

Westmead to The Bays and Sydney CBD

Environmental Impact Statement
Concept and Stage 1

**Technical Paper 3
Non-Aboriginal heritage**

Sydney Metro West

Technical Paper 3

Non-Aboriginal Heritage

Report to Sydney Metro

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EXECUTIVE SUMMARY

Sydney Metro West

Sydney Metro West is a critical step in the delivery of Future Transport Strategy 2056. It would provide fast, reliable and frequent rail service between Greater Parramatta and the Sydney CBD.

Sydney Metro (as 'the proponent') is seeking planning approvals as follows:

- Approval for the whole Sydney Metro West (at concept level) concurrent with Stage 1. Stage 1 involves the major civil construction works between Westmead and The Bays (and is the subject of this technical paper)
- Future stage(s) would include the remaining major civil construction works from The Bays to the Sydney CBD, rail systems fit-out, station fit-out and aboveground building construction, and operation of the metro line (future application(s)).

Sydney Metro is seeking a specific declaration for Sydney Metro West to be declared as State significant infrastructure and critical State significant infrastructure under sections 5.12(4) and 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), respectively.

Overview of Stage 1

The Stage 1 of Sydney Metro West (Stage 1) would involve the major civil construction work between Westmead and The Bays, including:

- Enabling works such as demolition, utility supply to construction sites, utility adjustments and modifications to the existing transport network
- Tunnel excavation including tunnel support activities
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays
- Shaft excavation services facilities at Rosehill (within the Clyde stabling and maintenance facility construction site), Silverwater and between Five Dock Station and The Bays Station construction sites
- Civil work for the stabling and maintenance facility at Clyde including earthworks and structures for crossings of A'Becketts Creek and Duck Creek
- A concrete segment facility for use during construction located at the Clyde stabling and maintenance facility construction site
- Excavation of a tunnel dive structure and associated tunnels at Rosehill to support a connection between the Clyde stabling and maintenance facility and the mainline metro tunnels.

The location of the services facility between Five Dock Station and The Bays Station is currently being investigated, and is not assessed within this technical paper. Further detail on the locational

and design criteria that would be used as part of determining the preferred location is detailed in Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

Approach to Non-Aboriginal heritage assessment

Artefact Heritage has been engaged to prepare a non-Aboriginal heritage assessment for inclusion in the Environmental Impact Statement for Stage 1. This technical paper considers the impacts on listed heritage items and potential archaeological resources within the study area and includes:

- Identification of items and areas of heritage significance that would be materially affected by Stage 1, by field survey and research, including any buildings, works, relics, views, or places of heritage significance
- Consideration of the potential impacts on the values, settings and integrity of heritage areas and items and archaeological resources located within the study area, including items both above and below ground and, where such potential exists, the likely significance of those impacts
- Outlining the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures).

Overview of potential impacts

Stage 1 has potential to have an impact that is more than minor on seven listed heritage items. The seven listed heritage items are described, from west to east, in the table below.

Heritage item	Stage 1 site	Significance	Description of potential impact
Roxy Theatre	Parramatta metro station	State	Indirect impact: Moderate (views and vistas)
Horse Parapet Façade (and potential archaeological site)	Parramatta metro station	Local	Indirect impact: Moderate (views and vistas)
State Abattoirs	Sydney Olympic Park metro station	State ¹	Direct impact: Moderate Indirect impact: Moderate (views and vistas)
St Alban's Anglican Church	Five Dock Station	Local	Indirect impact: Moderate (views and vistas)
Haberfield Conservation Area	Haberfield services facility	Local	Indirect impact: Moderate (views and vistas)
White Bay Power Station	The Bays Station	State	Direct impact: Moderate Indirect impact: Moderate (views and vistas)

¹ The State Abattoirs are listed as State significant on the State Environmental Planning Policy (SEPP) and the Sydney Regional Environmental Plan (SREP), however, the item is not listed on the State Heritage Register (SHR).

Two construction sites are identified as having non-Aboriginal archaeological potential. Ground disturbance and excavation at these sites could impact on archaeological resources. The potential archaeological sites are:

Stage 1 site	Archaeological potential	Potential significance	Assessment of potential impact
Parramatta metro station	Low to moderate potential for remains associated with convict huts, yards and gardens	State	Direct impact
	Low to moderate potential for remains associated with early 19 th c. residences and yards	Local	Direct impact
	Low to moderate potential for archaeological and structural remains of the former convict drain	Local	Direct impact
	Moderate potential for remains associated with mid- to late-19 th c. commercial buildings, yards and outbuildings	Local	Direct impact
The Bays Station	Nil to low potential for buried historic soils and early 19 th c. artefact deposits	Local	Direct impact
	Low to moderate potential for mid- to late-19 th c. structures and outbuildings associated with the original White Bay Hotel	Local	Direct impact
	Moderate potential for mid- to late-19 th c. reclamation fills	Local	Direct impact
	High potential for remains associated with 20 th c. rail infrastructure	Local	Direct impact

Summary of mitigation response

Mitigation measures that would be implemented to address potential impacts on non-Aboriginal heritage sites and areas of archaeological potential are listed in the table below.

ID	Mitigation measure	Applicable location(s) ²
NAH1	Archival recording and reporting of the following heritage items would be carried out in accordance with the NSW Heritage Office's <i>How to Prepare Archival Records of Heritage Items</i> (1998), and <i>Photographic Recording of Heritage Items Using Film or Digital Capture</i> (2006): <ul style="list-style-type: none"> • Shops (and potential archaeological site) (PLEP Item No. I703) • Kia Ora (and potential archaeological site) (PLEP Item No. I716) • RTA Depot (PLEP Item No. I576) • State Abattoirs (SEPP Listing No. A) • White Bay Power Station (SHR Listing No. 01015) 	PMS, CSMF, SOPMS, TBS
NAH2	A method for the demolition of existing buildings and / or structures at the specified construction sites would be developed to minimise direct and indirect impacts to adjacent and / or adjoining heritage items.	PMS, CSMF, SOPMS, TBS
NAH3	Prior to commencement of demolition of heritage elements at White Bay Power Station within The Bays construction site, significant heritage fabric would be identified for salvage and reuse opportunities for salvaged fabric considered.	TBS
NAH4	The policies of the White Bay Power Station Conservation Management Plan (CMP) would be considered in regard to visual impacts of the Stage 1 works, particularly the acoustic shed (or other acoustic measures) and any temporary structures. Significant view lines would be retained during Stage 1 works.	TBS

² WMS: Westmead metro station; PMS: Parramatta metro station; CSMF: Clyde stabling and maintenance facility; SSF: Silverwater services facility; SOPMS: Sydney Olympic Park metro station; NSMS: North Strathfield metro station; BNS: Burwood North Station; FDS: Five Dock Station; TBS: The Bays Station; Metro rail tunnels: Metro rail tunnels not related to other sites (eg tunnel boring machine works); PSR: Power supply routes.

ID	Mitigation measure	Applicable location(s) ²
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 (HIP) for future project stages.	All
NAH6	An archaeological research design(s) would be prepared and implemented to identify the need for archaeological testing or monitoring. Archaeological mitigation measures recommended in the archaeological research design would be carried out in accordance with Heritage Council guidelines, and where appropriate supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology.	All
NAH7	An Archaeological Excavation Report would be prepared by the Excavation Director and would be provided to the NSW Heritage Division within two years of the completion of archaeological excavations specified in the archaeological research design(s).	All
NAH8	<p>In the event that State significant archaeologically 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) • An Archaeological Method Statement (AMS) 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 	PMS

ID	Mitigation measure	Applicable location(s) ²
	meaningful curation, display and public access of any artefacts collected. This may involve partnerships with museums, local heritage centres and/or universities.	
NAH9	The impacted gardens within the State Abattoirs would be reinstated with sympathetic landscaping that is in keeping with the provisions of the Conservation Management Plan.	SOPMS

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1.0 INTRODUCTION

1.1 Sydney Metro West

Sydney Metro West is a critical step in the delivery of Future Transport Strategy 2056. It would provide fast, reliable and frequent rail service between Greater Parramatta and the Sydney CBD.

Sydney Metro (as 'the proponent') is seeking planning approvals as follows:

- Approval for the whole Sydney Metro West (at concept level) concurrent with Stage 1. Stage 1 involves the major civil construction works between Westmead and The Bays (and is the subject of this technical paper)
- Future stage(s) would include the remaining major civil construction works from The Bays to the Sydney CBD, rail systems fit-out, station fit-out and aboveground building construction, and operation of the metro line (future application(s)).

Sydney Metro is seeking a specific declaration for Sydney Metro West to be declared as State significant infrastructure and critical State significant infrastructure under sections 5.12(4) and 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), respectively.

1.1.1 Location

Sydney Metro West would mainly be located underground in twin tunnels. Stage 1, which is subject of this assessment, extends from Westmead to The Bays (refer to Figure 1).

1.1.2 Overview of Stage 1

The Stage 1 of Sydney Metro West (Stage 1) would involve the major civil construction work between Westmead and The Bays, including:

- Enabling works such as demolition, utility supply to construction sites, utility adjustments and modifications to the existing transport network
- Tunnel excavation including tunnel support activities
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays
- Shaft excavation for services facilities at Rosehill (within the Clyde stabling and maintenance facility construction site), Silverwater and between Five Dock Station and The Bays Station construction sites
- Civil work for the stabling and maintenance facility at Clyde including earthworks and structures for crossings of A'Becketts Creek and Duck Creek
- A concrete segment facility for use during construction located at the Clyde stabling and maintenance facility construction site
- Excavation of a tunnel dive structure and associated tunnels at Rosehill to support a connection between the stabling and maintenance facility and the mainline metro tunnels.

The Stage 1 is further described in Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

The location of the services facility between Five Dock Station and The Bays Station is currently being investigated, and is not assessed within this technical paper. Further detail on the locational and design criteria that would be used as part of determining the preferred location is detailed in Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

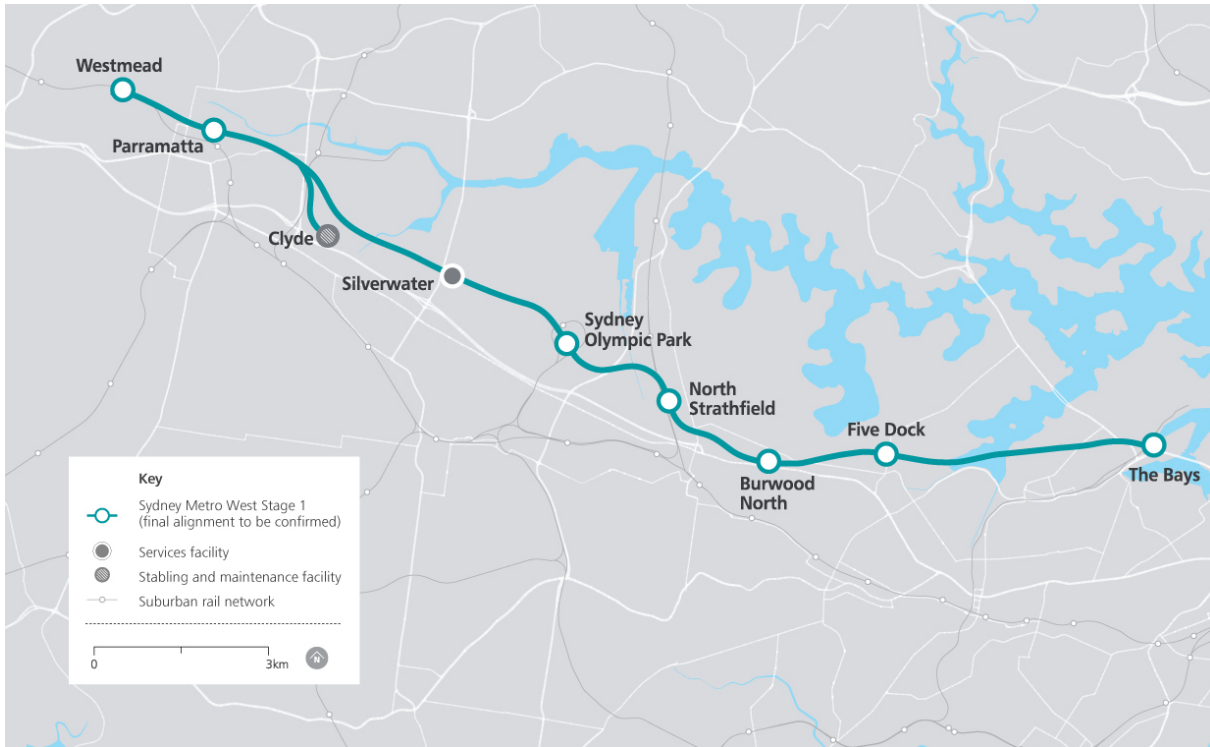


Figure 1: Sydney Metro West – Stage 1 overview

1.2 Purpose and scope of this report

This technical paper, Technical Paper 3: Non-Aboriginal heritage is one of several technical documents that form part of the Environmental Impact Statement. The purpose of this technical paper is to identify and assess the non-Aboriginal heritage impacts of Stage 1 during construction. In doing so it responds directly to the Secretary's Environmental Assessment Requirements outlined in Section 1.3.

This technical paper considers the construction impacts on listed heritage items and potential archaeological resources within the study area and includes:

- Identification of items and areas of heritage significance that would be materially affected by Stage 1 during construction, by field survey and research, including any buildings, works, relics, views, or places of heritage significance
- Consideration of the potential impacts on the values, settings and integrity of heritage areas and items and archaeological resources located near Stage 1, including items both above and underground and, where such potential exists, the likely significance of those impacts
- Proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures).

1.3 Secretary's Environmental Assessment Requirements

The Secretary's Environmental Assessment Requirements were issued for Stage 1 on 11 December 2019. The requirements specific to non-Aboriginal heritage, and where these requirements are addressed in this technical paper, are outlined Table 1 below.

Table 1: Sydney Metro West Stage 1 Secretary's Environmental Assessment Requirements – Non-Aboriginal heritage

Secretary's Environmental Assessment Requirements	Where addressed
1) Potential direct and / or indirect impacts (including cumulative impacts) to the heritage significance of:	
a) Environmental heritage, as defined under the <i>Heritage Act 1977</i> ; and	Section 6.0 Section 7.0 Section 8.0
b) Items listed on National and World Heritage lists; and	Section 6.0 Section 2.0
c) Heritage items and conservation areas identified in environmental planning instruments applicable to the project area	Section 6.0 Section 8.0
2) Where impacts to State or locally significant heritage items are identified, the assessment must:	
a) Include a significance assessment, a statement of heritage impact for all heritage items and a historical archaeological assessment;	Section 6.0, Section 7.0
b) Consider any relevant conservation management plan	Section 6.0
c) Consider impacts to the item of significance caused by, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment(as relevant) and whether these are temporary or permanent;	Section 6.0, Section 7.0
d) Outline measures to avoid and minimise those impacts during construction in accordance with the current guidelines;	Section 9.0
e) Be undertaken by a suitably qualified heritage consultant(s) and/or historical archaeologist (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria)	Section 1.4

Further, the Secretary's Environmental Assessment Requirements reference the investigations and assessments identified in the Sydney Metro West Scoping Report – Westmead to The Bays and Sydney CBD (Sydney Metro, 2019). Table 2 outlines where these requirements have been addressed.

Table 2: Sydney Metro West scoping report assessment requirements – Non-Aboriginal heritage

Scoping report requirements – Stage 1	Where addressed
The non-Aboriginal heritage assessment for Stage 1 will:	
<ul style="list-style-type: none"> Identify items and areas of heritage significance that would be materially affected by Stage 1, by field survey and research, including any buildings, work, relics, gardens, landscapes, views, trees or places of heritage significance 	Section 6.0 Section 7.0 Section 8.0
<ul style="list-style-type: none"> Consider the potential impacts on the values, settings and integrity of heritage areas and items and archaeological resources located near Stage 1, including items both above and below ground and, where such potential exists, the likely significance of those impacts 	Section 6.0 Section 7.0 Section 8.0
<ul style="list-style-type: none"> Outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) in accordance with relevant best practice guidelines. 	Section 9.0

1.4 Authors

This report was prepared by Jessica Horton (Heritage Consultant), Charlotte Simons (Senior Heritage Consultant) and Duncan Jones (Senior Heritage Consultant). Management input and review was provided by Dr Sandra Wallace (Director).

The qualifications of the heritage consultants involved in the production of the report are included in Table 3.

Table 3: Qualifications

Name	Qualification	Years' Experience
Jessica Horton	MA Heritage Conservation (enrolled) BA Archaeology and History	3 years
Charlotte Simons	MA Heritage Conservation BA Design in Architecture	5 Years
Duncan Jones	BA Prehistory and Historic Archaeology (Hons)	12 years
Dr Sandra Wallace	PhD Archaeology BA Prehistoric and Historic Archaeology (Hons)	17 years

Sydney Metro West Stage 1 has not triggered the requirement of an Excavation Director. However, future works may require the need for a consultant that satisfies the Heritage Council of NSW Criteria for assessing Excavation Directors as outlined in Section 9.0 Mitigation and management measures NAH6 and NAH7.

2.0 LEGISLATIVE CONTEXT

2.1 Introduction

There are several items of legislation that are relevant to Stage 1. This chapter provides a summary of these and the potential implications for Stage 1.

2.2 The World Heritage Convention

The *Convention Concerning the Protection of World Cultural and National Heritage* (the World Heritage Convention) was adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) on 16 November 1972, and came into force on 17 December 1975. The World Heritage Convention aims to promote international cooperation to protect heritage that is of such outstanding universal value that its conservation is important for current and future generations. It sets out the criteria that a site must meet to be inscribed on the World Heritage List (WHL) and the role of State Parties in the protection and preservation of world and their own national heritage.

2.2.1 World Heritage List

The World Heritage List contains sites that have been listed by UNESCO as being of special cultural or physical significance.

There are no items listed on the World Heritage List located within the study area, however, the tunnel alignment is located beneath the curtilage of the Old Government House and Domain within Parramatta, a World Heritage List item listed under the title 'Australian Convict Sites' (Place ID 106209).

