentology—the primary tool used to investigate how the alluvium formed, and how it relates and connects to the adjacent PSB. Sampling for sedimentary analysis will occur during archaeological works, but will also require access to the Metro site when deep excavation has occurred and alluvial sequences can be sampled to bedrock.
- Archaeology—used to investigate and excavate cultural deposits associated with the alluvium and PSB. Archaeological techniques will be used to obtain samples for the following disciplines.

- Relative dating—OSL samples will be taken during archaeological and sedimentary work. Radiocarbon analysis can be undertaken on archaeological features identified during excavation.
- Palynology—analysis of pollen and spores from sediment to recreate palaeoenvironmental conditions, notably past ecological regimes.
- Lithics analysis—specialist analysis to determine the nature, function and technologies connected with the lithics. Conjoin analysis can also be used intra-assemblage to determine the integrity of a site’s deposits and to infer post-deposition movement.
- Use wear—microscopic analysis of edges and marks on lithics, glass and ceramics to determine how artefacts have been manufactured and used. This is the only technique which provides definitive proof that glass artefacts have been deliberately manufactured and/or used.
- Community consultation—discussion with Aboriginal community members to understand and interpret the results from the analysis within a social community framework. Consultation underpins all values connected with the work—social, historical, aesthetic and scientific.

5.2.1 Archaeological Principles

The archaeological methodology proposed is flexible. It must interface with the processes of site demolition, management of any contaminated materials, and notably the excavation program for historical archaeology. Relevant considerations include:

- modifications to the proposed design; changes in the required ground works
- understanding of site contamination and how contamination must be managed under any remediation action plan and the Construction Environmental Management Plan (CEMP)
- requirements for heritage conservation of built heritage items, such as the two heritage buildings on the north and south boundaries of the site
- understanding of the archaeological resources within the site and their scientific and cultural significance.

To frame our work the following archaeological principles have been prepared.

Principle 1—Testing in Areas of Potential

Archaeological test excavation need only occur in areas with potential for intact Aboriginal archaeological deposits. These areas are defined as those places with remnant A₁ and/or A₂ soil profiles, above basal clay. Clarification of these locations must be confirmed through a process of sedimentology testing work, and the results from archaeological monitoring during removal of fills. Areas where natural soil profiles have been entirely removed or disturbed need not be test excavated.

Principle 2—Excavation in Areas of Impact

Excavation should only occur in areas to be impacted by the proposed works. Should zones within the Sydney Metro, Parramatta site be capable of a conservation outcome, then archaeological testing should not be undertaken. Such locations will be identified by Sydney Metro prior to archaeological works commencing; current conservation zones are shown in Figure 3.3.

Principle 3—Safety and Supervision

A safe work environment must be provided for archaeological excavation. Non-archaeological fills will need to be removed prior to test excavation commencing. The removal of fills, where they interface with the archaeological horizons (historical and/or Aboriginal) must be supervised by a qualified archaeologist. Areas must be made safe prior to archaeological hand excavation commencing.

Principle 4—Excavation based on Requirements and Research

An indicative pattern for test excavation has been proposed. This will need to be ground-truthed prior to works commencing. All locations for archaeological excavation will be guided by the practical requirements for the archaeology and the ability for excavation to take place. This means that test excavation should be in areas that are able to be excavated, that have archaeological potential, and that can be excavated in a scientific manner.

Principle 5—Testing a Sufficient Sample

A sufficient sample of the study area should be test excavated to identify whether an extensive or informative archaeological deposit is present. Sufficient time must be allowed for this work to be completed safely and scientifically. Programs of development should not commence until the archaeological excavation has been completed in an area.

Principle 6—Salvage guided by Evidence and Research

If the Aboriginal test excavation identifies a suitable archaeological deposit (eg stratified deposits, higher density deposits (to be defined on the basis of density comparison across the excavation area [and with other adjacent Aboriginal sites, at APHS and Parramatta Square], with emphasis on deposits which contain specific characteristics of functional Aboriginal objects and are able to address relevant research questions) and/or non-lithic archaeological features), then salvage excavation of that deposit should be commenced to recover a representative sample of the deposit.

5.2.2 Archaeological Excavation

Aboriginal archaeological excavation should be undertaken in accordance with the above principles. Two phases of work are proposed:

- a testing phase, to confirm the presence of suitable remnant soil landscapes and, if present, to archaeologically sample those landscapes
- a salvage phase, to recover a representative sample of any significant archaeological and sedimentary deposits.

A program for the interfacing of Aboriginal and historical archaeology has been developed as a joint methodology statement. The principles of the joint methodology have been taken from this excavation methodology.

5.2.3 Phase 1—Sedimentology Testing Work

The enabling works geotechnical investigations present the first opportunity for detailed analysis of soil deposits across the Sydney Metro, Parramatta site in connection with Aboriginal heritage. The program of geotechnical works should make available the upper 2m of all bore hole samples for sedimentary analysis. The outcomes of this analysis can be fed into a revised archaeological model for the project, and used to inform this archaeological excavation methodology.

Following the removal of fills within a zone (Figure 3.3), and the completion of any historical archaeology, an initial stage of hand augering should be undertaken to determine the nature, composition, stratigraphy and extent of the soil landscape across the zone. A hand auger appropriate to the sampling requirements should be used, and augering should continue to a depth that provides certainty that no buried soil horizons are present. The extent and need for this work depends on the nature and quality of data that was obtained during the enabling works geotechnical investigations.

Recording of all sedimentary profiles should be undertaken following a standard soil proforma, and samples of soils may be taken for reference and/or future analysis.

5.2.4 Phase 1—Archaeological Testing Work

Within any single zone (Figure 3.3), following the process of hand augering, the geomorphologist/sedimentologist and archaeological excavation director will determine the extent of intact and/or partially truncated soils—these zones will be determined to hold Aboriginal archaeological potential. These area/areas will be subject to archaeological hand test excavation.

An indicative Phase 1 test excavation grid has been proposed for each zone, which is shown in Figure 5.1 and described in Table 5.1. The grid is based on a 20m by 20m sampling pattern, which is appropriate with sampling requirements under the NSW Code of Archaeological Practice.¹ The sampling grid is indicative. Additional TUs could be placed on a smaller 10m by 10m grid to confirm the nature and extent of the deposit in any single location, and/or provide additional sampling in areas with archaeological potential and good condition natural soil profiles. The need for additional test units would be determined by the excavation director, following completion of the initial sampling.