Noise and vibration levels have been assessed, identifying that no heritage structures above the tunnel alignment would exceed a vibration level of 7.5 millimetres per second. As such, indirect impact (vibration) on World Heritage listed items have been assessed as nil.

Settlement levels have been assessed, identifying that no World heritage listed structures above the tunnel would be impacted.

2.3 Environmental Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legislative framework for the protection and management of matters of national environmental significance, that is, flora, fauna, ecological communities and heritage places of national and international importance. Heritage items are protected through their inclusion on the World Heritage List, Commonwealth Heritage List or the National Heritage List.

The EPBC Act stipulates that a person who has proposed an action that will, or is likely to, have a significant impact on a World, National or Commonwealth Heritage site must refer the action to the Department of the Environment and Minister for the Environment (hereafter Minister). The Minister will then determine if the action requires approval under the EPBC Act. If approval is required, an environmental assessment would need to be prepared. The Minister would approve or decline the action based on this assessment.

A significant impact is defined as "an impact which is important, notable, or of consequence, having regard to its context or intensity". The significance of the action is based on the sensitivity, value

and quality of the environment that is to be impacted, and the duration, magnitude and geographic extent of the impact. If the action is to be undertaken in accordance with an accredited management plan, approval is not needed and the matter would not be referred to the Minister.

There would be no direct impacts within heritage items listed in the World Heritage List or National Heritage List as a result of Stage 1. Therefore there would be no significant heritage impacts as defined under the EPBC Act. Stage 1 would therefore not require referral for heritage values under the EPBC.

2.3.1 Commonwealth Heritage List

The Commonwealth Heritage List has been established to list heritage places that are either entirely within a Commonwealth area, or outside the Australian jurisdiction and owned or leased by the Commonwealth or a Commonwealth Authority. The Commonwealth Heritage List includes natural, Indigenous and historic heritage places which the Minister is satisfied have one or more Commonwealth Heritage values.

There are no items listed on the Commonwealth Heritage List located within the study area.

Settlement levels have been assessed, identifying that no Commonwealth heritage listed structures above the tunnel would be impacted.

2.3.2 National Heritage List

The National Heritage List has been established to list places of outstanding heritage significance to Australia. It includes natural, historic and Indigenous places that are of outstanding national heritage value to the Australian nation.

There are no items listed on the National Heritage List located within the study area, however, the tunnel alignment is located directly beneath the curtilage of the Old Government House and the Government Domain within Parramatta, which is listed on the National Heritage List (Place ID 105957) and Hambledon Cottage and Hambledon Reserve (Place ID 106307), which has been nominated for listing.

Noise and vibration levels have been assessed, identifying that no heritage structures above the tunnel alignment will exceed a vibration level of 7.5 millimetres per second. As such, indirect impact (vibration) on National Heritage listed items have been assessed as nil.

Settlement levels have been assessed, identifying that no Nationally significant heritage structures above the tunnel would be impacted.

2.4 New South Wales Heritage Act 1977

The NSW *Heritage Act 1977* (Heritage Act) provides protection for items of 'environmental heritage' in NSW. 'Environmental heritage' includes places, buildings, works, relics, movable objects or precincts considered significant based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values. Items considered to be significant to the state are listed on the State Heritage Register (SHR) and cannot be demolished, altered, moved or damaged, or their significance altered without approval from the Heritage Council of NSW.

Although the requirements for permits under the Heritage Act are not required for an approved State significant infrastructure project, the Heritage Act is relevant in that it guides assessment and defines statutory listed items. Relevant regulations are also required to be used under the Secretary's

Environmental Assessment Requirements and certain sections of the Heritage Act potentially relevant to Stage 1, such as Section 146 (notification of a relics) are still applicable to approved State significant infrastructure projects.

2.4.1 State Heritage Register

The State Heritage Register (SHR) was established under Section 22 of the Heritage Act and is a list of places and objects of particular importance to the people of NSW, including archaeological sites. The State Heritage Register is administered by the Heritage Division of the Department of Premier and Cabinet and includes a diverse range of over 1500 items, in both private and public ownership. To be listed, an item must be deemed to be of heritage significance for the whole of NSW.

2.4.2 Section 170 registers

Under the Heritage Act all government agencies are required to identify, conserve and manage heritage items in their ownership or control. Section 170 of the Heritage Act requires all government agencies to maintain a Heritage and Conservation Register that lists all heritage assets and an assessment of the significance of each asset. They must also ensure that all items inscribed on its list are maintained with due diligence in accordance with State Owned Heritage Management Principles approved by the NSW Government on advice of the NSW Heritage Council. These principles serve to protect and conserve the heritage significance of items and are based on NSW heritage legislation and guidelines.

2.4.3 Archaeological relics and works

The Heritage Act also provides protection for ‘relics’, which includes archaeological material or deposits. Section 4 (1) of the Heritage Act (as amended in 2009) defines a relic 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”*

Sections 139 to 145 of the Heritage Act prevent the excavation or disturbance of land known or likely to contain relics, unless under an excavation permit. Section 139 (1) states:

A person must not disturb or excavate any land knowingly or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, damaged or destroyed unless the disturbance is carried out in accordance with an excavation permit.

Excavation permits are issued by the Heritage Council of NSW, or its Delegate, under Section 140 of the Heritage Act for relics not listed on the SHR or under Section 60 for impacts within SHR curtilages. An application for an excavation permit must be supported by an Archaeological Research Design (ARD) and Archaeological Assessment prepared in accordance with the NSW Heritage Division archaeological guidelines. Minor works that would have a minimal impact on archaeological relics may be granted an exception under Section 139 (4) or an exemption under Section 57 (2) of the Heritage Act. However, Stage 1 is subject to Part 5.2 (State significant infrastructure) provisions of the EP&A Act, and therefore excavation permits or exceptions would not be required.

The Heritage Act defines ‘works’ as being in a separate category to archaeological ‘relics’. ‘Works’ refer to past evidence of infrastructure. ‘Works’ may be buried, and therefore archaeological in nature, however, exposure of a ‘work’ does not trigger reporting obligations under the Act. The following

examples are commonly considered to be 'works': Former road surfaces or pavement, kerbing, evidence of former infrastructure (such as drains or drainage pits where there are no relics in association), tram and train tracks and ballast and evidence of former rail platforms and bridges.

2.5 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the framework for cultural heritage values to be formally assessed in the land use planning, development consent and environmental impact assessment processes. The EP&A Act requires that environmental impacts are considered prior to land development; this includes impacts on cultural heritage items and places as well as archaeological sites and deposits. The EP&A Act also requires that local governments prepare planning instruments (such as Local Environmental Plans [LEPs]) in accordance with the EP&A Act to provide guidance on the level of environmental assessment required.

The study area falls within the boundaries of several Local Government Areas (LGAs), including Cumberland, Parramatta, City of Canada Bay, Burwood, and Inner West. The Stage 1 alignment also passes through the Strathfield LGA underground. The study area is therefore subject to the:

- Holroyd LEP 2011, which applies to parts of the Cumberland LGA
- Parramatta LEP 2011
- Auburn LEP 2010, which applies to part of the Cumberland and Parramatta LGAs
- Canada Bay LEP 2013
- Burwood LEP 2012
- Ashfield LEP 2013, which applies to the Inner West LGA
- Leichardt LEP 2013, which applies to the Inner West LGA.

The aim of the LEPs in relation to heritage is to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings, views and archaeological sites. The LEP's list items of heritage significance within the LGA.

Sydney Olympic Park, located in the Auburn LGA is subject to *State Environmental Planning Policy (State Significant Precincts) 2005* (State Significant Precincts SEPP) (refer to Section 2.5.1). This excludes the application of the Auburn LEP to land subject to this listing.

The *Sydney Regional Environmental Plan No.26 – City West* applies to The Bays (refer to Section 2.5.3 below). The plan repeals local environmental plans and other planning instruments that would otherwise apply.

2.5.1 State Environmental Planning Policy (State Significant Precincts) 2005

The State Environmental Planning Policy (SEPP) identifies precincts which are of State importance. This plan aims to (among other things) facilitate the orderly use, development or conservation of State significant precincts for the benefit of the State.

Sydney Olympic Park is identified in Schedule 3 of the State Environmental Planning Policy as one such site. This listing identifies two heritage conservation areas, of which one is located within the study area.

2.5.2 Sydney Regional Environmental Plan No 24 – Homebush Bay Area

The study area falls within the boundaries of the Homebush Bay Area which is administered by the *Sydney Regional Environmental Plan No 24 – Homebush Bay Area*. The aim of this plan is to encourage co-ordinated and environmentally sensitive development of the Homebush Bay Area. The plan outlines development in relation to heritage under Part 4. The plan identifies heritage conservation areas under Schedule 4, heritage items under Schedule 5, and potential historical archaeological sites under Schedule 6.

2.5.3 Sydney Regional Environmental Plan No 26 – City West

The study area falls within the boundaries of The Bays which is administered by the *Sydney Regional Environmental Plan No 26 – City West*. The aim of this plan is to encourage co-ordinated and environmentally sensitive development of The Bays. The plan outlines development in relation to heritage under Division 6. The plan identifies heritage conservation areas under Division 6, heritage items under Schedule 4, and potential historical archaeological sites under Division 6.

2.5.4 Sydney Olympic Park Authority Act 2001

The *Sydney Olympic Park Authority Act 2001* (SOPAA) aims to ensure that Sydney Olympic Park becomes an active and vibrant centre within metropolitan Sydney, and premium destination for cultural, entertainment, recreation and sporting events. It ensures that any new development carried out in the designated Sydney Olympic Park precinct accords with best practice accessibility, environmental and town planning standards. Provisions outlined in the SOPAA and subordinate statutory documents applies to the area of Sydney Olympic Park.

2.5.5 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The study area falls within the area administered by the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*. The aim of the plan is to ensure that the catchment, foreshores, waterways and islands of Sydney Harbour are recognised, protected, enhanced and maintained. The plan identifies items of the heritage significance in Schedule 4.

2.6 Sydney Olympic Park Master Plan 2030

Sydney Olympic Park Master Plan 2030 (SOPMP) is a statutory document under the SOPAA 2001 which provides detailed design controls for development proposals. In relation to heritage, the SOPMP states that development should: Conserve heritage items, the Abattoir Heritage Conservation Area, Showground Road and significant trees (SOPMP 2010: 30). The SOPMP also stipulates planning principles for preserving existing views. The SOPMP was reviewed in 2016 and proposed changes were suggested to the boundary of the State Abattoirs Conservation Area.

3.0 ASSESSMENT METHODOLOGY

3.1 The study area

The indicative alignment for Stage 1 is shown in Figure 1. The Stage 1 alignment extends between Westmead in the west to The Bays in the east. The study area for Stage 1 is shown in the maps presented in Figure 2 to Figure 10.

3.1.1 Construction sites

The locations of the construction sites considered in this assessment are described in Table 4.

Table 4: Site locations

Construction site	Site location
Westmead metro station	The block bounded by Hassall Street, Bailey Street and Hawkesbury Road, and extending across Alexandra Avenue and partly within the rail corridor, Westmead.
Parramatta metro station	Within the block bounded by George Street, Church Street, Macquarie Street, and Smith Street, Parramatta.
Clyde stabling and maintenance facility	Within land bounded by James Ruse Drive, Unwin Street, Shirley Street, and the M4 Western Motorway, Clyde.
Silverwater services facility	On the south-eastern corner of Silverwater Road and Derby Street, Silverwater.
Sydney Olympic Park metro station	Between Herb Elliot Avenue and Figtree Drive, Sydney Olympic Park with a portion extending through to Dawn Fraser Avenue.
North Strathfield metro station	Generally within the rail corridor between the existing North Strathfield Station and Queen Street, North Strathfield.
Burwood North Station	Fronting Parramatta Road between Burwood Road and Loftus Street, Concord, with a portion extending to Burton Street; and on the south-eastern corner of Parramatta Road and Burwood Road, Burwood.
Five Dock Station	Between Great North Road and East Street to the north of Fred Kelly Place; and on the south-western corner to Waterview Street and Second Avenue, Five Dock.
The Bays Station	Adjacent to White Bay Power Station, Robert Street, Rozelle.

3.1.2 Study area

For the purpose of this investigation, the study area for each site has been defined as including a 50 metre buffer around each of the construction sites that incorporates not only the construction site but also ancillary works (such as drainage or any required remediation), facilities and access ways to each area during construction. It is noted that construction sites are located within the construction footprint.

The use of a study area (encompassing the buffer) helps to identify heritage items potentially within the visual catchment of Stage 1 where visual impacts on that item may occur. It also supports assessment of other indirect impacts on heritage fabric (for example, as a result of vibration). Any reference to the 'study area' in this chapter includes reference to the 50 metre buffer around the


construction sites, unless otherwise stated. It is noted that the study area at the Clyde stabling and maintenance facility includes an additional section required for a future stage. This has been included within mapping, however this section is not included within the Stage 1 assessment.

Tunnel sections between stations and services facilities would generally be too deep to affect heritage items or archaeological deposits and (with the exception of the tunnel dive and TBM launch shaft at the Clyde stabling and maintenance facility) are not included in the study area. In specific instances where a heritage item is identified in Technical Paper 2: Noise and vibration, they have also been included in this document. This approach means that items above the tunnel alignment are considered in the assessment. Similarly, in some locations, heritage items outside the buffer zone, but directly visible from the construction site, have been included. Potential heritage impacts caused by settlement and power supply routes have also been included within this assessment.

As well as above ground construction sites, the study area includes any underground work associated with station construction, such as mined platforms and underground pedestrian connections.



Document Path: D:\GIS\GIS_Mapping\18260_Sydney_Metro_West\PROJECT\Study area and heritage maps\18260_WestmeadStation_StudyArea.mxd

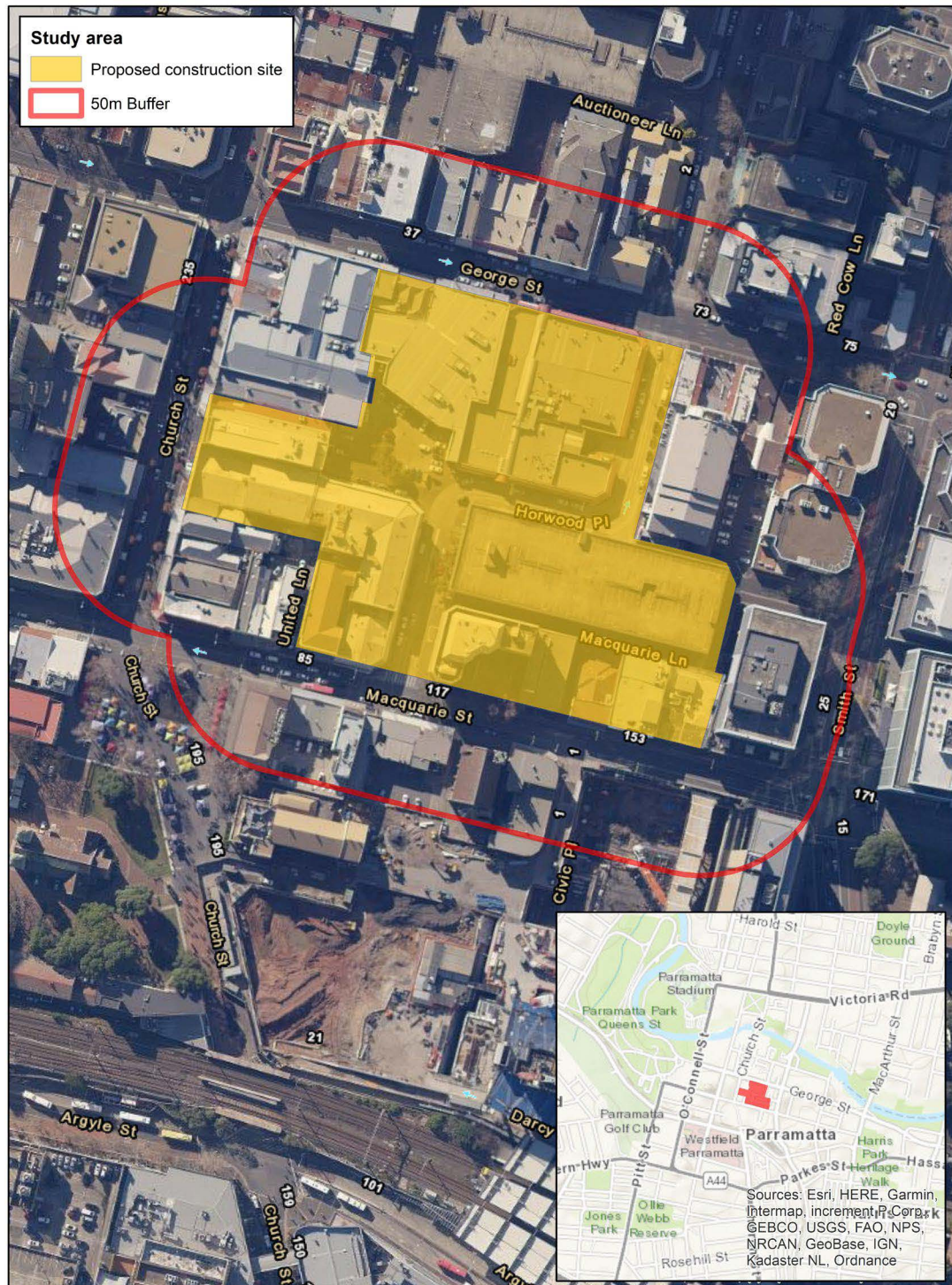
 **Westmead Metro Station**
Study Area
18260 Metro West
LGA: City of Parramatta and Cumberland

SCALE 1:2,000
SIZE A4
DATE 5/12/2019

0 50 100 m



Figure 2: Westmead metro station construction site study area map



Parramatta Metro Station
Study Area
18260 Metro West
LGA: City of Parramatta

SCALE 1:2,000
SIZE A4
DATE 5/12/2019

0 50 100 m



Figure 3: Parramatta metro station construction site study area map

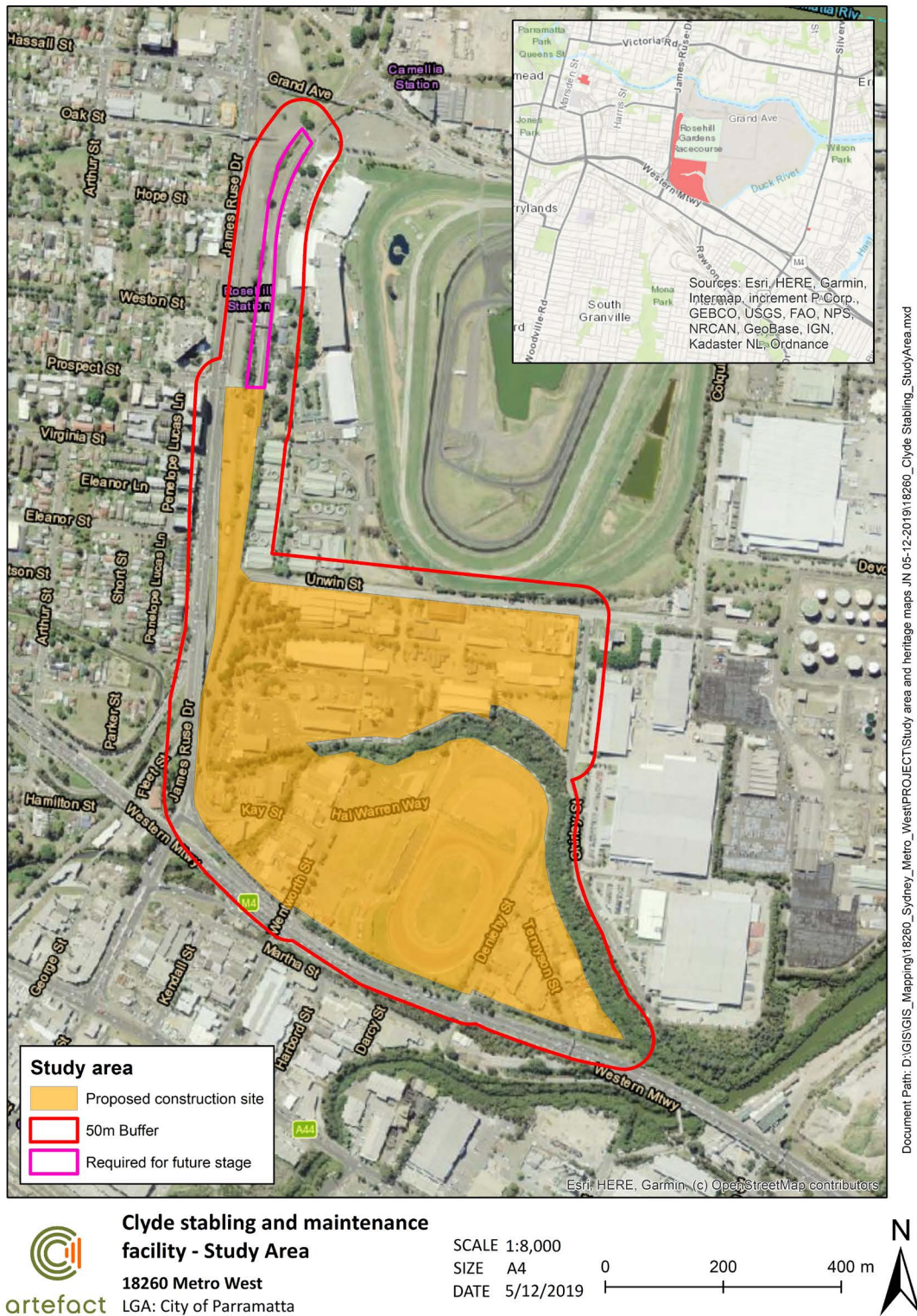


Figure 4: Clyde stabling and maintenance facility construction site study area map

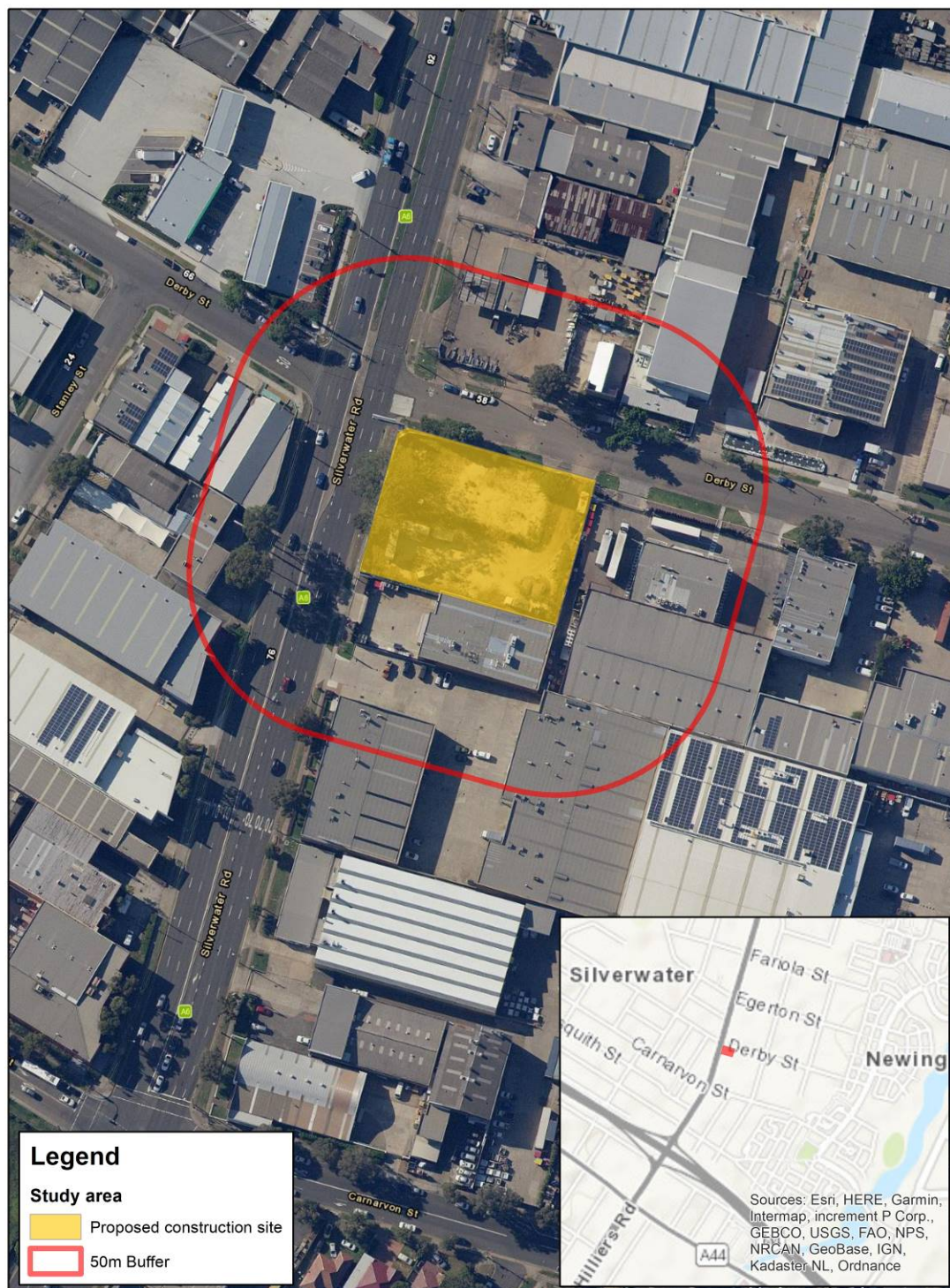
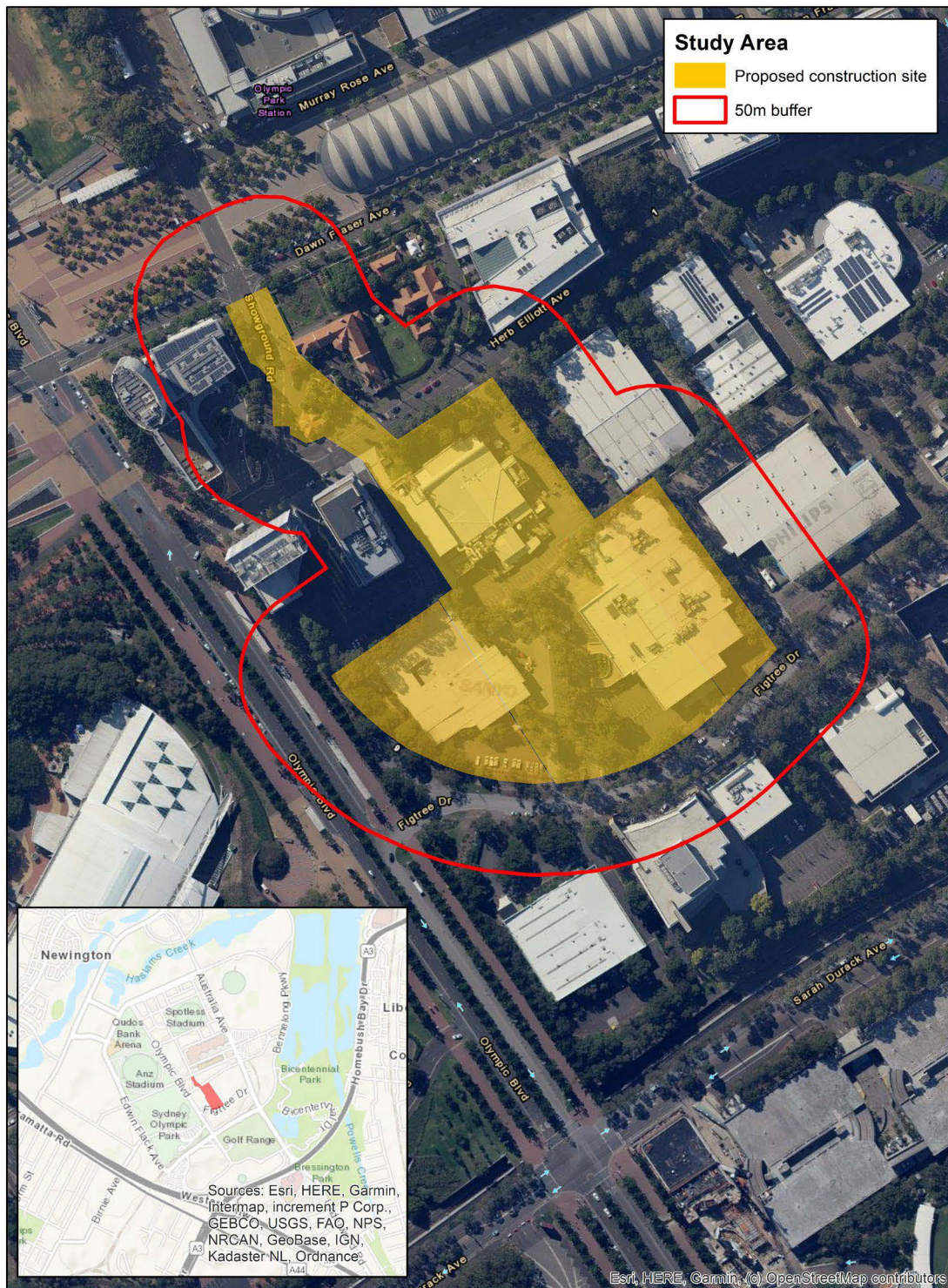


Figure 5: Silverwater services facility construction site study area map



**Sydney Olympic Park Metro
Station - Study Area**

18260 Metro West
LGA: City of Parramatta



SCALE 1:2,800
SIZE A4
DATE 5/12/2019

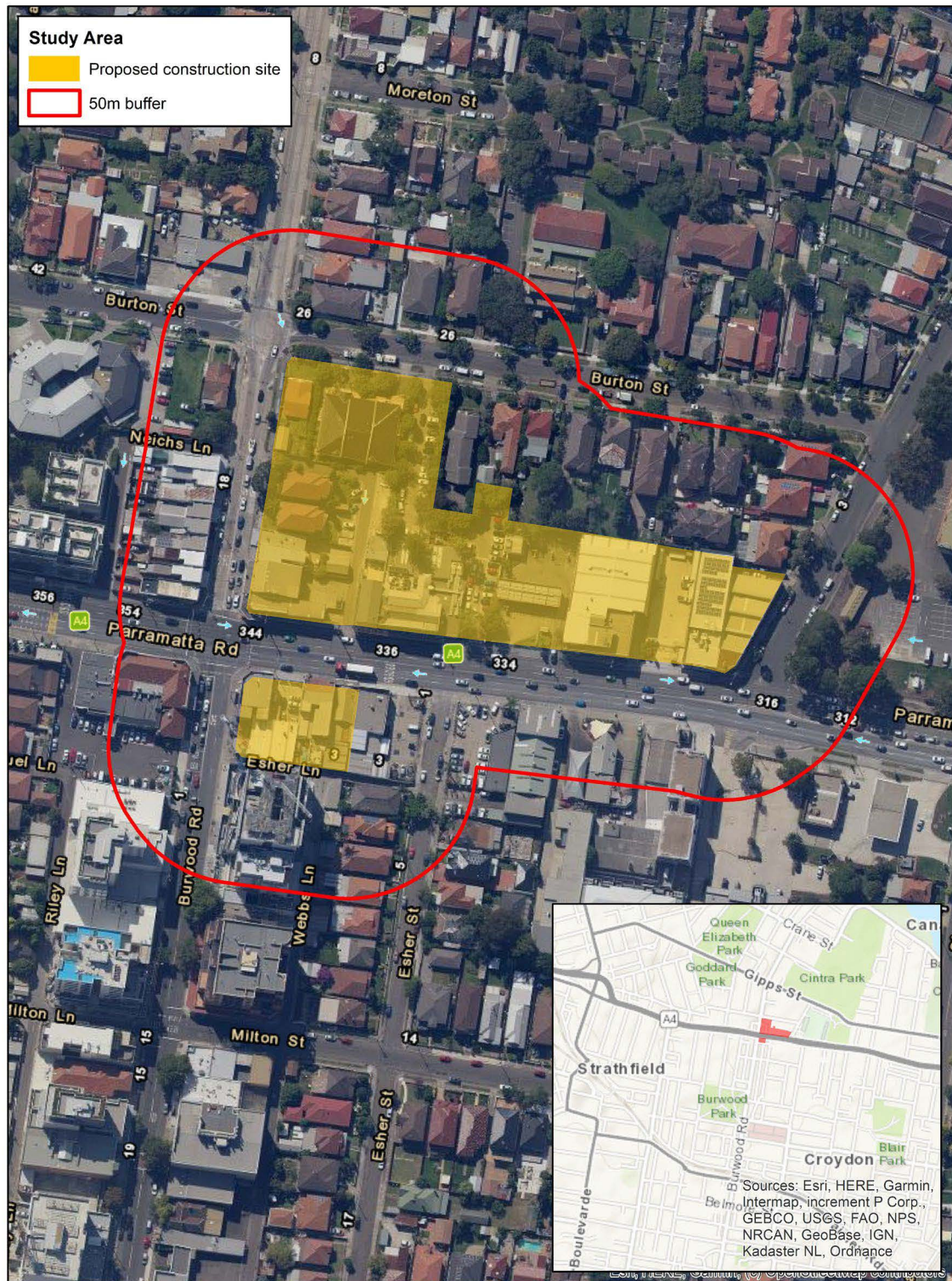
0 60 120 m



Figure 6: Sydney Olympic Park metro station construction site study area map



Figure 7: North Strathfield metro station construction site study area map



Burwood North Station
Study Area
18260 Metro West
LGA: City of Canada Bay and Burwood

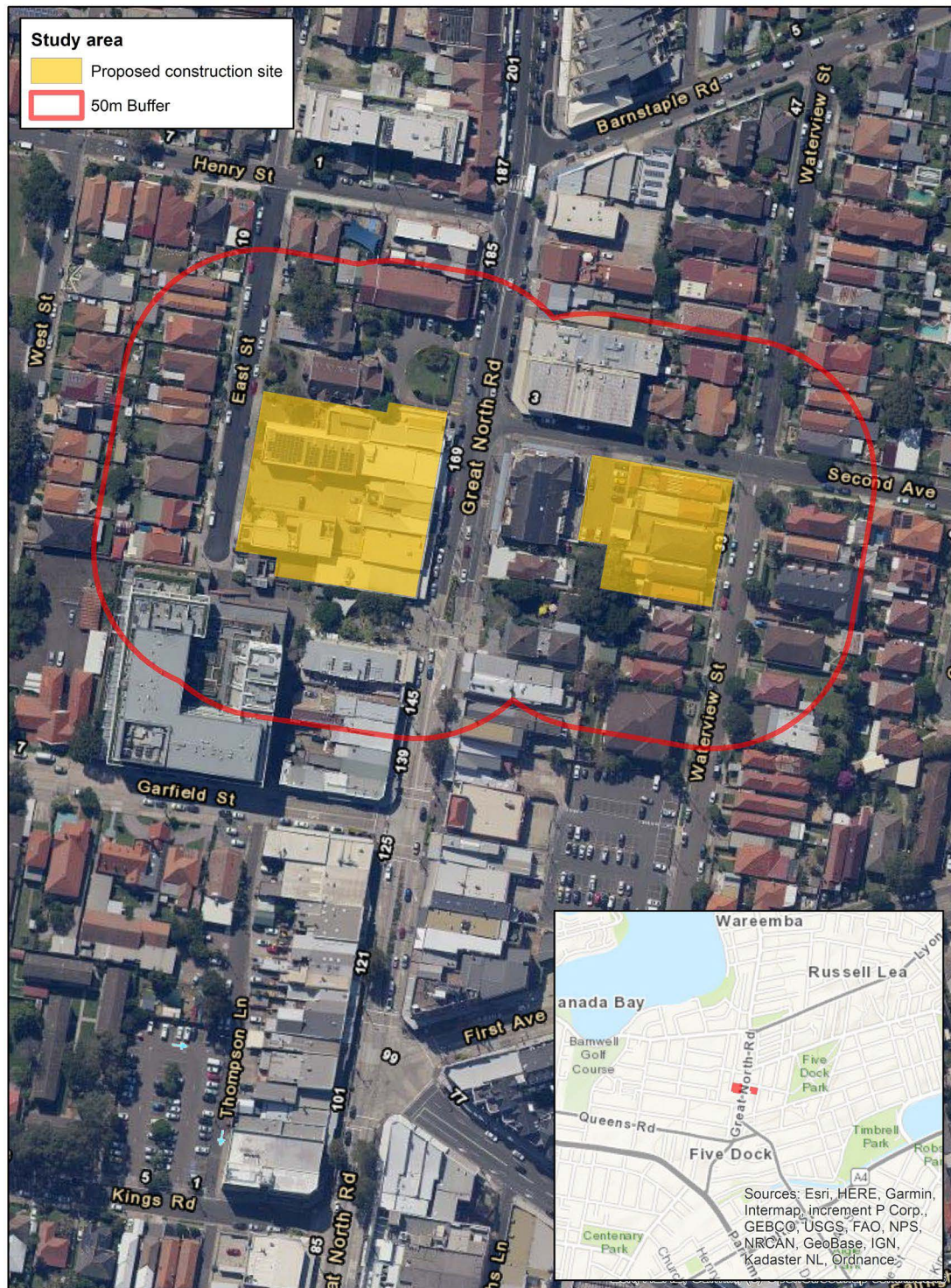


SCALE 1:2,000
SIZE A4
DATE 5/12/2019

0 50 100 m



Figure 8: Burwood North Station construction site study area map



Five Dock Station
Study Area
18260 Metro West
LGA: City of Canada Bay

SCALE 1:1,800
SIZE A4
DATE 5/12/2019

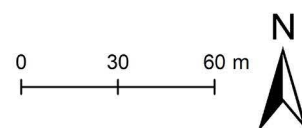


Figure 9: Five Dock Station construction site study area map



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The Bays Station
Study Area
18260 Metro West
LGA: Inner West