The location of each test excavation unit (TU) can be moved to avoid dangers, services, contamination, built features or prior impacts. The final location of all excavated TU should be recorded by a surveyor following excavation. Archaeological test excavation should follow the basic premises of the NSW Code of Archaeological Practice,² with the following clarifications.

Each TU should be 1m by 1m, and excavated to a sterile soil horizon—B horizon basal clay. Sub-500mm excavation units could be used for some TUs, but this will be determined by the excavation director. Archaeological test excavation should be undertaken in 50mm spits, and/or by natural stratigraphy. Any archaeological feature identified should be excavated according to its stratigraphy. TUs can be expanded to capture the extent of an archaeological feature. All features should be sampled for carbon and soils. A representative sample of test trenches should be sampled for soil, which may be used for future palynology, sedimentology and OSL dating.

All archaeologically excavated deposits should be wet sieved through a 3mm mesh. Sieving can occur on or off site, and can be undertaken using a water cart into skip bins, which can be emptied as required.

It is not the intention of the sampling program to use a machine for testing; however, in some circumstances this could be necessary. Such situations include deep soil profiles which cannot be accessed and hand excavated safely, and/or soil profiles that are associated with contaminated soils. Any machine excavation would be directed by a suitably qualified archaeologist, and would aim to take 100mm spits, using a flat bucket 1.2m wide. All machine excavated spoil would aim to be wet sieved, as described above.

Should it not be possible to excavate the proposed pattern and density of test excavation units in any zone, the project will need to provide Heritage NSW and the project RAPs with a written clarification explaining the reasons why.

All Aboriginal lithics from test excavation can be assessed on or off site. All lithics should be assessed in line with the standards of Holdaway and Stern.³ Following a basic analysis of the sediments and archaeological content, a determination for the need to salvage an area will be made. Triggers for salvage include indication that any Pleistocene (Phase 1) and/or post-1788 (Phase 3) archaeological material is present; densities of lithics above 10/m²; and/or archaeological features. Justification for salvage (expansion) of any TU should be recorded and used to update the following salvage methodology, in accordance with Condition D22.

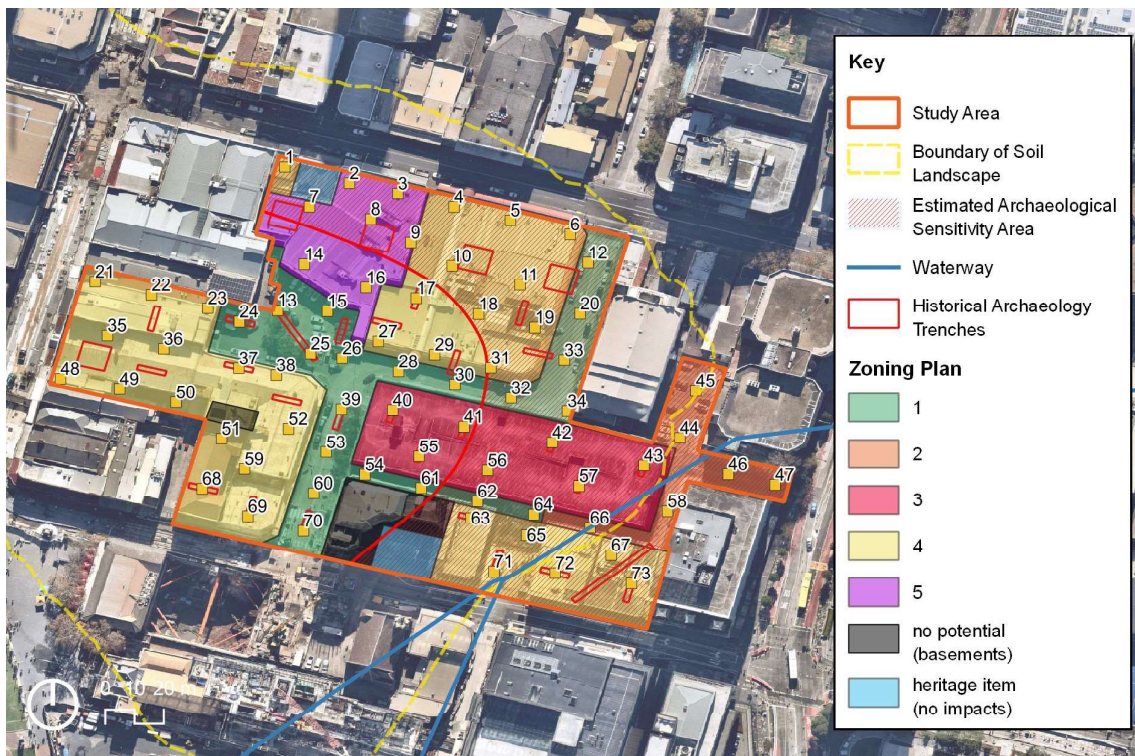


Figure 5.1 Proposed Phase 1 Aboriginal archaeological sampling grid. The sampling locations show the proposed pattern for historical archaeology test excavation, and connection between these two disciplines. (Source: GML 2021, over Nearmap base map)

Table 5.1 Indicative number of Phase 1 archaeological test pits in each zone.

Zone	Potential number of test pits	Possible Aboriginal archaeology (from Table 3.3)
1	20	The green zone. Bore logs suggest 0.5m of fill is present, which could cap Holocene alluvium A ₁ and A ₂ horizons. If intact, the depth of A ₂ with Aboriginal archaeology could be between 300mm and 500mm deep. This should interface with a higher plasticity B horizon clay, which has no archaeological potential.
2	6	The orange zone.