SCALE 1:3,000

SIZE A4

DATE 26/09/2019

0 50 100 m



Figure 10: The Bays Station construction site study area map

3.2 Identification of heritage listed items

A heritage register search was carried out in April 2019. Heritage listed items within the study area of each site were identified through a search of relevant state and federal statutory and non-statutory heritage registers:

- World Heritage List
- Commonwealth Heritage List
- National Heritage List
- State Heritage Register
- State Significant Precincts SEPP – Sydney Olympic Park site
- *Sydney Regional Environmental Plan No 26 – City West*
- *Sydney Regional Environmental Plan No 24 – Homebush Bay Area*
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*
- Holroyd LEP 2011
- Parramatta LEP 2011
- Auburn LEP 2010
- Canada Bay LEP 2013
- Burwood LEP 2012
- Ashfield LEP 2013
- Leichardt LEP 2013
- Section 170 Heritage and Conservation Registers for Sydney Water, Roads and Maritime, Railcorp, University of Western Sydney, Port Authority of NSW, Department of Health, NSW Police Service
- NSW State Heritage Inventory database

Items listed on these registers have been previously assessed against the NSW Heritage Assessment guidelines. Statements of heritage significance, based on the NSW Heritage Assessment guidelines, as they appear in relevant heritage inventory sheets and documents, are provided throughout this assessment.

A search of nominated heritage places for the World Heritage List, National Heritage List, Commonwealth Heritage List and State Heritage register was undertaken in May 2019. No nominated heritage places or items are located within the study area.

Where relevant Conservation Management Plans (CMP's) and other heritage management documents (such as the Parramatta Historical Archaeological Landscape Management Strategy, or PHALMS) (GML November 2000) and guidelines have been used to provide additional information regarding heritage significance. Where used, these have been cited.

3.3 Identification of potential unlisted heritage items

This assessment involves a preliminary assessment of potential unlisted heritage items that are located within the construction sites, which would be directly impacted by Stage 1. Interior access to potential unlisted heritage items was not possible during the assessment as only publicly accessible areas were surveyed.

3.4 Significance assessments

3.4.1 NSW heritage assessment criteria

Determining the significance of heritage items or a potential archaeological resource is undertaken by utilising a system of assessment centred on *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* (Burra Charter) by the International Council on Monuments and Sites (ICOMOS). The principles of the Burra Charter are relevant to the assessment, conservation and management of sites and relics. The assessment of heritage significance is outlined through legislation in the Heritage Act and implemented through the *NSW Heritage Manual* and the *Archaeological Assessment Guidelines* (NSW Heritage Office and NSW Department of Urban Affairs and Planning 1996).³

If an item meets one of the seven heritage criteria, and retains the integrity of its key attributes, it can be considered to have heritage significance. The significance of an item or potential archaeological site can then be assessed as being of local or state significance. If a potential archaeological resource does not reach the local or state significance threshold, then it is not classified as a relic under the Heritage Act.

'State heritage significance', in relation to a place, building, work, relic, moveable 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.

'Local heritage significance', in relation to a place, building, work, relic, moveable object or precinct, means significance to an area in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.⁴

The overall aim of assessing archaeological significance is to identify whether an archaeological resource, deposit, site or feature is of cultural value. The assessment will result in a succinct statement of heritage significance that summarises the values of the place, site, resource, deposit or feature.

The heritage significance assessment criteria were taken into consideration during the preparation of the built heritage assessment (refer to Section 6.0) and the non-Aboriginal archaeological impact assessment (refer to Section 7.0). In Section 6.0, built heritage items are listed along with their State Heritage Inventory (SHI) Statements of Significance which were written based on the heritage significance assessment criteria. In addition, potential unlisted heritage items were assessed for significance using the criteria. Similarly, Section 7.0 takes into consideration the criteria when assessing significance of potential archaeological remains. Each listed or unlisted potential heritage item, or potential archaeological remain is assessed against the seven criteria outlined in Table 5.

³ Heritage Office and Department of Urban Affairs and Planning 1996. *NSW Heritage Manual*; 25-27

⁴ This section is an extract based on the Heritage Office Assessing Significance for Historical Archaeological Sites and Relics 2009:6.

The heritage significance assessment criteria are as follows:

Table 5: NSW heritage assessment criteria

Criteria	Description
A – Historical significance	An item is important in the course or pattern of the local area or states cultural or natural history.
B – Associative significance	An item has strong or special associations with the life or works of a person, or group of persons, of importance in the local area's or State's cultural or natural history.
C – Aesthetic significance	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area or state.
D – Social significance	An item has strong or special association with a particular community or cultural group in the local area or state for social, cultural or spiritual reasons.
E – Research potential	An item has potential to yield information that will contribute to an understanding of the local area's or State's cultural or natural history.
F – Rarity	An item possesses uncommon, rare or endangered aspects of the local area's or State's cultural or natural history.
G - Representativeness	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places of cultural or natural environments (or the cultural or natural history of the local area or state).

3.5 Heritage impact assessment

This heritage impact assessment has been prepared using the *Statement of Heritage Impact* (NSW Heritage Office 2002) guideline, contained within the *NSW Heritage Manual*.

Impacts on heritage are identified as either:

- Direct impacts, resulting in the demolition or alteration of fabric of heritage significance or significant archaeological remains
- Indirect impacts, resulting in changes to the setting or curtilage of heritage items or places, historic streetscapes and landscapes, visual amenity or views
- Potential direct impact, resulting in impacts from vibration, subsidence, architectural noise treatment and demolition of adjoining structures.

Once levels of all three types of impacts are assessed, adverse and positive impacts to aspects of significance are balanced to assess an overall level of impact to the heritage significance of the listed item as a result of Stage 1. Where impacts to heritage significance are assessed as major, discussion is provided on whether the item would continue to meet the threshold of significance necessary for heritage listing.

From a heritage perspective, impacts are only acceptable if sufficient justification is provided, and options which would avoid harm have been explored and discounted. Information on options assessment and justification is provided in Section 4.0. Additional information on how the design was

developed is provided in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement.

Stage 1 works include both permanent and temporary impacts to heritage. In particular, these impacts are assessed in Section 6.0 and Section 7.0 of this report. Permanent impacts may include the removal of features including structures, whilst temporary impacts may be the installation of acoustic sheds which would eventually be removed. Unless otherwise stated, Stage 1 impacts to heritage are assumed to be permanent.

Specific terminology and corresponding definitions are used in this assessment to consistently identify the magnitude of Stage 1's direct, indirect or potentially direct impacts on heritage items or archaeological remains. The terminology and definitions are based on those contained in guidelines produced by the ICOMOS⁵ and are shown in Table 6. It is assumed that all direct and potential direct impacts are a result of Stage 1. Operational impacts, except for permanent road adjustments at Westmead and Clyde, are not assessed in Stage 1.

Table 6: Terminology for assessing the magnitude of heritage impact

Magnitude	Definition
Major	<p>Actions that would have a long-term and substantial impact on the significance of a heritage item. Actions that would remove key historic building elements, key historic landscape features, or significant archaeological materials, thereby resulting in a change of historic character, or altering of a historical resource.</p> <p>These actions cannot be fully mitigated.</p>
Moderate	<p>This would include actions involving the modification of a heritage item, including altering the setting of a heritage item or landscape, partially removing archaeological resources, or the alteration of significant elements of fabric from historic structures.</p> <p>The impacts arising from such actions may be able to be partially mitigated.</p>
Minor	<p>Actions that would result in the slight alteration of heritage buildings, archaeological resources, or the setting of an historical item.</p> <p>The impacts arising from such actions can usually be mitigated.</p>
Negligible	<p>Actions that would result in very minor changes to heritage items.</p>
Neutral	<p>Actions that would have no heritage impact.</p>

3.5.1 Assessment of visual impacts

Heritage items that fall within the study area (encompassing the 50 metre buffer zone) have been assessed for potential visual impacts. In order to assess visual impact on heritage significance, sight-lines from the heritage item to Stage 1 works have been established. Both the views *towards* the heritage item (whether Stage 1 would impair views of the item's significant visual characteristics) and views *away* from the item (whether Stage 1 would impair views of the heritage-significant surroundings or character of the item) will be assessed.

3.5.2 Power supply routes

Stage 1 works require the introduction of new power supply routes at Westmead, Parramatta, Clyde and The Bays. Section 6.12 provides a review of those listed items which the power supply route

⁵ Including the document *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*, ICOMOS, January 2011.

would pass directly through heritage curtilage or may be impacted by the power supply route work. It is assumed that the power supply routes would be located within the road corridor.

Assessments of archaeological significance provided are preliminary and are based on assessments of station sites prepared for this project and the results of other investigations. More detailed consideration of impacts would be included in the relevant archaeological research designs for the project.

3.5.3 Assessment of settlement impacts

Ground excavation for Stage 1 has the potential to cause ground movement caused by the redistribution of the stresses within the ground or groundwater drawdown. Section 6.13 provides the potential heritage impact and magnitude of settlement to heritage items within or within close proximity to the proposed construction sites. This assessment has excluded heritage items which have been assessed as having a settlement risk of below Risk Level 2 (slight).

3.5.4 Assessment of vibration impacts

Vibration arising from construction or excavation work has the potential to impact on the fabric of heritage items, potentially causing subsidence, or affecting structural integrity.

In locations where heritage items would be located adjacent to demolition, construction or excavation works, an assessment of potential direct impact through vibration has been undertaken.

A conservative vibration damage screening level of 7.5 millimetres per second peak particle velocity has been adopted for the assessment. This screening level has been established with reference to the minor cosmetic damage criteria in *British Standard BS 7385:2 – 1993*. The vibration levels specified in this standard are designed to minimise the risk of threshold or cosmetic surface cracks and are set well below the levels that have potential to cause damage to the main structure.

The recommended screening level of 7.5 millimetres per second peak particle velocity is also applicable to heritage items unless it is known that the item is structurally unsound – in which case, a lower screening level may be applicable. As such, White Bay Power Station has been provided with a 2.5 millimetres per second peak particle velocity as it is known to be structurally unsound.

During main tunnelling works, it is anticipated that ground-borne vibration associated with tunnel boring machine use would be much lower than the 7.5 millimetres per second peak particle velocity screening level. As such the study area for assessment of potential impacts to heritage items does not extend to areas above the tunnel alignment that are outside the nominated study area for each construction site.

Vibration impacts to heritage items have been assessed based on a review of modelled vibration levels generated as part of the assessment in Technical Paper 2.

Potential vibration impacts have been assessed by applying the following methodology:

- Where vibration levels are predicted to be below the relevant vibration screening level, potential vibration impacts are considered negligible and no further assessment of vibration-related impacts on that structure would be required

- Where vibration levels are predicted to be at or above the vibration screening level, further investigation would be undertaken to ensure vibration levels remain below appropriate limits for that structure, including:
 - A more detailed analysis of the building structure and potential vibration characteristics would be completed to determine the applicable safe vibration level or required changes to the construction method
 - Attended vibration monitoring would be undertaken from the structure's closest point to the vibration source
- Where the building is a heritage building, and the predicted vibration level is above the vibration screening level, a more detailed assessment of the structure would be undertaken that specifically considers the heritage values of the structure and sensitive heritage fabric would be identified in consultation with a heritage specialist to ensure it is adequately monitored and managed.

3.5.5 Assessment of cumulative impacts

A cumulative impact assessment for other potential impacts to non-Aboriginal heritage has been provided within Section 8.0. Cumulative impacts represent the incremental loss of – or modifications to – a historical or environmental resource over time. These can result from individually minor, but collectively significant, actions and must therefore be considered in the wider developmental context in order to minimise impacts.

In order to address the cumulative impacts of Stage 1, major infrastructure and commercial developments within the construction site footprint, or those projects which would cause heritage impact to items considered within this assessment, were assessed for cumulative impact. Projects which would not impact heritage, those outside the curtilage of the construction sites or those which do not have publicly accessible construction information have not been included within the cumulative impact assessment.

3.6 Non-Aboriginal archaeological assessment

3.6.1 Introduction

An overview approach to the identification of potential archaeological resources has been adopted in this heritage impact assessment. Historical archaeological potential is defined as the potential of a site to contain significant archaeological remains, including works or relics as identified in the Heritage Act. The assessment of historical archaeological potential is based on the identification of former land uses and evaluating whether subsequent actions (either natural or human) may have impacted on archaeological evidence for these former land uses. Knowledge of previous archaeological investigations, understanding of the types of archaeological remains likely to be associated with various land uses, and the results of site inspection are also taken into consideration when evaluating the potential of an area to contain archaeological remains.

The assessment of archaeological potential contained in this heritage impact assessment is based on analysis of historical plans and readily available secondary sources, such as archaeological zoning plans and archaeological investigations undertaken in the vicinity of the study area.

Assessments of significance are preliminary in nature and where possible significance has been assessed against the NSW Heritage Assessment Criteria. The assessment is informed by the NSW

Heritage Division's *Assessing Significance for Historical Archaeological Sites and Relics* (NSW Heritage Division 2009).

An archaeological test excavation was not undertaken as part of this assessment, as areas of potential for State significant archaeology, particularly Parramatta metro station site are currently inaccessible beneath standing structures.

3.6.2 Research potential and archaeological significance

In 1984, Bickford and Sullivan examined the concept and assessment of archaeological research potential; that is, the extent to which archaeological resources can address research questions. They developed three questions which can be used to assess the research potential of an archaeological site:

- Can the site contribute knowledge that no other resource can?
- Can the site contribute knowledge that no other site can?
- Is this knowledge relevant to:
 - General questions about human history?
 - Other substantive questions relating to Australian history?
 - Other major research questions?

In the 2009 guidelines *Assessing Significance for Historical Archaeological Sites and 'Relics'*, the NSW Heritage Division has since provided a broader approach to assessing the archaeological significance of sites, which includes consideration of a site's intactness, rarity, representativeness, and whether many similar sites have already been recorded, as well as other factors. This document acknowledges the difficulty of assessing the significance of potential subsurface remains, because the assessment must rely on predicted rather than known attributes.⁶

A site can have high potential for archaeological remains, and yet still be of low research potential if those remains are unlikely to provide significant or useful information.

3.7 Limitations and constraints

This report provides an assessment of non-Aboriginal (historical) built heritage and potential archaeological resources only and does not provide a review of the potential for Aboriginal archaeological evidence in the area. An assessment of Aboriginal cultural heritage that may be impacted by construction works is provided in a Technical Paper 4: Aboriginal Cultural Heritage Assessment Report (ACHAR) (Artefact 2019).

The non-Aboriginal archaeological assessment in this report provides an overview of predicted archaeological remains and their significance, as well as an assessment of potential impacts that would occur from Stage 1. This assessment does not provide detailed archaeological management or archaeological research designs for these impacts. Archaeological research designs and archaeological excavation methodologies would be prepared in subsequent technical reports in future stages to manage archaeological resources identified in this report.

Only those portions of the study area subject to proposed surface works and that are publicly accessible were surveyed during preparation of this heritage impact assessment. An assessment of settlement, vibration and power supply routes is a desktop assessment only.

⁶ NSW Heritage Branch 2009

As noted above, during main tunnelling works, it is anticipated that ground-borne vibration associated with tunnel boring machine use would be much lower than the 7.5 millimetres per second peak particle velocity screening level (the threshold at which cosmetic damage may occur). As such the study area for assessment of potential impacts to heritage items generally does not extend to areas above the tunnel alignment that are outside the nominated study area for each construction site.

4.0 PROJECT DESCRIPTION

Stage 1 of Sydney Metro West (Stage 1) would involve the major civil construction work between Westmead and The Bays, including:

- Enabling works
- Tunnel excavation including tunnel support activities
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays
- Shaft excavation for services facilities at Rosehill and Silverwater
- Civil works for the stabling and maintenance facility at Clyde including earthworks and structures for crossings of A'Becketts Creek and Duck Creek
- A concrete segment facility for use during construction located at the Clyde stabling and maintenance facility construction site
- Excavation of a tunnel dive structure and associated tunnels at Rosehill to support a connection between the stabling and maintenance facility and the mainline metro tunnels.

4.1 General construction overview

The following section describes common construction methodologies and elements of Stage 1. The following discussion of construction elements is focussed on those construction activities that may result in impacts to heritage significant structures or archaeological remains. Complete details of demolition and construction methodologies for Stage 1 are provided in the Environmental Impact Statement.

4.1.1 Demolition and site establishment

Buildings and structures within the construction site would be demolished and the construction site would be cleared prior to the commencement of excavation works (except where a building is to be retained). Building demolition would be conducted in stages at each construction site by licensed demolition contractors. Hoarding and protection would be established prior to demolition activities commencing. Utility services within buildings to be removed would be isolated prior to demolition. Soft stripping of internal building materials would be conducted prior to the removal of building structure with machine plant with a top-down approach.

Existing services within each construction site would be diverted where necessary and protected, with new water and power supply provided for construction activities. Vegetation and hardstand surfaces not designated for retention within a construction site would be removed during site establishment. 'Rippable' materials (such as fills, residual soils and weathered rocks) would be excavated to a variable depth across parts of the construction sites.

4.1.2 Acoustic sheds

Acoustic sheds are proposed at a number of construction sites although alternative means of achieving the same noise outcome, such as acoustic panels over the station excavations, may be adopted. The size of acoustic sheds would vary across construction sites and would range up to about 15 metres in height, with the exception of the acoustic shed at the Westmead metro station

construction site. Due to topography at this location, the eastern façade of the shed would range up to 25 metres.

4.1.3 Tunnelling excavation

Tunnel excavation is likely to be undertaken using tunnel boring machines with roadheaders used for caverns and stub tunnels.

Tunnelling would be supported by launch and retrieval support sites at the following construction sites: Westmead metro station construction site, Sydney Olympic Park metro station construction site and The Bays Station construction site.

4.1.4 Power supply routes

The majority of the power supply routes would be constructed by trenching within the existing road reserve. Where major roads are crossed by the route, alternative construction methods would be used such as under boring in order to avoid impacts to the road network. Alternative construction methods such as under boring may also be used to avoid other constraints such as services or areas of environmental sensitivity.

Trenches are expected to be around one metre wide and 1.5 to two metres deep. It is therefore likely any subsurface archaeological remains to this depth below the road treatment and pavement would be impacted.

4.2 Construction site methodologies

4.2.1 Westmead metro station construction site

The proposed Westmead metro station would be constructed as a cut-and-cover excavation, located in the block bounded by Hassall Street, Bailey Street and Hawkesbury Road, and extending across Alexandra Avenue and partly within the rail corridor, Westmead. The majority of the site contains residential and commercial buildings, but also extends across Alexandra Avenue and the adjoining rail corridor.

The Westmead metro station construction site is illustrated in Figure 11. All existing structures would be removed from the site in order to clear the area for future excavation and construction. The excavation depth of the station would be around 32 metres in depth. An acoustic shed would be constructed at the construction site.

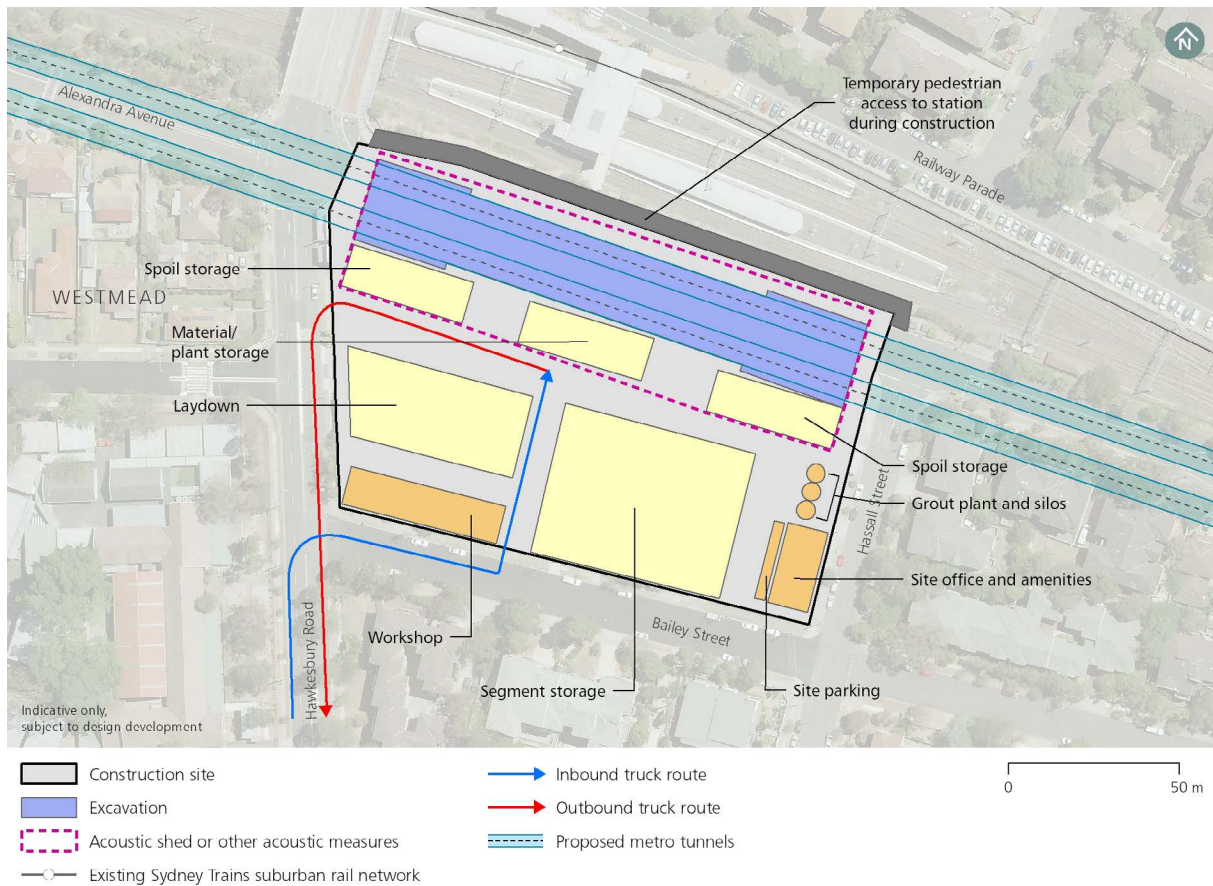


Figure 11: Westmead metro station construction site layout (indicative)

4.2.2 Parramatta metro station construction site

The Parramatta metro station would be constructed as a cut-and-cover excavation, 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 (Horwood Place carpark).

The Parramatta metro station construction site is illustrated in Figure 12. All existing structures, excepting 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.

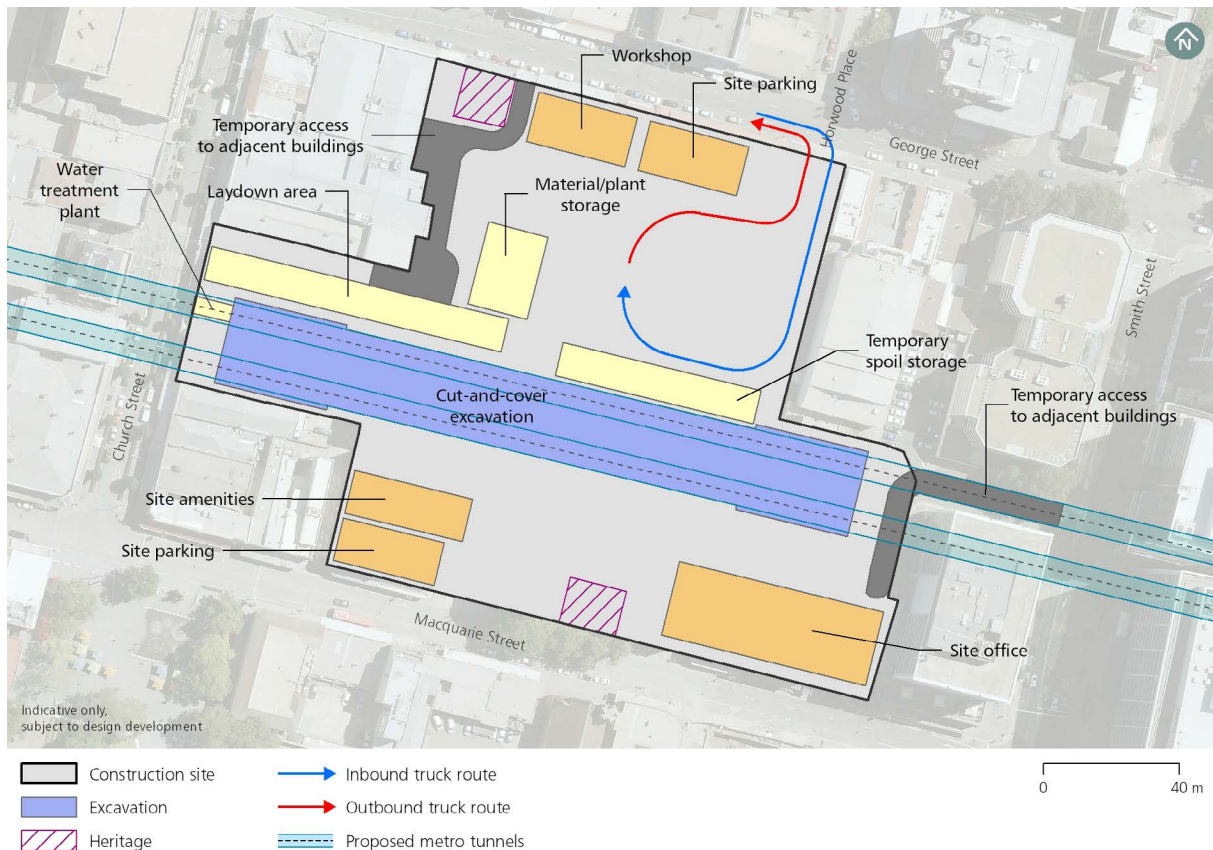


Figure 12: Parramatta metro station construction site layout

4.2.3 Clyde stabling and maintenance facility construction site

The Clyde stabling and maintenance facility would be constructed at ground level, at a site bounded by James Ruse Drive, Unwin Street, Shirley Street and the M4 Motorway in Clyde. This area is currently occupied by a variety of industrial facilities and the Sydney Speedway facility. Works would involve the removal of all structures across the site to allow the construction of the proposed stabling and maintenance facility, with the exception of the façade of the RTA Depot 1B and 5 Unwin Street, Rosehill. The construction site would also include the excavation and construction of the dive structure and tunnel portal and a services facility shaft at Rosehill. The construction site and areas of excavation are illustrated in Figure 13.

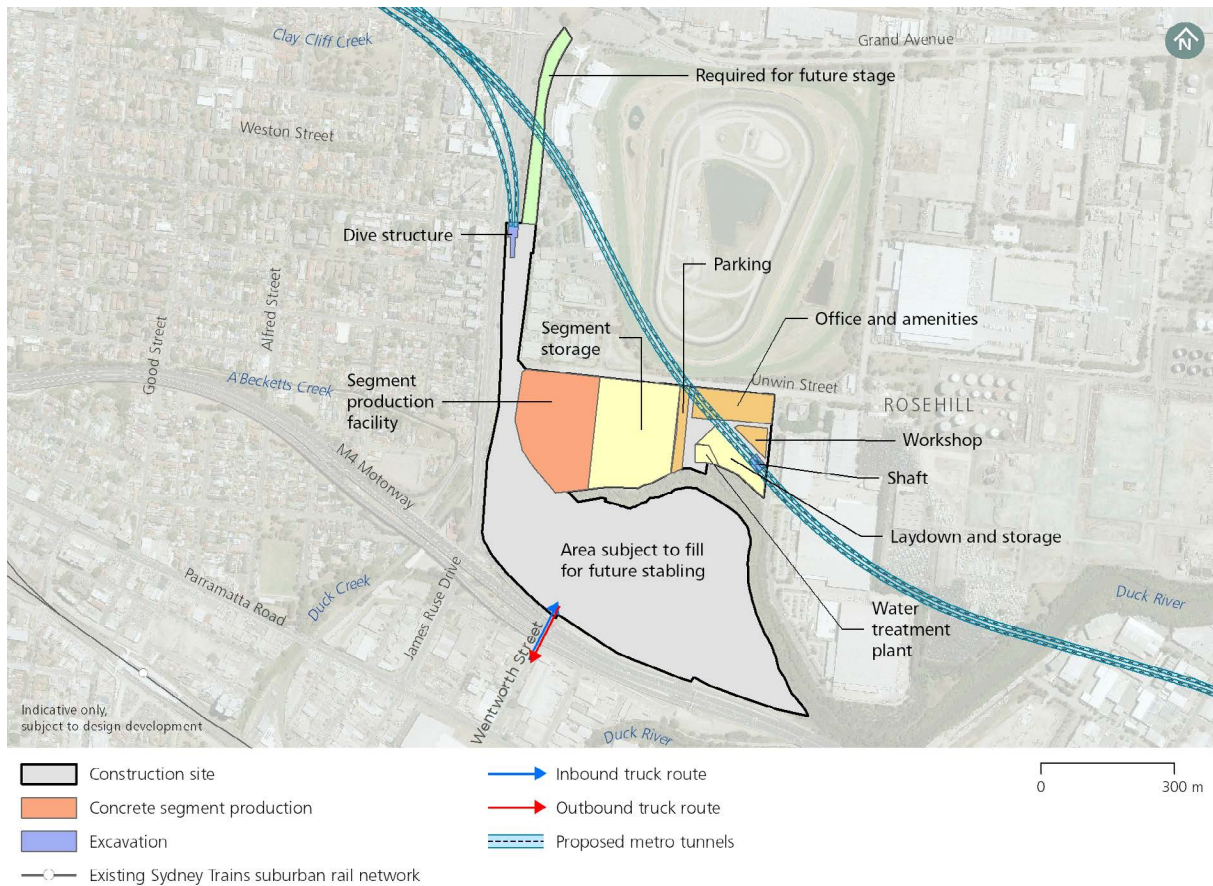


Figure 13: Clyde stabling and maintenance facility construction site layout

4.2.4 Silverwater services facility construction site

The Silverwater services facility would be constructed as a vertical shaft excavation, located on the corner of Silverwater Road and Derby Street in Silverwater. The site is currently a vacant lot. The construction site and area of excavation is illustrated in Figure 14.



Figure 14: Silverwater services facility construction site layout

4.2.5 Sydney Olympic Park metro station construction site

The Sydney Olympic Park metro station would be constructed as a cut-and-cover excavation, located between Herb Elliott Avenue and Figtree Drive in Sydney Olympic Park with a portion extending through to Dawn Fraser Avenue. This site currently contains commercial buildings.

The Sydney Olympic Park metro station construction site is illustrated in Figure 15. All existing structures, except for the heritage-listed garden rotunda in the northern portion of the construction site, would be removed from the site in order to clear the area for future excavation work and construction. The final excavation depth of this station would be around 25 metres. Acoustic sheds would be constructed at the Sydney Olympic Park metro station construction site.

Sydney Metro is currently investigating alternate construction options to cut and cover in the vicinity of Herb Elliot Avenue.

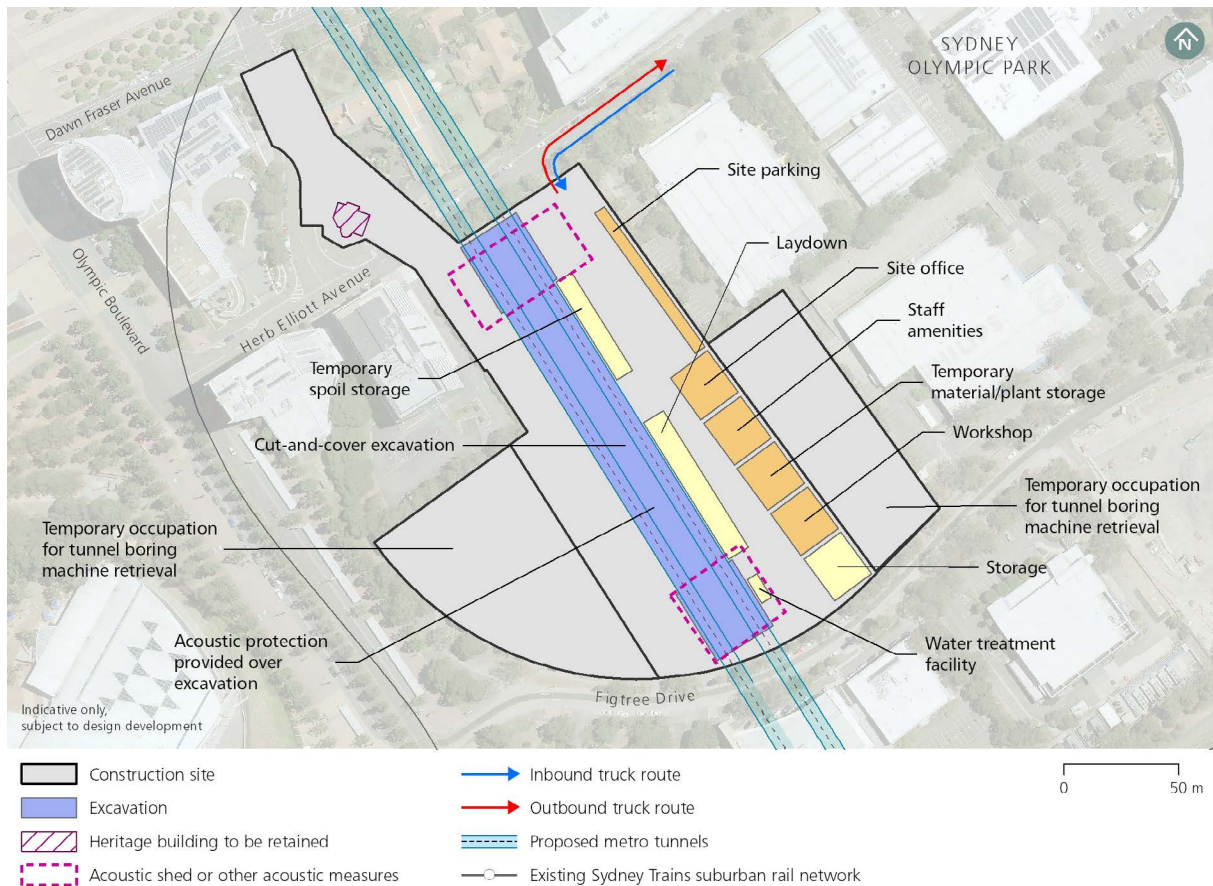


Figure 15: Sydney Olympic Park metro station construction site layout

4.2.6 North Strathfield metro station construction site

Construction of the proposed North Strathfield metro station would require two sites:

- The North Strathfield metro station northern construction site would be located between the existing North Strathfield Station and Queen Street, bounded by Pomeroy Street to the north and the pedestrian entrance to the existing North Strathfield Station to the south. The site predominately comprises vacant land within the existing rail corridor, the northbound lane of Queen Street, and gardens at the eastern pedestrian entry to North Strathfield Station
- The North Strathfield metro station southern construction site would occupy land between the existing North Strathfield Station and Queen Street, bounded by Shipley Avenue to the south and the pedestrian entrance to the existing North Strathfield Station to the north. The site is currently used as a private car park and station facilities site for North Strathfield Station. This site would be used for site offices, workers amenities and parking only.