Zone	Potential number of test pits	Possible Aboriginal archaeology (from Table 3.3)
		<p>This zone is associated with the mapped extent of PSB, and also the water channel. Fluvial actions could have eroded PSB and deposited a further type of alluvium in this zone.</p> <p>Archaeology could be associated with A₁ and A₂ horizons of the alluvium, to a depth of 0.5m (?), below which PSB could be present, with further archaeological deposits to a depth of 1.5m below the current surface level (assuming 0.5m of fill).</p>
3	7	<p>The red zone.</p> <p>If remnant soils are present, zone 3 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.</p>
4	34	<p>The yellow zone.</p> <p>Where remnant soils are present, zone 4 could present archaeological deposits according to the soil landscape. The descriptions for zones 1 and 2 would be applicable.</p>
5	6	<p>The purple zone.</p> <p>Where remnant soils are present, zone 5 could present archaeological deposits according to the soil landscape. The description for zone 1 would be applicable. The survival of remnant soils can be clarified following removal of the building.</p>
Total	73	

5.2.5 Phase 2—Archaeological Salvage Work

Condition D22 outlines that a 'Salvage Excavation Methodology(s) must be prepared after analysis of the test excavation results'. Analysis of the outcomes from test excavation is a process undertaken on site during excavation of each zone. This analysis will be undertaken by the excavation director, and used to inform a location specific salvage methodology. A standard salvage methodology is provided below, and will be tailored according to the nature of the sediment (notably its depth and ability to yield archaeological deposits), and the type of archaeology present (eg Aboriginal objects, features such as cooking pits).

Phase 2 archaeological salvage would involve the expansion of relevant TUs identified with a deposit capable of addressing the project's research questions. The expansion of all TUs would be in 1m x 1m squares, which may be subdivided and excavated as 50cm x 50cm sub-squares. The requirement for salvage excavation, the nature of TU expansion, and the extent of expansion would be determined by the Aboriginal archaeological excavation director in consultation with the project RAPs on site. This would be documented in the field, outlining those present and the decisions made.

Excavation in each salvage area should continue to the margins of the archaeological deposit (for ERS Phase 1 or 3 objects), and/or until artefact densities fall below 10/m² (for ERS Phase 2 and 2B deposits). This density represents a compilation of all Aboriginal objects within the vertical sequence inside a single excavation square. Within the PSB salvage excavation should continue to a depth with sterile sediment. Within the alluvium and Blacktown soils landscapes, excavation will cease at the

intersection of the B horizon clay. Excavation should seek to cover the extent of archaeological features (noting these may not contain Aboriginal objects).

Should the archaeological deposit be extensive, salvage excavation may be limited once a culturally and scientifically appropriate sample has been recovered. Parameters defining these measures would need to be discussed by the archaeological excavation director, on-site project RAPs, and a representative from Sydney Metro. Emphasis should be placed on recovery of intact archaeological deposits; Aboriginal objects located in redeposited or fill context may not require salvage excavation.

The number of 'sites' or locations requiring salvage cannot be determined until the outcomes from testing are known. This should again be applicable to the heritage values of the deposits, and be based on contrast against the archaeological outcomes from nearby Aboriginal sites (Parramatta Square and APHS).

5.2.6 Phase 2—Sedimentology Sampling

Sampling for sedimentology should be undertaken following archaeological salvage. A range of salvage areas (or suitable TUs) should be selected, so that sufficient samples can be acquired to address the projects research questions.

Most sediment sampling will occur within the archaeological trenches. However, it is envisaged that deep sampling of an alluvial section profile from the upper horizon of that profile to bedrock should be undertaken. This sampling will expose a 'face' of around 10m, from which soil and OSL samples should be taken at intervals sufficient to understand the formation processes of the deposit.

Obviously, this presents a safety issue, and a safe sampling methodology should be proposed in consultation with project engineers. This could include staged sampling as the excavation proceeded to depth, or use of a scissor lift placed on bedrock at the base of an excavated section.

5.2.7 Aboriginal Objects within Disturbed/Historical Contexts

It is expected that during the historical archaeological excavation program, Aboriginal objects will be identified. It will not be necessary to cease work when this occurs.

Any Aboriginal objects will be recorded in terms of historical archaeology context, placed in a plastic artefact bag, and held on site in an archival box. If the locations of an artefact interfaces with a 'natural' soil profile, an Aboriginal TU may be located at that position and excavated following the completion of historical archaeology works. Any potential post-1788 (Phase 3) artefacts should be set aside for immediate analysis by the Aboriginal archaeology excavation director. The context of those artefacts should be considered, and discussion between the excavation directors will determine how work in the area of the find proceeds. In most instances, historical archaeology work should proceed, noting caution for further similar finds.

All Aboriginal artefacts recovered during historical archaeology works will be included in the Aboriginal site record and post-excavation reporting.

5.2.8 RAP Involvement in the Work

Representatives of the RAPs with suitable relevant experience should be engaged by the proponent to collaborate in the archaeological works during the Aboriginal archaeological investigations. The numbers of representatives should be appropriate to the workload on site. The involvement of RAPs in the work will be determined by Sydney Metro.

5.2.9 Commencement of Development Works

Locations that do not contain remnant soil profiles—for example, where prior development has completely removed or wholly disturbed natural soil profiles—will not be subject to Aboriginal archaeological excavation, and no further investigation of Aboriginal archaeology would be required prior to the commencement of development works within those locations. These locations are shown in Figure 5.1 as the grey zones.

Following completion of all archaeological and sedimentary investigations, a zone can be deemed fully explored and development, including bulk excavation, may proceed. Sign-off from both the Aboriginal and historical archaeological excavation directors is required. Deep sampling for sedimentary analysis may still be required in some instances, and would be outlined during the sign-off process.

5.2.10 Human Remains

In the unlikely event that human skeletal remains are identified, work will cease and the NSW Coroner's Office and/or NSW Police would be notified immediately. If the remains are suspected to be Aboriginal, the Aboriginal community and Heritage NSW would be contacted, and a specialist forensic anthropologist contacted to determine the nature of the remains.

If the remains are suspected to be Aboriginal, all investigation should be undertaken in accordance with *Skeletal Remains: Guidelines for management of Human Skeletal Remains*.⁴ Works would not recommence in the area unless authorised by Sydney Metro and/or the NSW Police Force.

5.2.11 Reporting and Post-Excavation Analysis

An excavation report detailing the results of the Aboriginal archaeological excavation program would be prepared. The report would present a description of the project and its objectives and research framework; a description and analysis of the evidence recovered from the study area, including images of the evidence and plans developed from measured drawings created on site; archival and environmental evidence; a review of the program with a response to the research framework; and a discussion of new areas of research that may have been highlighted by the excavation, including the relative values of the artefact assemblage.

The information derived from the Aboriginal archaeological excavations will be used for greater analysis and understanding of the archaeological and cultural significance of the study area, with consideration given to implications for the regional prehistory. The report will also compare and contrast the study area within the wider Parramatta area and Cumberland Plain region.