The North Strathfield metro station would be constructed as a cut-and-cover excavation

The North Strathfield metro station construction site is illustrated in Figure 16. The final excavation depth of this station would be around 18 metres in depth.



Figure 16: North Strathfield metro station construction site layout

4.2.7 Burwood North Station construction site

Construction of the proposed Burwood North Station would require two sites:

- The Burwood North Station northern construction site would be located on Parramatta Road between Burwood Road and Loftus Street. This site currently contains commercial buildings and residential properties fronting Burwood Road and Burton Street
- The Burwood North Station southern construction site would be located in an area bound by Burwood Road, Parramatta Road, Esher Lane and commercial properties west of Esher Street. The site currently contains commercial buildings.

The Burwood North Station would be constructed as a cut-and-cover excavation on the Burwood North Station northern construction site. A shaft would be excavated on the Burwood North Station southern construction site for the southern station entrance, which would be connected to the station excavation via a mined adit.

The Burwood North Station construction site is illustrated in Figure 17. All existing structures would be removed from the site in order to clear the area for future excavation work and construction. The final excavation depth of this station would be around 32 metres in depth. Acoustic sheds would be constructed at the Burwood North Station construction sites.

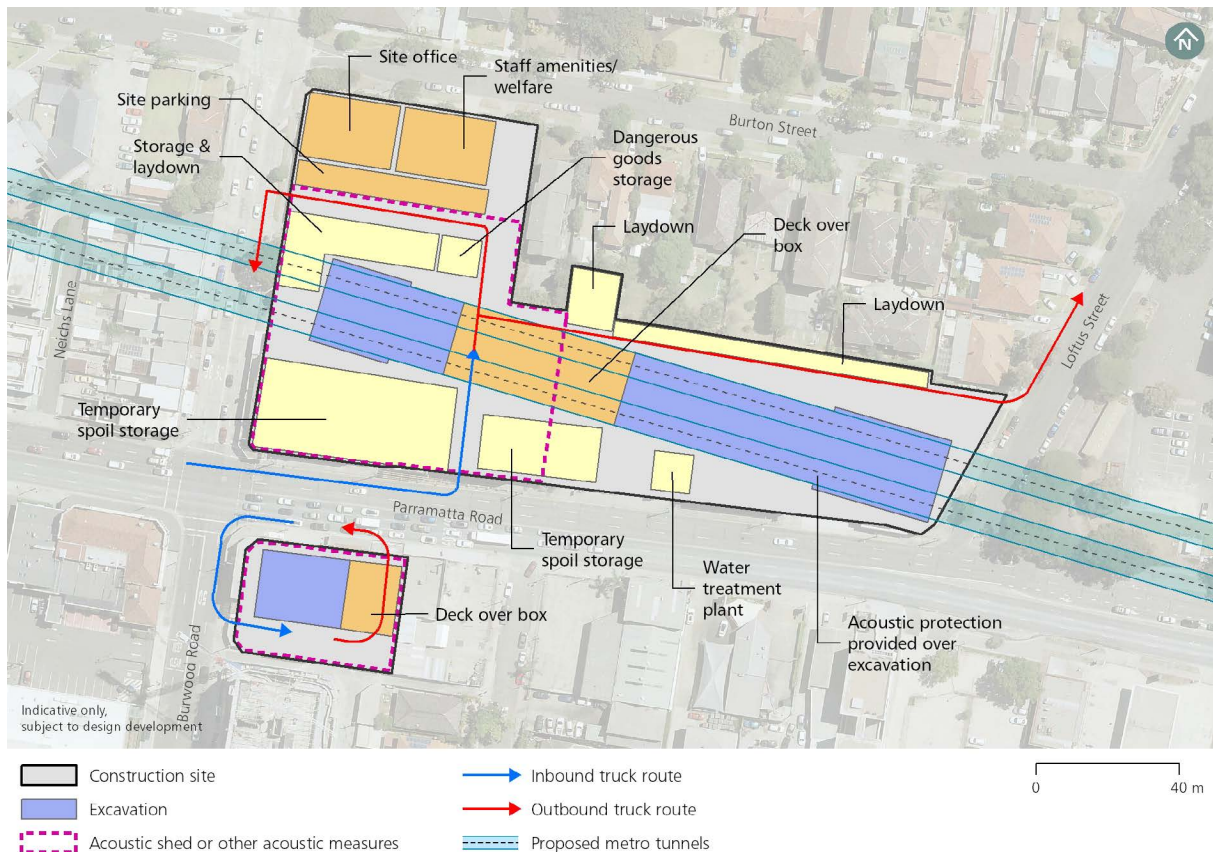


Figure 17: Burwood North Station construction site layout

4.2.8 Five Dock Station construction site

Construction of the proposed Five Dock Station would require two sites:

- The Five Dock Station western construction site would be located between Great North Road and East Street, to the north of Fred Kelly Place and south of St Albans Anglican Church. This site currently contains commercial buildings
- The Five Dock Station eastern site would occupy a site bounded by Second Avenue and Waterview Street. The site is currently occupied by residential buildings and a car park.

The Five Dock Station would be constructed as a mined station with cut-and-cover shafts excavated at each construction site.

The Five Dock Station construction site is illustrated in Figure 18. All existing structures would be removed from the site in order to clear the area for future excavation work and construction. The final excavation depth of this station would be around 30 metres in depth. Acoustic sheds would be constructed at each construction site.



Figure 18: Five Dock Station construction site layout

4.2.9 The Bays Station construction site

The Bays Station would be constructed as a cut-and-cover excavation, along the foreshore of White Bay, near to White Bay Power Station in Rozelle. The site currently contains open areas of hardstand and port with several small industrial buildings present.

The Bays Station construction site is illustrated in Figure 19. All existing structures would be removed from the site in order to clear the area for future excavation work and construction. The final excavation depth of this station would be around 32 metres in depth.

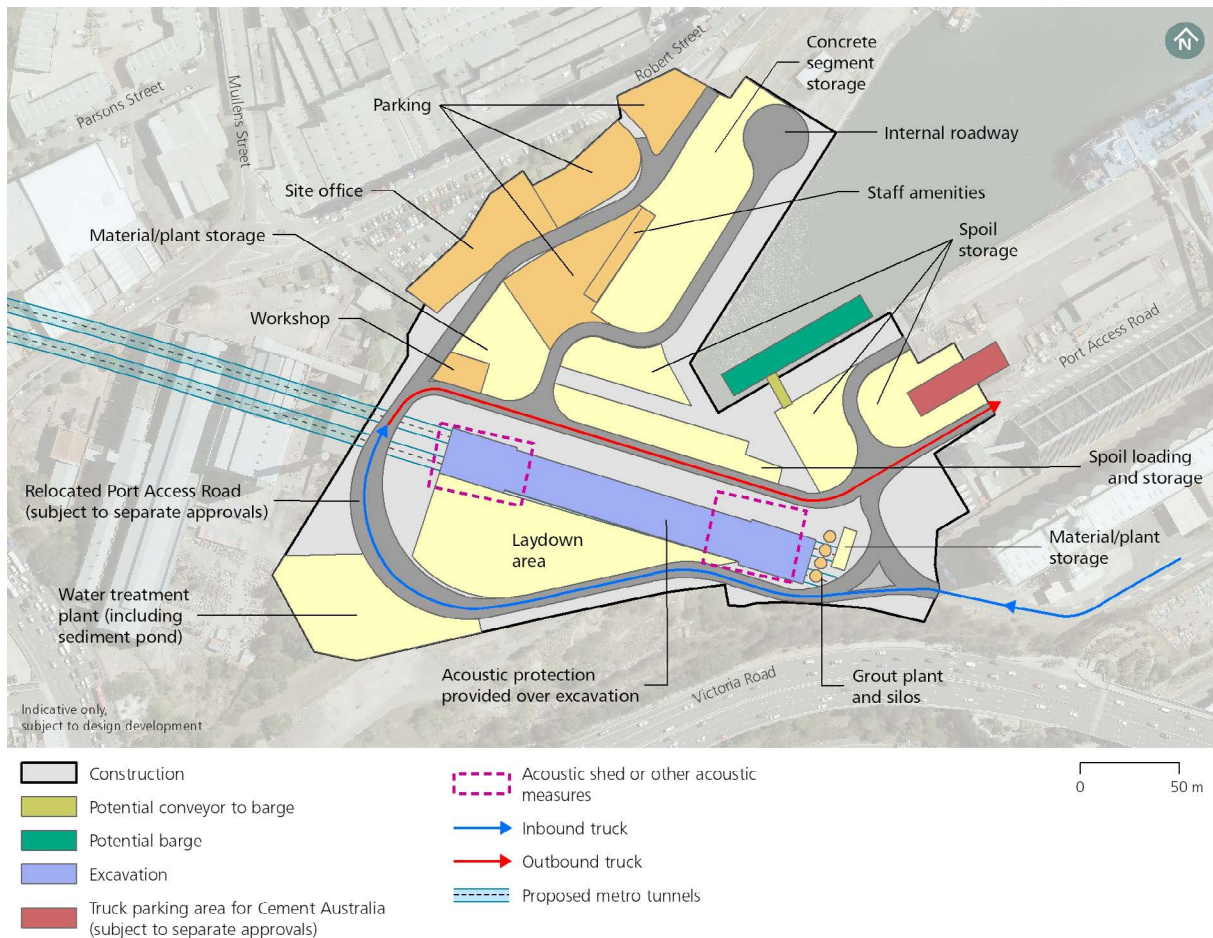


Figure 19: The Bays Station construction site layout

4.3 Design options and justification

Demand on much of Sydney's rail network is nearing capacity during the morning and evening peak periods. To ensure continued growth in productivity, cater for forecast employment and population growth, and sustain the city's liveability, Sydney's transport capacity will need to be substantially increased.

If the additional mass transit capacity offered by Sydney Metro West does not proceed, it is expected that:

- The T1 Western Line, T9 Northern Line and T2 Inner West and Leppington Line would continue to operate at or near capacity at peak times, with very limited capacity for new growth in the corridor
- The road network in the corridor would continue to operate at capacity in peak times, creating congested roads and increased travel times for motorists and bus customers
- The lack of transport connectivity at key precincts such as Sydney Olympic Park and The Bays would not be adequately addressed
- The long-term public transport capacity requirements for the projected population and employment growth between Parramatta and Sydney CBD would not be met

- Growth would more likely be accommodated on Sydney's urban fringe in areas with more limited access to public transport, which would contribute to ongoing urban sprawl and congestion. Alternatively, growth may occur in an unplanned manner within existing communities, potentially impacting local character and amenity
- There would be reduced potential for development of precincts and new housing stock
- There would be reduced productivity and international competitiveness due to congestion and reduced clustering of businesses in economic centres within the Greater Parramatta to Sydney CBD corridor.

An investigation of alternatives and options has been undertaken including investigation of:

- Regulatory, governance and better-use reforms to improve transport and land use outcomes, to cater to growing transport demand and to meet Sydney's growing population needs.
- Transport mode alternatives including further investment in road, bus and light rail as a strategic alternative to Sydney Metro West, including new motorways, suburban rail connections, bus rapid transit services, and increased ferry services.
- Rail network alternatives to improve the suburban rail network, including through the More Trains, More Services program, which includes extra rail services, new trains on the suburban network and upgraded rail infrastructure.

These alternatives have been assessed as containing the ability to compliment and support the role of Sydney Metro West but unlikely to be able to meet transport requirements as an alternative.

The design development of Stage 1 has included a focus on avoiding or minimising impact to a number of environmental considerations including non-Aboriginal heritage. This has been achieved through:

- Developing a tunnel alignment that avoids potential impacts to heritage items, in particular the World Heritage listed Old Government House within Parramatta Park
- Selecting construction sites that avoid direct impacts to State and local heritage items where possible; including the State heritage listed Roxy Cinema (Parramatta), locally listed St Alban's Church (Five Dock), and the State heritage listed White Bay Power Station (The Bays)
- Where a heritage item is within a construction site, impacts have been avoided or minimised. In Parramatta, this includes the locally heritage listed shops on George Street and Kia Ora, which would be retained and protected. In Sydney Olympic Park, the State heritage listed State Abattoirs, located in the construction site, would be retained and protected, with direct impacts limited to the gardens only.

The investigation has found that the benefits of the Sydney Metro West would include:

- Transport benefits including increased transport network capacity, reduced train crowding, increased accessibility to key centres, increased public transport network reach and use, improved travel times, improved resilience to incidents on the network, opportunities to optimise the bus network; and road user and community benefits included a reduction in car trips and reduction in environmental impacts such as air pollution, greenhouse gas emissions, and noise and water pollution

- Productivity benefits including a fostering of job growth, enhanced international competitiveness through increased accessibility to world-class precincts, and connectivity benefits
- City-shaping benefits including supporting planned growth, expanding the 30-minute cities, increased all day accessibility, reduced public infrastructure provision and household energy consumption, housing supply and affordability, social equity, and sustainability, health and amenity benefits.

The objectives of the Sydney Metro West network include to:

- Ensuring transport services are meeting the needs of customers
- Deliver outcomes that align with and support key strategic land use and transport frameworks including the Smart Cities Plan, Greater Sydney Regional Plan, Future Transport Strategy and the relevant District Plans
- Boost Sydney's international competitiveness, productivity and employment growth by supporting new and existing strategic centres
- Support future housing needs by increasing housing supply, choice and affordability
- Improve liveability and provide a catalyst for positive change by enabling urban renewal opportunities, enhancing housing supply and supporting productivity of centres
- Improve access to and resilience of the transport network through integrated land use and transport planning, including integration of Sydney Metro West with other modes
- Ensure value for money and a sustainable and deliverable solution.

5.0 HISTORICAL BACKGROUND

5.1 Introduction

The following section provides the historical context for the early development of Sydney. Historical background specific to each of the study areas has been outlined in the relevant sub-sections of Section 5.0.

5.2 Aboriginal occupation and European contact

Prior to the appropriation of their land by Europeans, Aboriginal people lived in small family or clan groups that were associated with particular territories or places. It seems that territorial boundaries were fairly fluid, although details are not known. The language group spoken across Sydney was known as Darug (Dharruk – alternate spelling). This term was used for the first time in 1900, as before the 1800s language groups or dialects were not discussed in the literature.⁷ The Darug language group is thought to have covered the area south from Port Jackson, north from Botany Bay, and west from Parramatta.⁸

The name Gadigal and its alternative spellings (Cadigal, Cadi) was used in the earliest historical records of the European settlement in Sydney to describe the Aboriginal band or clan that lived on the southern shore of Port Jackson, from South Head west to the Darling Harbour area. The term Eora is also used as a name for the Aboriginal people south of Port Jackson. The term Eora was likely a word used by the Gadigal people to refer to an Aboriginal person, rather than a reference to a clan or band in particular. However, it became a widespread term for the Aboriginal people on the southern shore of Port Jackson and is currently used by Gadigal people to refer to the central Sydney area – referred to as 'Eora Country'.⁹



Figure 20: Aboriginal activities on the shore of Port Jackson in 1824. Source: Peron and Freycinet 1824.

⁷ R. H. Mathews and Miss Mary Martha Everitt, 1900. 'The organisation, language and initiation ceremonies of the Aborigines of the south-east coast of NSW'. *Journal & Proceedings of the Royal Society of NSW*. 34:262-281; Valerie Attenbrow, 2010. *Sydney's Aboriginal Past: investigating the archaeological and historical records* (2nd ed). University of NSW Press, Sydney.

⁸ Attenbrow 2010. p 34.

⁹ Attenbrow 2010. p 22 and 35-36.

5.3 Westmead

The area that is now Westmead was originally part of the Government Domain of Government House at Parramatta (Figure 21). Convicts were sent to the site, which was subsequently cleared of trees for farming to provide food resources for the fledgling colony. The lands within Government Farm proved to be relatively fertile and agricultural pursuits were met with some success. Small sections of the land were granted to settlers over the next two decades for the purpose of establishing farms.

In 1810, the holdings previously granted to settlers were resumed by Governor Macquarie and were designated as the Government Domain, surrounding Government House. During this period, the Domain was kept as open parkland and numerous shrubberies and hedges of orange trees and wattles were planted across the grounds.¹⁰ In 1857, a bill was passed providing for the disposal of the Government Domain and large sections of land were sold as residential estates, although significant amounts of land were retained surrounding the Parramatta River as public parkland. In addition, much of the Westmead area was retained as farmland for the 'Lunatic Asylum' (Figure 23).¹¹ The name Westmead came into use when the Government Domain was first subdivided in 1859 (Figure 21).¹² The name combines the old English word 'mead', short for 'meadow' and 'west', indicating its position from Parramatta.

The Main Western Line from Sydney was constructed through Westmead in 1861, however, the suburb was not provided a station at this time. In early 1883, Westmead residents petitioned the Railways Department and by April the suburb boasted the newest station along the Main Western Line (Figure 24).

Subdivision of the Domain was completed in 1889. This included splitting off the northern and western meadows, providing the current suburbs of Northmead and Westmead. In addition, orchards were provided by the new settlers at this time.

During the twentieth century, Westmead was consolidated for residential development, particularly towards the later parts of the century. By 1943, the area had undergone further subdivision. Initially the subdivisions primarily focussed on the allotments on the east side of Hawkesbury Road. By this stage the current road alignments had been established and numerous allotments had been occupied by smaller residential developments, though some open areas remained. On the western side of Hawkesbury Road, the land remained open. An early cemetery, church and railway track had been replaced with large open paddocks, a homestead with numerous outbuildings, and a large racetrack.

By the turn of the century, Westmead had developed into its present-day state. The area to the west of Hawkesbury Road is now predominantly occupied by a series of hospital and healthcare facilities. The area to the east of Hawkesbury Road has further developed as residential, with most of the allotments occupied by larger apartment blocks. The former farmlands of the lunatic asylum, north of the rail line, have since become occupied by larger buildings associated with the Cumberland Hospital, though some more open areas remain.

¹⁰ Terry Kass, Carol Liston and John McClymont, 1996. *Parramatta: A Past Revealed*. Parramatta City Council, Parramatta. p. 92.

¹¹ Parramatta Heritage Centre, 2018. 'World-leading Westmead Hospital'. Accessed 2 July 2019, <http://arc.parracity.nsw.gov.au/blog/2018/07/20/world-leading-westmead-hospital/>

¹² Kass, 1996. p. 188.

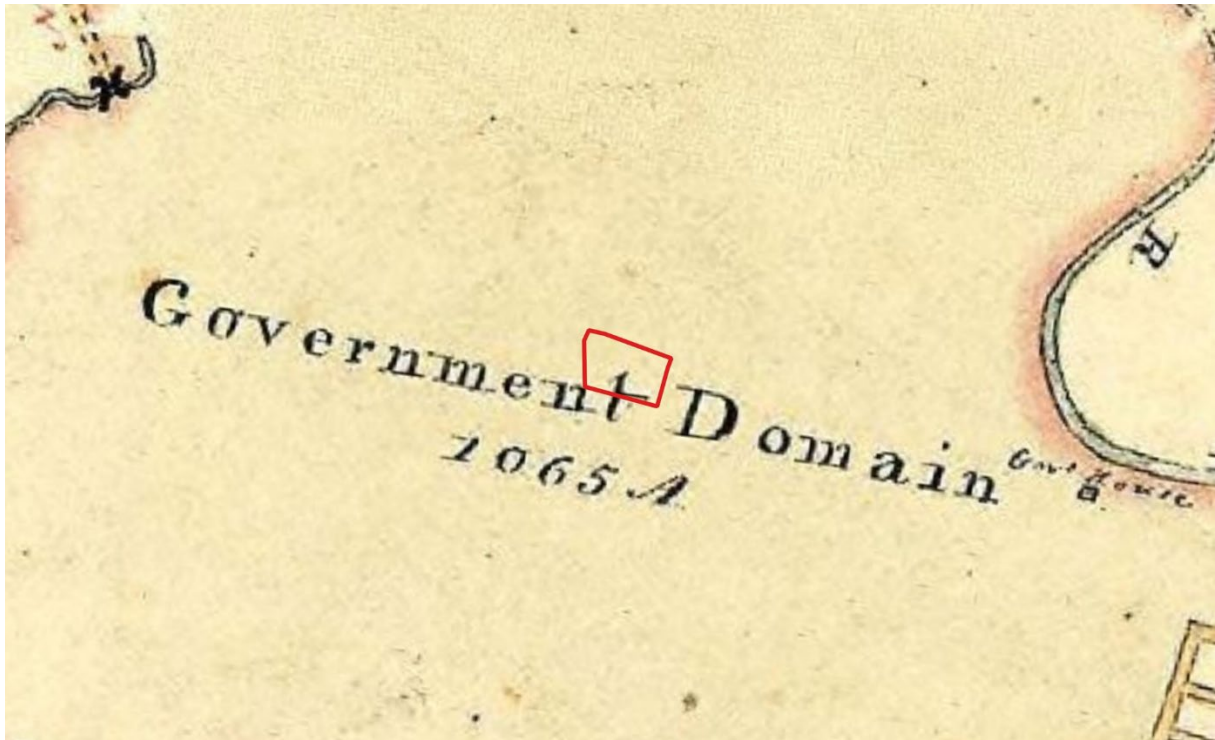


Figure 21: St John Parish map, date unknown showing the Government Domain and Government House (study area outlined in red)¹³



Figure 22: Detail of 1860 plan of Westmead showing the construction site outlined in red¹⁴

¹³ Land Registry Services, n.d. 'Parish Maps'. Accessed online: <https://hlrv.nswlrs.com.au/>

¹⁴ NSW Department of Lands, 1860. 'Plan of portions near Parramatta, in the Parish of St John being part of the Old Domain'. Accessed online: https://search.slnsw.gov.au/primo-explore/fulldisplay?docid=SLNSW_ALMA21152976300002626&context=L&vid=SLNSW&lang=en_US&tab=default_tab



Figure 23: Parish of St John map, 1909 showing 'Lunatic Asylum' farmland (hospital paddocks) (study area outlined in red)¹⁵

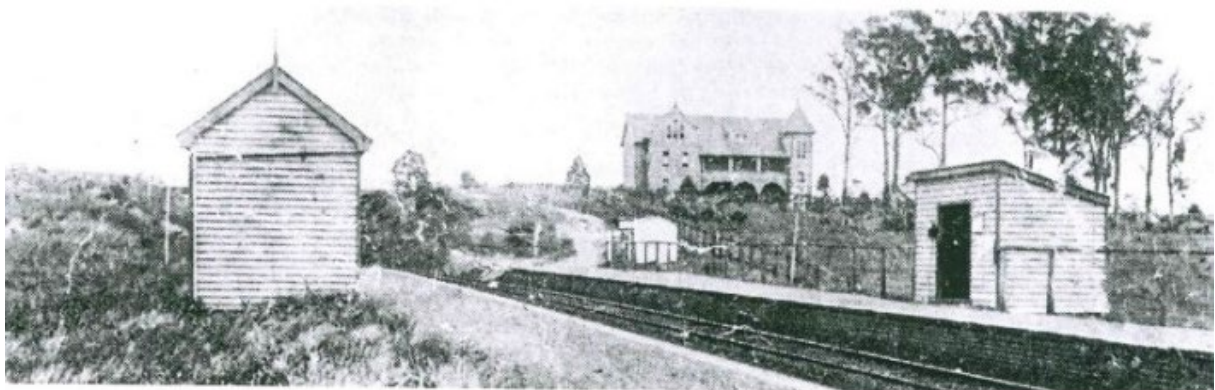


Figure 24: Westmead Train Station, c1883-1899¹⁶

¹⁵ Department of Lands, 1909. 'Parish of St John'. Accessed 2 July 2019, <https://nla.gov.au/nla.obj-233835406/view>

¹⁶ Australian Railway Historical Society, c. late 1800s, cited in Parramatta Heritage Centre, 2018. 'World leading Westmead Hospital'. Accessed 2 July 2019, <http://arc.parracity.nsw.gov.au/blog/2018/07/20/world-leading-westmead-hospital/>



Figure 25: 1943 aerial imagery showing the construction site outlined in red¹⁷

5.3.1 Westmead metro station construction site

The Westmead metro station construction site is located within the original curtilage of the Government Farm and Government Domain, developed from 1788 (Figure 21). However, there is no clear evidence of cultivation at the study area during this period. The site was advertised for subdivision from 1903 (Figure 26).

The study area extends into the Main Western Line rail corridor which had been established in 1861, and the Alexandra Avenue roadway which is known to have been vacant land up until the residential subdivisions seen within Figure 26.

1943 aerial imagery shows residential housing present within the construction site at this point. A number of these structures are extant today. In addition, a portion of the study area remained undeveloped, including Lot 1 DP4036 and Lot 1 DP1409 which remain undeveloped today.

¹⁷ Sixmaps, 1943. 'Aerial imagery'. Accessed online: <https://maps.six.nsw.gov.au/>



Figure 26: Detail of 1903 Westmead plan showing the construction site outlined in red¹⁸

¹⁸ Henry. F. Halloran, 1903. 'Westmead subdivision plan'. Accessed online:
<http://digital.sl.nsw.gov.au/delivery/action/collectionViewer.do?navigation=1&collectionId=487008787&pageNum=20&operation=viewCollection&displayType=list>

5.4 Parramatta

Exploration to the west of Sydney Cove began soon after first settlement, as it was found that the sandstone soils of coastal Sydney were unsuited to cultivation.¹⁹ In 1788, an exploration party with Governor John Hunter left the colony at Sydney Cove and rowed up what is now the Parramatta, Duck and George's Rivers in search of arable land for farming.

A settlement with a military redoubt (a form of fortress) was established when fertile land was discovered at the head of Parramatta River. This was named Rose Hill after the Secretary to the British Treasury.²⁰ Convicts were sent to the settlement, which was located at the Crescent, now Parramatta Park. The area was cleared of trees and planted with crops. The Government Farm had a house for Edward Dodd, and a barn with granaries. Dodd was Governor Phillip's personal servant who had managed farming at Farm Cove.²¹ The convicts had huts with gardens in which they lived.



Figure 27: Government Farm in 1791 (Watling and Lambert Collection, Natural History Museum, British Museum)

Government House was built near the farm. This prompted the development of the town of Parramatta, which was laid out in 1790. The town was planned along a long street now called George Street, linking Government House to the original landing place. This was on land previously used for crops. George Street was lined with convict huts, a granary, stores, and military barracks. On 2 June 1791 Governor Phillip renamed it Parramatta using the local name used by the Burramattagal, which was the first settlement to use an Aboriginal name.²² Initially the river was the main form of transport to and from Parramatta, but an overland track between Parramatta and Sydney was cleared through the bush between 1789 and 1791, which became the basis for 'the road to Parramatta'.

¹⁹ Artefact Heritage, 2014: 24

²⁰ Terry Kass, 2008. 'Parramatta'. Accessed 1 May 2019, <https://dictionaryofsydney.org/entry/parramatta>

²¹ Ibid.

²² Ibid.

By 1790, Parramatta was transformed from a convict settlement into a township, with farms and homesteads developing in the surrounding areas. Parramatta was the main centre in the region for professional services, specialist suppliers, education, and health. The end of the transportation of convicts to Australia in the 1840s resulted in the decline of the Parramatta economy. The convict buildings in the area were converted for public institutions such as the Lunatic Asylum (former Female Factory now Cumberland Hospital) near Westmead, Benevolent Asylum (George Street convict barracks), Lancer Barracks (former military barracks), and Parramatta Gaol.²³

In 1860 the railway was extended from Parramatta Junction (now Granville) to the town of Parramatta changing the focus of commercial buildings in the area from George Street to Church Street.

The first half of the twentieth century again saw the Parramatta CBD continue to develop. Development around Church Street, to the west side of Macquarie Street in particular had become denser. Additional rows of houses were constructed along the north side of Macquarie Street between Charles Street and Argyle Lane and along the south side of George Street to the east of Harris Street. However, a number of large open areas remained, including the former locations of the Asylum for Old Men and the Australian Gas Light Company works. In the case of the former location of the asylum, and Prince Alfred Square, the open spaces featured zigzagged shaped air raid trenches.

A tramway was established down Windsor Road and Church Street but was removed by the mid-twentieth century. During the second half of the twentieth century, the Parramatta CBD developed into the modern commercial precinct that is seen today.

5.4.1 Parramatta metro station construction site

Early historic mapping shows that the Parramatta metro station construction site is located within an area laid out by Governor Philip during the late eighteenth century for the establishment of rows of early convict timber, wattle and daub hut accommodation, with small gardens which provided food for residents (Figure 28 -Figure 31). These huts were located along Church and George Streets, with one visible hut located on the northern side of the Horwood Place multistorey carpark at the study area. Although Macquarie Street does not appear to have been utilised for convict housing, the area may have been used for horticultural purposes.

The timber, wattle and daub convict accommodation along Church and George Streets were gradually replaced from the 1820s by more substantial residences and workshops made from brick and sandstone. In particular, the newly developed structures along George Street were likely to have been private residences. The small gardens and horticultural plots to the rear of the convict huts were developed into residential and trades yards. These developments can be seen in a comparison of Evans 1804 plan (Figure 30 - Figure 31) and Brownrigg's 1844 plan (Figure 33). In addition, the Brownrigg plan provides ownership or land occupation information. As such, it is revealed that owners or residents along the Church Street portion of the study area included J. Barnes, Williams and Whelan; and owners or residents along the George Street portion of the study area included J. Montgomery, N. Andrews, and M. Bishop. J. Montgomery refers to John Montgomery, a former convict who was granted a publican's license at 45 George Street (extant; PLEP I703) which he named the 'Inn St Patricks', as such, this structure is potentially the oldest commercial building in Parramatta.

By 1823, structures, likely to have been private residences, were developed along Macquarie Street; these residences included rear residential yards which may have been utilised for informal trades. The 1844 Brownrigg plan has revealed that owners or residents along the Macquarie Street portion of the study area included D. Radley, J. Walker, W. C. Wood, T. Oakes, J. Bateman, and J. Housion. J. Bateman refers to John Bateman (Batman), one of the founders of the city of Melbourne. Bateman

²³ Kass, 2008. 'Parramatta'.

was born within a former structure at 64 Macquarie Street which survived up until the 1960s. The extant structure, Kia Ora (PLEP I716) was constructed on this site by James Houison in c1842. Houison and his family lived there until 1865.

By the 1840s, the horticultural plots at the Horwood Place portion of the study area had been developed into residential and trades yards to the rear of the properties along George and Macquarie Streets. In addition, a sandstock brick lined drain is known to have been constructed within the south-eastern corner of the construction site during the 1820s. This drain is known as 'Convict drain' I647 on the Parramatta LEP.

During the late nineteenth century, brick commercial buildings were constructed along Church Street, predominantly mercantile rather than industrial. Such premises included tailors, chemists, drapers and tobacconists. This development can be seen in a comparison of Brownrigg's 1844 plan (Figure 33) and the 1895 detail of Parramatta plan (Figure 34). In addition, this 1895 plan indicates that there were a number of outbuildings within the study area and the existing structure at 220 Church Street may have been built at this time. Commercial structures with outbuildings were also constructed along George Street at this time; however, these were both mercantile and industrial. Such premises included blacksmiths and pawnbrokers. In addition, a theatre named the Victoria Theatre was built and in operation from at least 1884 at approximately 37-43 George Street.

At the Macquarie Street portion of the study area during the late nineteenth century, commercial premises were being developed. These premises included auctioneers, dressmakers and bootmakers with outbuildings. Lastly, Horwood Place during the late nineteenth century contained a number of outbuildings associated with the newly developed commercial premises along George and Macquarie Streets.

The turn of the twentieth century saw the construction of several new buildings within the study area. Many of the rear yards associated with the commercial structures fronting Church, George and Macquarie Streets remained open until the c1980s development of Horwood Place. A comparison of aerial imagery in Figure 35 - Figure 38 and modern Google Earth imagery shows that these mid-nineteenth century structures were replaced, and the site has undergone frequent commercial redevelopment (Figure 37).