Copies of the excavation report, once completed, would be forwarded to the proponent, the project RAPs and Heritage NSW. A plain English report should be developed, in collaboration with RAPs. Timeframes for post-excavation reporting will depend on the extent of material recovered. At least 24 months should be allowed for this phase of the work.

Aboriginal Artefact Analysis

All Aboriginal artefacts recovered during the excavation program would be subject to specialist lithics analysis. A standard recording approach would note all relevant attributes in a comparable manner to other regional lithic studies, and in accordance with Holdaway and Stern.⁵ A technical report that assesses the stone materials against other recent excavations in the region would be prepared.

The analysis may identify some artefacts which have been used, and these should be subject to specialist use-wear analysis.

All Phase 3 artefacts (glass, ceramic and flint) require a three-stage process of investigation. This has been applied to other assemblages in Parramatta, and Western Sydney, and is the only method suitable for confirming whether non-traditional materials have been made and/or used by Aboriginal people. The stages are as follows:

1. an assessment by a specialist in historical artefacts to confirm the material type and phasing of the item
2. a classical analysis adhering to standards for stone artefacts
3. microscopic analysis to identify use wear and/or manufacturing processes.

Radiometric Dating

Should appropriate archaeological deposits such as hearths, pits, ground ovens or potentially stratified geomorphological units be identified during Aboriginal archaeological investigations, appropriate samples would be collected for radiometric dating. This may include radiocarbon dating (OSL), depending on the nature of the archaeological deposit encountered.

The sedimentary analysis of the alluvium (and possibly PSB) will require a series of OSL samples to be taken from a complete section profile to bedrock. These samples will provide the ability to address questions about the formation period of the alluvial soil landscape(s).

Palaeobotanical Analysis

Samples from archaeological trenches, archaeological features, and the whole alluvial profile will be sampled and subject to palynological analysis. The outcomes will aim to address research questions relating to the paleoenvironment and Aboriginal economy in connection with the wetland area.

Sedimentary Analysis

Detailed laboratory analyses of sediment samples, collected at close intervals in a vertical sequence, can show variation of particular properties with depth, some of which may be indicative of stratigraphy. A range of samples will be taken for analysis which may include basic physical and chemical properties of bulk samples, NIR-VIS-UV spectroscopy of point-source samples, and high-resolution particle-size distribution of point-source samples.

5.2.12 Management of Aboriginal Stone Objects

All Aboriginal archaeological materials and soil samples would be temporarily stored in an appropriate place, which would initially be the archaeologist's office, or a relevant analyst's laboratory or office. Once the analysis is complete the collection would be transferred to a suitable Sydney Metro site, and/or other location approved by Sydney Metro, for ongoing curation.

It is the responsibility of Sydney Metro to develop an appropriate future management strategy for any Aboriginal artefacts recovered from the site in collaboration with the project's RAPs.

5.2.13 Dissemination of Aboriginal Cultural Values

The Parramatta Metro project covers a sizable portion of the Parramatta CBD, in a location which will have significant public visitation and interaction. A place specific heritage interpretation plan should be

developed in collaboration with the project RAPs and/or the Metro heritage working group. The interpretation plan should be place specific and focus on aspects of Aboriginal cultural heritage that have been determined through the site works. Consultation and involvement with the City of Parramatta should be undertaken to confirm the interpretation plan provides a continuity of interpretation at Parramatta Square (rather than repeating themes).

5.3 Endnotes

- ¹ Department of Environment Climate Change and Water NSW, Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, 2010. Requirements 15B and 16.
- ² Department of Environment Climate Change and Water NSW, Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, 2010. Requirement 16.
- ³ Holdaway, S and Stern, N 2004, *A Record in Stone: The Study of Australia's Flaked Stone Artefacts*, Museum Victoria and Aboriginal Studies Press, Melbourne.
- ⁴ NSW Heritage Office, 1998. *Skeletal Remains: Guidelines for management of Human Skeletal Remains*.
- ⁵ Holdaway, S and Stern, N 2004, *A Record in Stone: The Study of Australia's Flaked Stone Artefacts*, Museum Victoria and Aboriginal Studies Press, Melbourne.

Aboriginal Community Consultation

6 Aboriginal Community Consultation

Aboriginal community consultation was undertaken as part of the project's EIS. Artefact (2019) adhered with the Heritage NSW process for consultation,¹ which culminated in the registration of 58 separate Aboriginal people/groups (referred to as Registered Aboriginal Parties [RAPs]). Aboriginal community consultation has been continued with the RAPs. This section provides a list of the project's RAPs, and details about the consultation undertaken.

6.1 Project RAPs

The list of the project's RAPs is provided in Table 6.1.

Table 6.1 RAP Groups for the Sydney Metro, Parramatta project.

RAP Group	Contact person
A1 Indigenous Services	Carolyn Hickey
Aboriginal Archaeological Service	Andrew Williams
Badu	Karia-Lea Bond
Biamanga	Janaya Smith
Bidawal	Maria Stewart
Bilinga	Simalene Carriage
Boonunga	Paul Caple
Bullawaya	Fay Campbell
Bulling Gang	Whane Carberry
Butucarbin	Lowanna Gibson
Cullendulla	Corey Smith
Curwur Murre	Donald Parsons
Darug Aboriginal Landcare Inc	Des Dyer
Darug Custodian Aboriginal Corporation	Justine Coplin
Deerubbin Local Aboriginal Land Council	Steve Randall
Dharug	Wally Caines
Didge Ngunawal Clan	Paul Boyd and Lilly Carroll
Djanaba Gaxabara	Ben Walker
Djiringanj	John Walker

RAP Group	Contact person
Elouera	James Sutton
Eora	Kahu Brennan
Gadigal Information Services Aboriginal Corporation	Lily Miles
Gadung	Kathy Burns
Gangangarra	Kim Carriage
Golangaya	Adreian Connelly
Goobah	Basil Smith
Gulla Gunar	Clayton Moore
Gunyuu	Mundarra Drew
Kamilaroi Yankuntatjara Working Group	Phil Khan
Merrigarn	Shaun Carroll
Minamunnung	Aaron Broad
Munyunga	Jason Bell
Muragadi	Anthony Johnson
Murra Bidgee Mullangari	Ryan Johnson
Murramarang	Roxanne Smith
Murrin	Tarlarra Te Kowhai
Murrumbul	Shane Saunders
Ngario	David Pittman
Ngunawal	Edward Stewart
Nundagurri	Thomas Tighe
Tharawal	John Stewart
Thauaria	Shane Davis
Thoorga Nura	Jon Carriage
Tocomwall	Danny Franks
University of Technology Sydney – Indigenous Health	Danielle Montgomery

RAP Group	Contact person
Walbunja	Hika Te Kowhei
Walbunja Elders	Dean Scott
Walgalu	Ronald Stewart
Widescope Indigenous Group	Steven Hickey
Wimbalaya Nura	Ekarla Campbell
Wingikara	Izahya Clay
Wirambie	Vivian Carriage
Woronora Plateau Elders Council	Kayla Williamson
Yaxa Burra	Kevin Stewart-Campbell
Yerramurra	Nathan Walker-Davis
Yulay Cultural Services	Arika Jalomaki
	Dallas Dodd
	Melita Link

6.2 Ongoing Consultation

The ARD was issued to all RAPs on 31 August 2021. A minimum period of 28 days was provided for review, although a comment period to 20 October has been allowed prior to finalising the ARD. Responses from four RAPs have been received. The responses are collated below. Consequent to the RAP review, no modifications to the ARD are proposed.

Table 6.2 RAP comments on the draft version of this methodology.

RAP group	Date	Comment
Deerubbin LALC	7 September 2021	Deerubbin Local Aboriginal Land Council has no major concerns regarding the methodology for the above project.
Thoorga Nura	1 September 2021	Thoorganura makes no comment at this stage. Looks great!
Murangadi	15 September 2021	I have read the project information and Aboriginal heritage assessment for the above project; I agree with the recommendations made.
Widescope	7 September 2021	I have reviewed and support the recommendations outlined in the report.

6.3 Endnotes

- ¹ Department of Environment, C C a W N , , 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW),.

Appendices

7 Appendices

Appendix A

The following figures are derived from historical maps and aerial photographs of Parramatta. These figures serve to indicate historical land use changes within the study area, which aids in identifying disturbance of the ground surface, and thus informs archaeological potential.

Figure	Year	Map overlay details and source
A.1	1796	John Hunter, <i>Settlements of New South Wales: a map showing the courses of the Hawkesbury and Nepean Rivers, the cultivated areas, and the tracks of Governor Hunter to the Cowpastures in 1795 and 1796, manuscript 1796?</i> , State Library of NSW.
A.2	1804	GW Evans, <i>Plan of the Township of Parramatta, about 1813</i> , British National Archives.
A.3	1812	James Meehan, <i>Town of Parramatta 1812</i> .
A.4	1823	GC Stewart, <i>Surveyor General's Crown Plans 1792-1886</i> , NSW Government State Archives and Records
A.5	1844	<i>Plan of the Town of Parramatta and the adjacent properties / as surveyed by W. Meadows Brownrigg</i> , State Library of NSW.
A.6	1890	<i>Parramatta Sewerage Sheet 1</i> , Sydney Water.
A.7	1895	<i>Parramatta Sheet No.18 [cartographic material] / Lithographic Branch, Department of Lands, Sydney N.S.W. 1895</i> , State Library of NSW.
A.8	1928	Unknown source
A.9	1943	NSW Government Historical Imagery Viewer
A.10	1951	NSW Government Historical Imagery Viewer
A.11	1981	NSW Government Historical Imagery Viewer
A.12	2021	Nearmap, image taken Saturday 5 June.

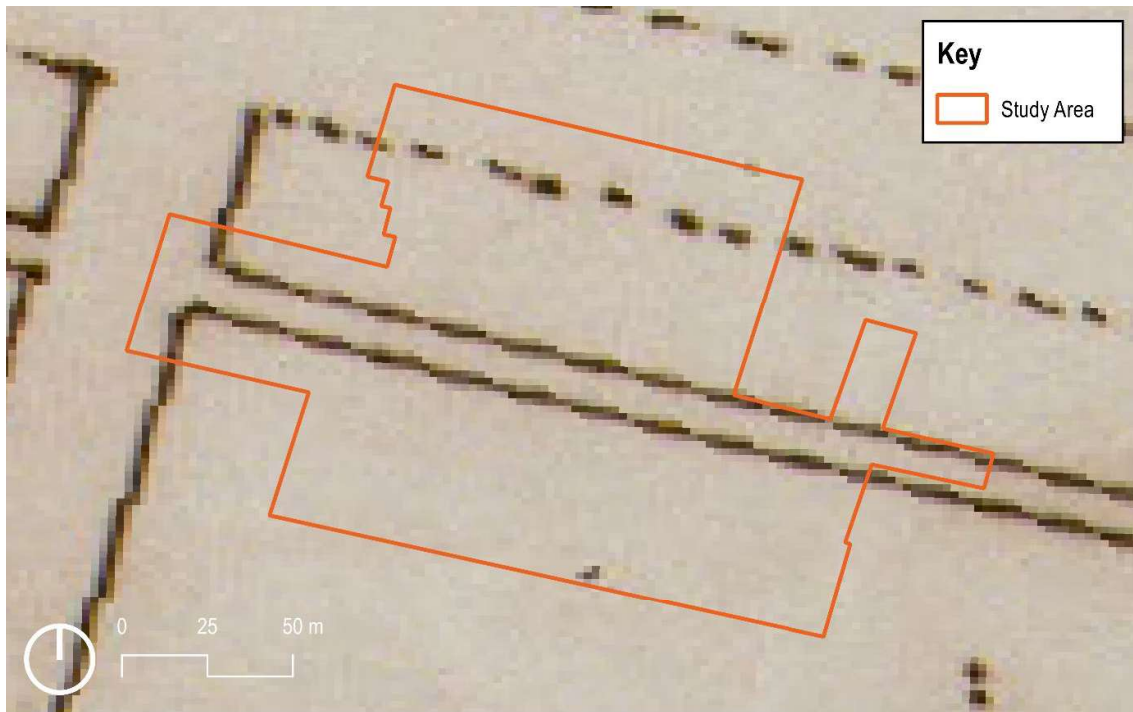


Figure A.1 Study area in 1796. (Source: State Library of NSW with GML overlay 2021)

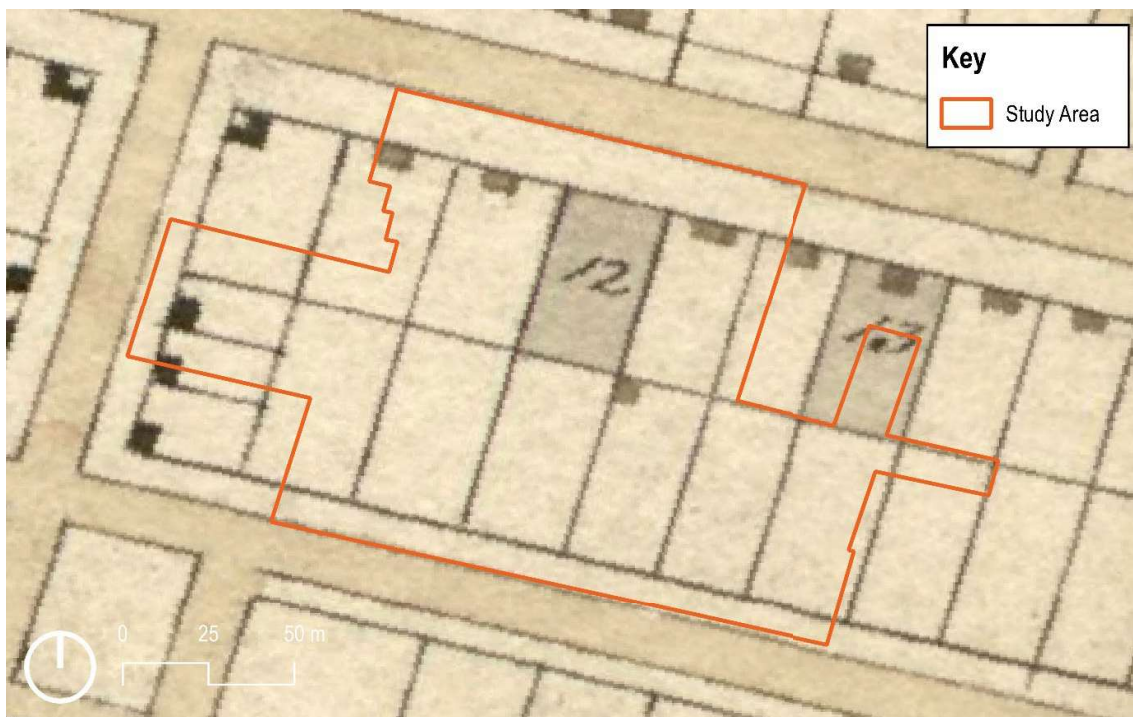


Figure A.2 Study area in 1804. (Source: British National Archives with GML overlay 2021)

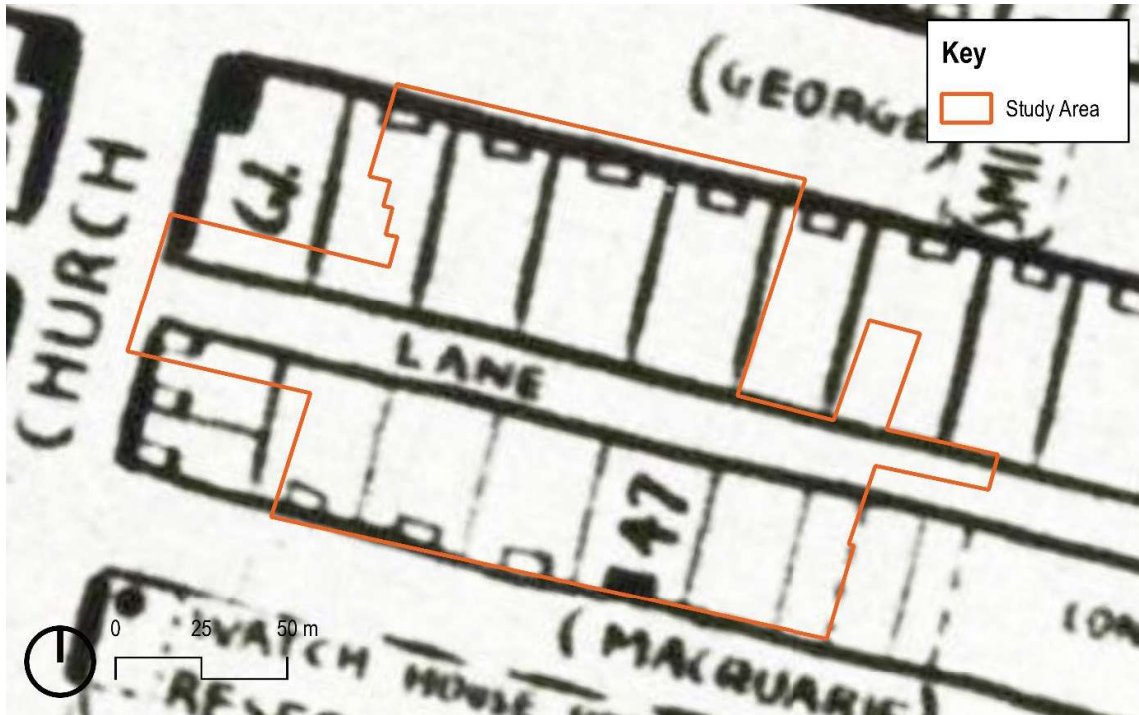


Figure A.3 Study area in 1812. (Source: James Meehan Town Plan, with GML overlay 2021)

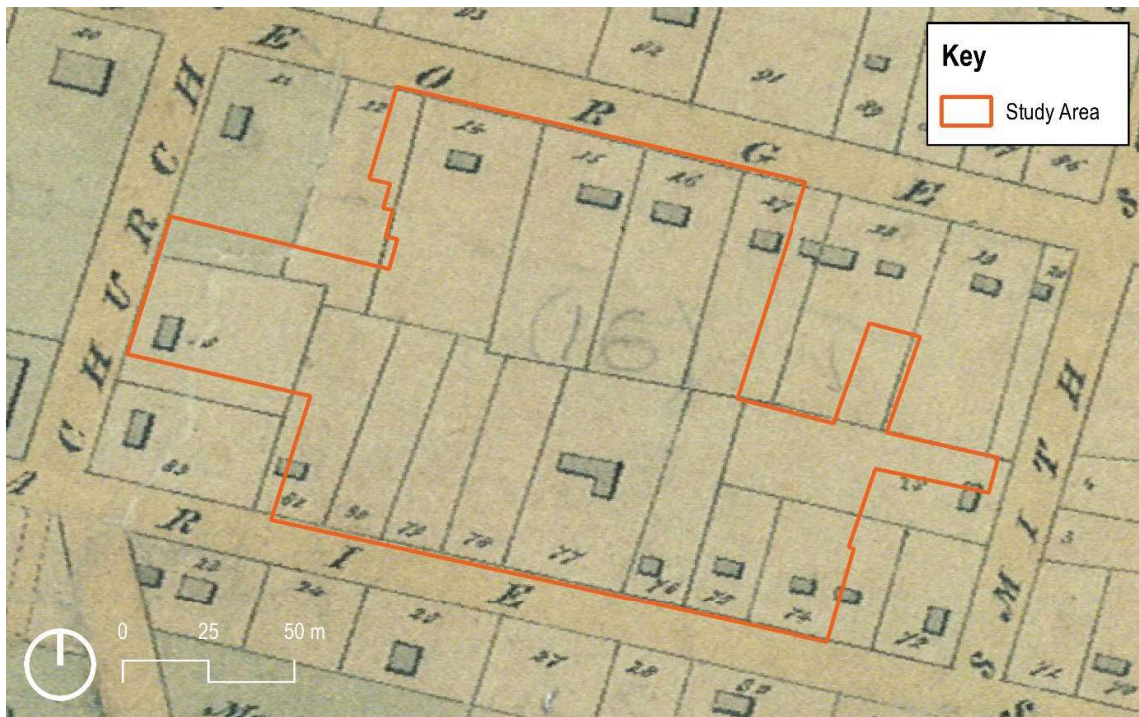


Figure A.4 Study area in 1823. (Source: NSW Government State Archives and Records with GML overlay 2021)

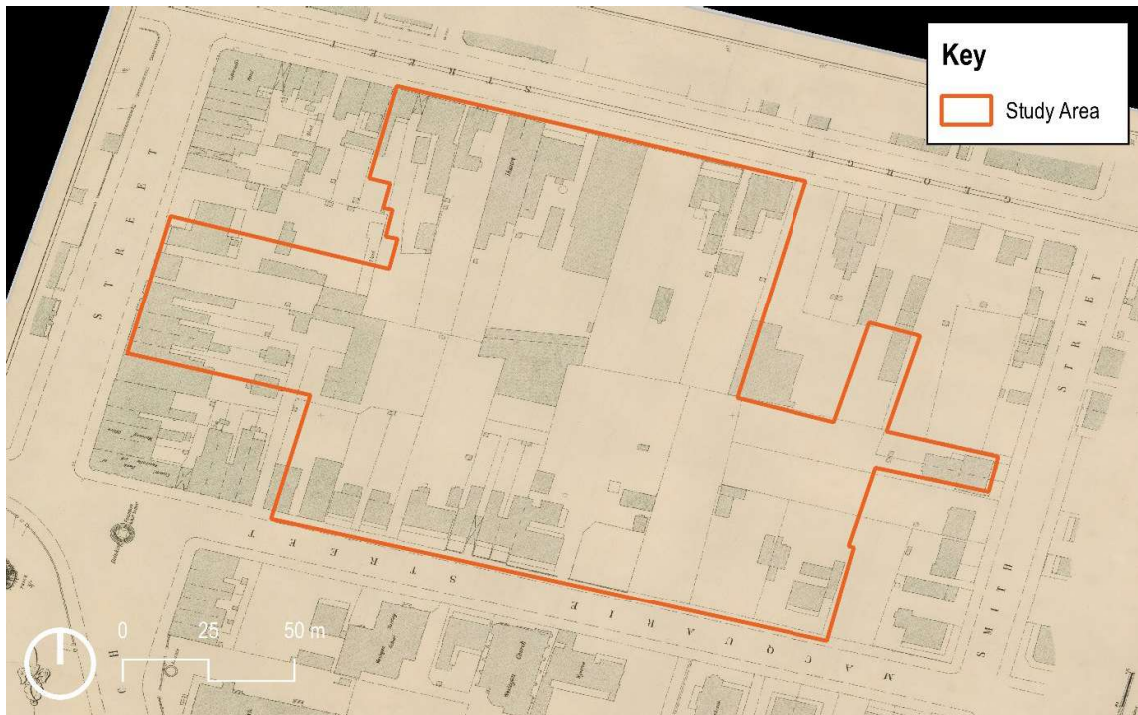


Figure A.7 Study area in 1895. (Source: State Library of NSW with GML overlay 2021)

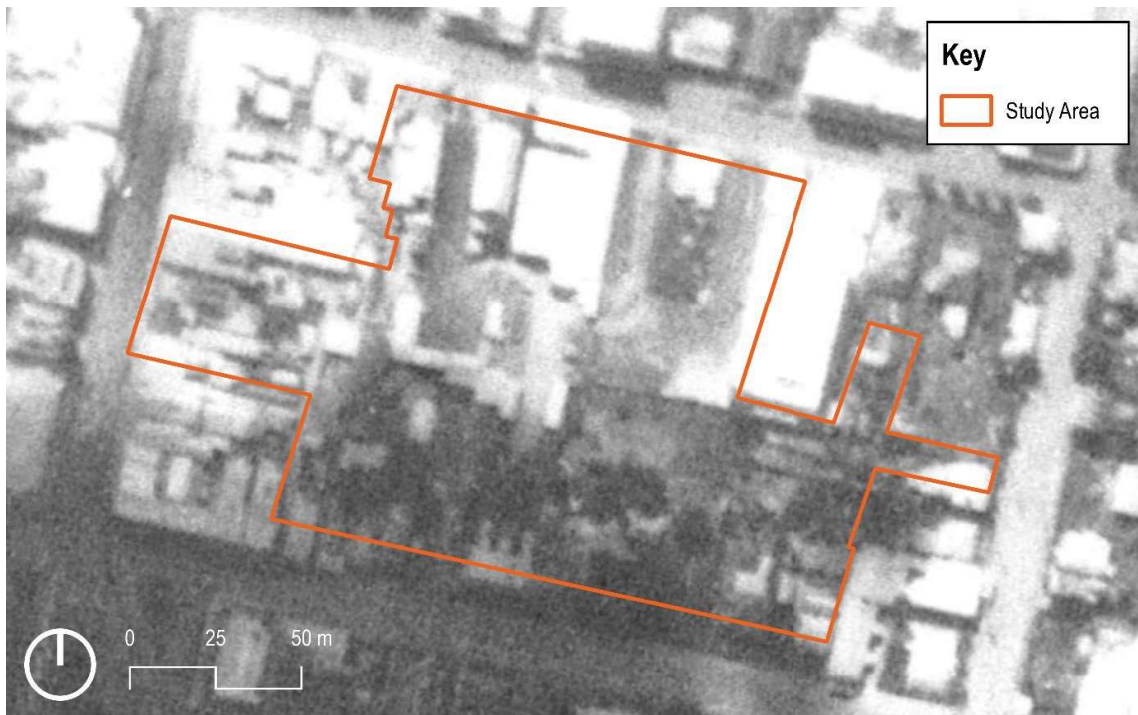


Figure A.8 Aerial photography of the study area in 1928. (Source: Unknown, with GML overlay 2021)



Figure A.9 Aerial photography of the study area in 1943. (Source: NSW Government Historical Imagery Viewer with GML overlay 2021)



Figure A.10 Aerial photography of the study area in 1951. (Source: NSW Government Historical Imagery Viewer with GML overlay 2021)



Figure A.11 Aerial photography of the study area in 1981. (Source: NSW Government Historical Imagery Viewer with GML overlay 2021)

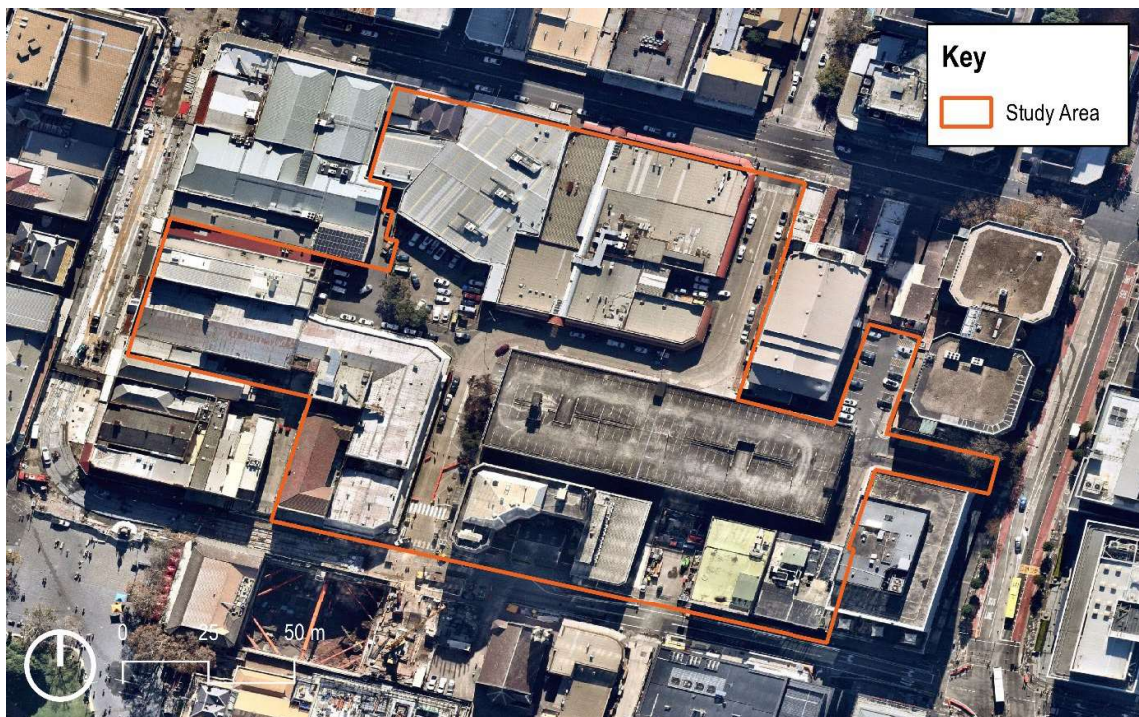


Figure A.12 Aerial photography of the study area in 2021. (Source: Nearmap with GML overlay 2021)

Attachment 9 – Permit to Enter a No-go Zone

Permit to Enter 'No-Go' Zones to be submitted to Environment Manager 2 days prior to entry. Entry must not occur to any part of the area until this permit has been approved.

Project Name:		Project No.:	
Organisation Name:		Permit No.:	
Start Date:		Expected Completion Date:	

PROTECTED AREA LOCATION (S) – ATTACH DRAWINGS / SKETCHES IF NECESSARY

Ch. From	Ch. To	Up/Down	Location	Comments

PART 01: Notification (To be completed by Project Engineer or Site Environment Rep)

Description of Works:			
Justification as to why entry is required:			
Protected Area:			
EECs <input type="checkbox"/>	Contaminated / Hazardous Land <input type="checkbox"/>	Riparian Areas outside footprint <input type="checkbox"/>	Cultural Heritage Sites <input type="checkbox"/>
Habitat Trees <input type="checkbox"/>	Threatened Species <input type="checkbox"/>	Other Environmentally Sensitive Areas <input type="checkbox"/>	Other, specify: _____
Map included with approximate location marked?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Specify plant to be used:			
No. of Workers:			
Proposed vegetation or ground disturbance:			

PART 02: Investigation (To be completed by Site Environmental Co-ordinator/Manager)

Items	Yes	No	Comments
Is entry into the protected area absolutely necessary to complete construction works? Consider other methods that reduce the need to enter the protected areas.	<input type="checkbox"/>	<input type="checkbox"/>	
Will the works impact on the protected area in any way?	<input type="checkbox"/>	<input type="checkbox"/>	
Is a pre-entry assessment required to determine the condition of the habitat? Are photos required to compare with post-entry condition?	<input type="checkbox"/>	<input type="checkbox"/>	
Have relevant authorities been consulted?	<input type="checkbox"/>	<input type="checkbox"/>	
Is approval required from an authority prior to entry?	<input type="checkbox"/>	<input type="checkbox"/>	
Is a justification report required?	<input type="checkbox"/>	<input type="checkbox"/>	
Other?	<input type="checkbox"/>	<input type="checkbox"/>	
Are special conditions or instructions for entry required?	<input type="checkbox"/>	<input type="checkbox"/>	