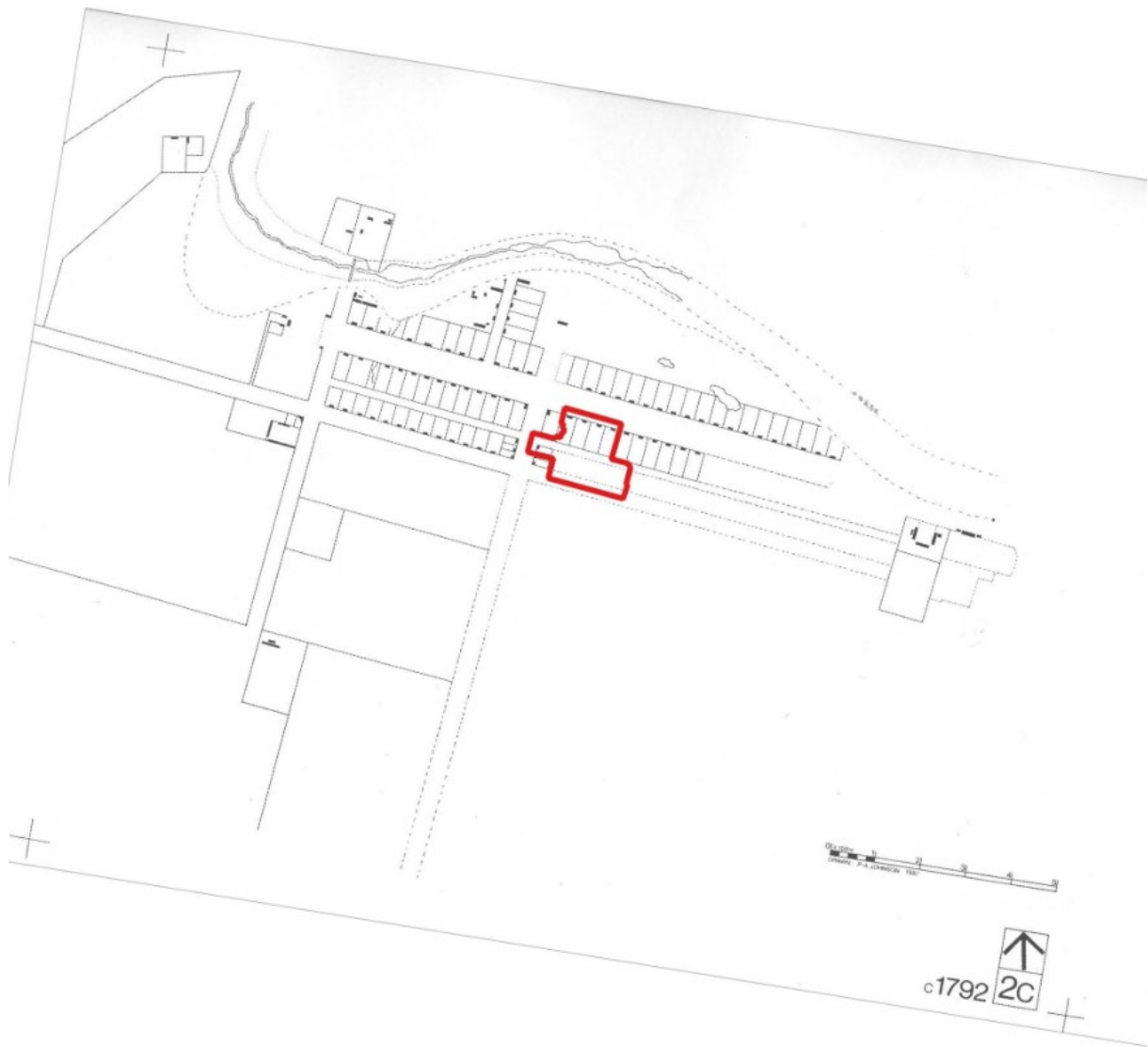


Figure 28: Detail of the Parramatta Archaeological Zoning Plan in 1792, showing construction site outlined in red



Figure 29: Detail of the Parramatta Archaeological Zoning Plan in 1804 showing construction site outlined in red



Figure 30: Evans 1804 map of Parramatta showing the construction site outlined in red

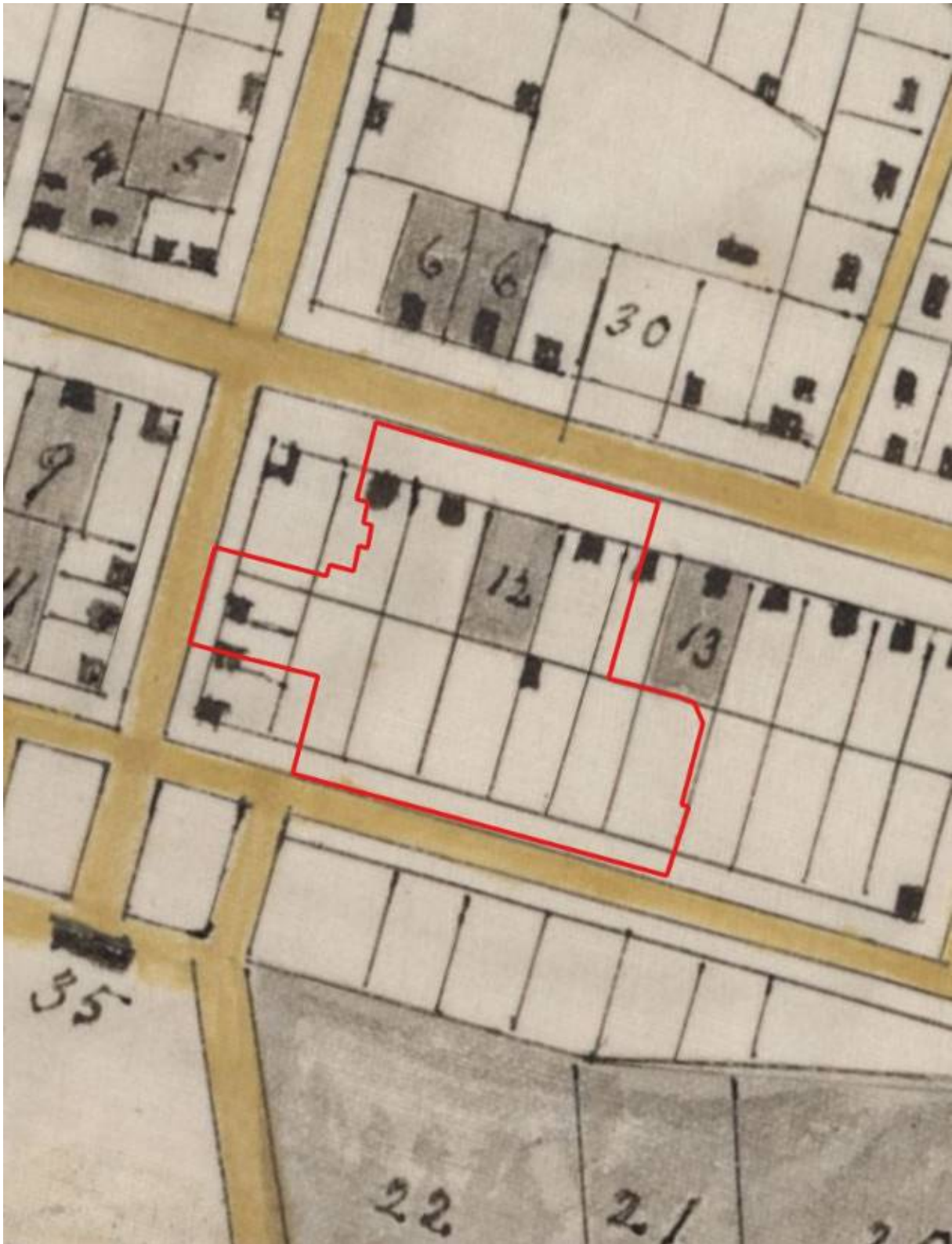


Figure 31: Detail of Evans 1804 plan of Parramatta showing construction site outlined in red



Figure 32: Detail of the Detail of the Parramatta Archaeological Zoning Plan in 1823, showing the construction site outlined in red

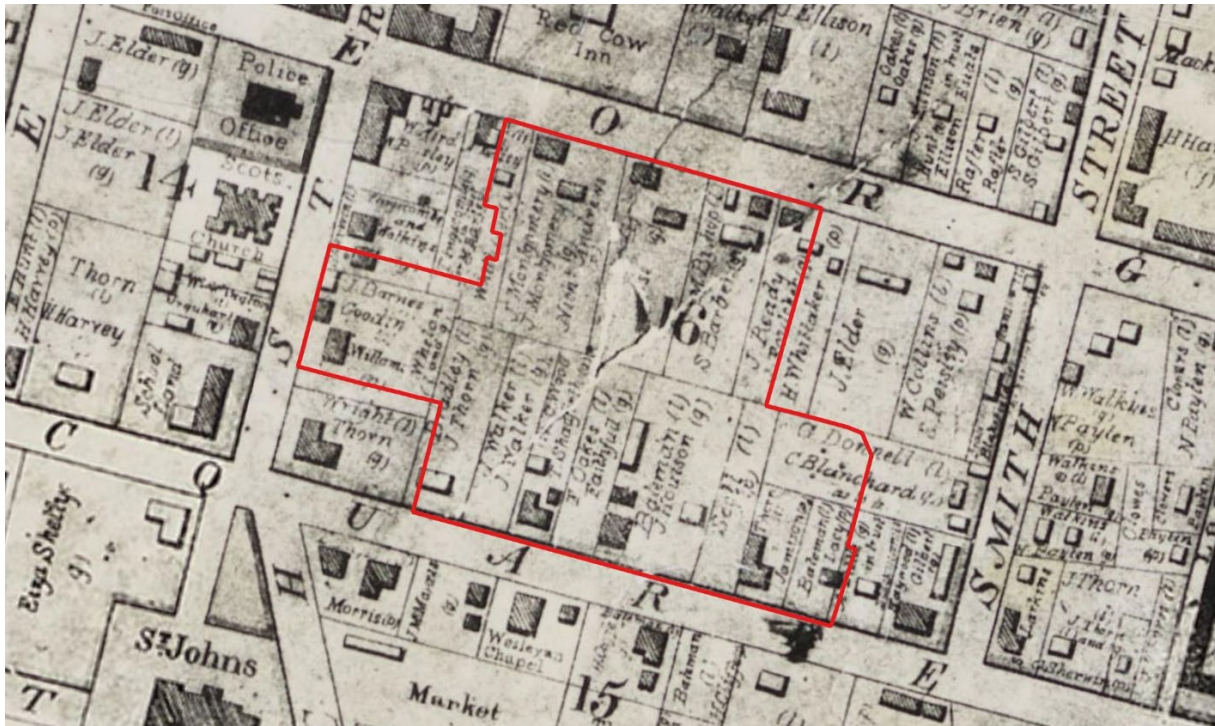


Figure 33: Detail of Brownrigg's 1844 plan of Parramatta, showing the construction site outlined in red

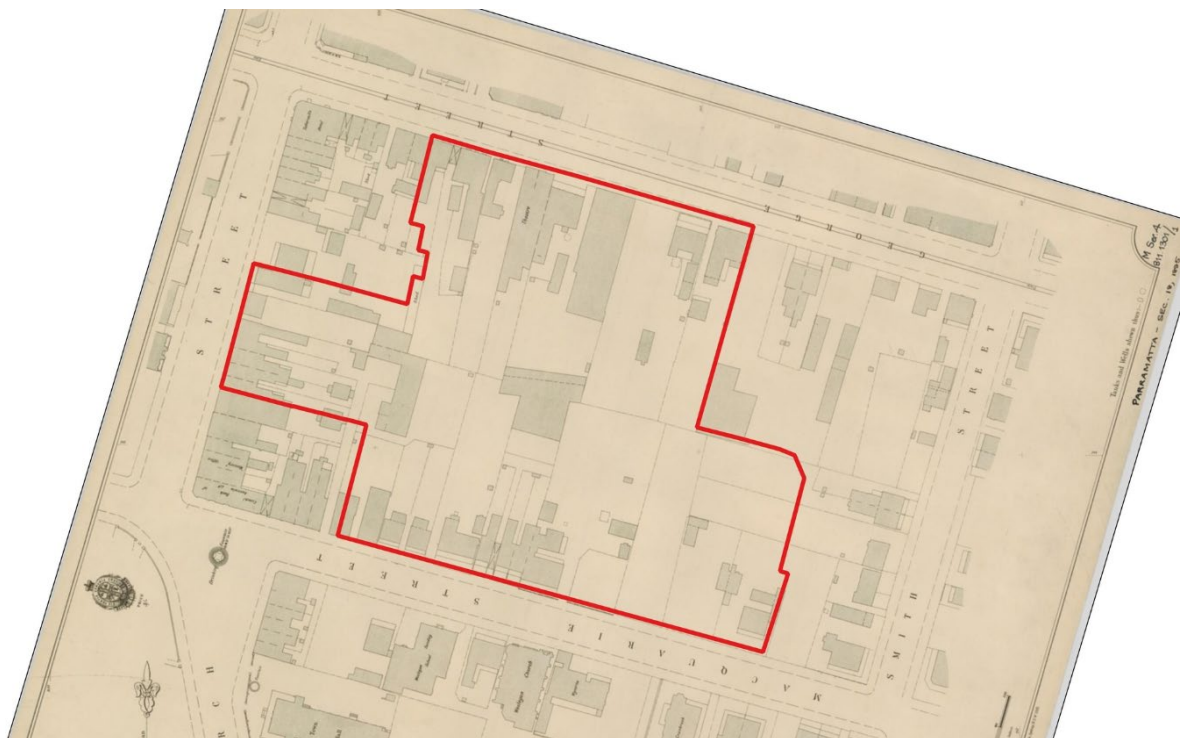


Figure 34: Detail of Parramatta Map Sheet No. 18, 1895 showing the construction site outlined in red²⁴

²⁴ Author unknown, 1895. 'Parramatta Sheet No. 18'. Accessed 8 April 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps_pid=1E3741194



Figure 35: Detail of aerial photograph of Parramatta, c1935, showing the construction site adjacent to the Roxy Theatre (right) ²⁵



Figure 36: Detail of aerial photograph of Parramatta, c1910-1960, showing the construction site bounded by the Roxy Theatre (left), George Street (foreground) and Macquarie Street (background) ²⁶

²⁵ Edward William Searle, c1920-1955. 'Aerial view of St Johns Church Parramatta'. Accessed online 5 July, <https://nla.gov.au/nla.obj-141919607/view>

²⁶ Hurley Frank, c1910-1962. 'Aerial photograph of Parramatta'. Accessed online 5 July 2019, <https://nla.gov.au/nla.obj-160018036/view>



Figure 37: 1943 aerial imagery, showing the construction site outlined in red²⁷

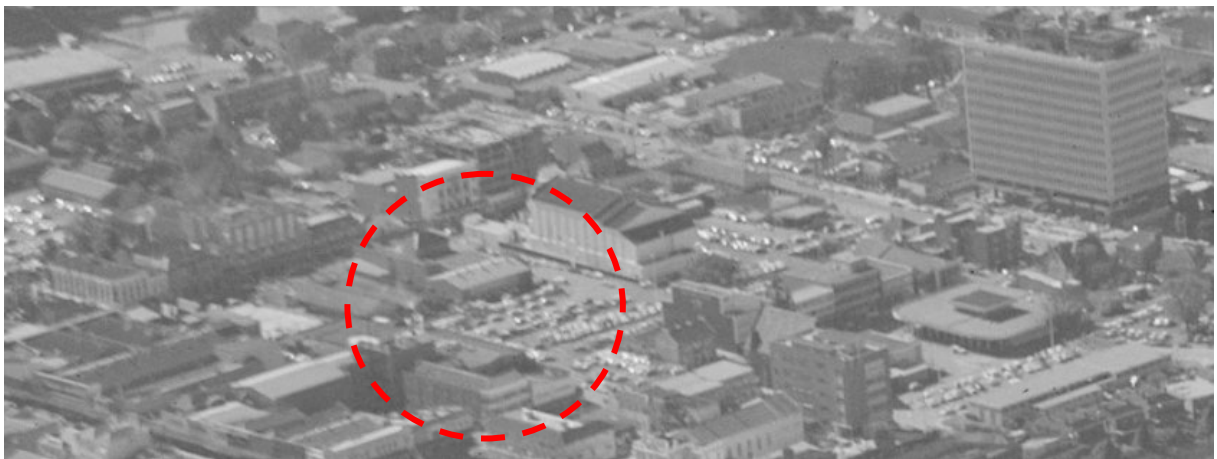


Figure 38: Detail of aerial view of Parramatta, 1970, showing the approximate construction site circled in red²⁸

²⁷ Sixmaps 2019, '1943 aerial imagery'. Accessed online 8 April 2019, <https://maps.six.nsw.gov.au/>

²⁸ Milton Kent, 1970. 'Aerial views of Darlinghurst, Kingsgrove, Parramatta'. Accessed online 5 July 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps_pid=IE8809740&_ga=2.47889698.483110839.1561942794-1916469023.1561336942

5.5 Clyde

In 1793, at present-day Clyde, John Macarthur was granted 100-acres on the north side of Duck Creek (Figure 40). It was on this land that Macarthur established Elizabeth Farm (Figure 41). Macarthur soon extended the Elizabeth Farm estate by further land grants and purchasing neighbouring lots. By 1798, the farm was over 500 acres in size and over 1100 acres by 1816.²⁹ Macarthur died in 1834, with ownership passing to his son Edward. Elizabeth Farm was purchased by Septimus Alfred Stephen in 1881 for £50,000.

Other early grants in the area included 100-acres granted to James Smith on 3 January 1818 on the south side of Duck Creek.³⁰ Smith's grant transferred to William Charles Wentworth who used the land for animal grazing. Wentworth died in 1872, following which, the grant was subdivided as the D'Arcy Park Estate (Figure 43). Subdivision plans from c1880-1900 show that streets and lots had been laid out, and a few structures had been built. In addition, a 1908 St John Parish map maintains that these streets had been established.

Between 1883 and 1884, much of John Macarthur's original land grant, including Elizabeth Farm was subdivided and sold off (Figure 42). At this time, the majority of study area does not appear to have been included within this subdivision, however, the rail line and Aston Street (James Ruse Drive) had been laid out. In the 1880s subdivision, it was marketed as Rosehill by the then owner Septimus Alfred Stephen. It was hoped that the subdivision and selling of the Elizabeth Farm allotments would allow for greater residential development in the area. The allotments offered were relatively large for their time, generally measuring approximately 66 feet wide.³¹ However, the planned residential development did not prove to be economically viable. As such, the majority of the land grants were purchased by industrial companies who seized the opportunity that the Duck River frontage and rail connections provided at the site.

Industries that flourished in the wider area included Shirley Fertilizer along Shirley Street, galvanised iron and wire netting works by Arthur and St John Lysaght in 1884, the Australian Kerosene Oil and Mining Company in 1885, Anschau's Tannery in 1895, the Wunderlich Tile Works in 1910, the John Fell & Co Pty Ltd oil company in 1913, James Hardie and Company in 1916, Wesco Paints in 1920 and the Australian Branch of the Goodyear Tyre and Rubber Company in 1926.³² On these properties industrial yards and warehouses were developed during the late nineteenth and early twentieth centuries.

Most of the residential development in the area was for the workers of the local industries. Houses reflected this economy, with interwar bungalow style houses and works cottages. Some of these houses were resumed with the expansion of James Hardie and Company's asbestos factory. Most of the area is now industrial or left barren as remediation of the asbestos factory and other industrial land has not been fully completed.

Another section of land within directly north of the study area was purchased by John Bennett, who developed his land for a racecourse and for recreational purposes (northwest of the study area). This became the Rosehill Gardens racecourse, which was opened in 1885. Bennett was the instigator of the private railway line that ran from Clyde to Rosehill. A station was opened in 1888 at Rosehill, and later connected to the private Simpson's Railway to Carlingford. A tramway also went through parts of the locality. The tramway was opened in 1884 after a special Act was passed in 1881 allowing for the construction of the private tramway between the Duck River Wharf and Parramatta. The alignment

²⁹ OEH 2001 *PAMU 3035*

³⁰ OEH, 2000. 'Parramatta Archaeological Management Unit 2969'. Accessed 2 July 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242969>

³¹ OEH 2001 *PAMU 2978*

³² OEH 2001 *2864*

still exists today as Grand Avenue. Both the railway and tramway aided in the development of Camellia as an industrial suburb.

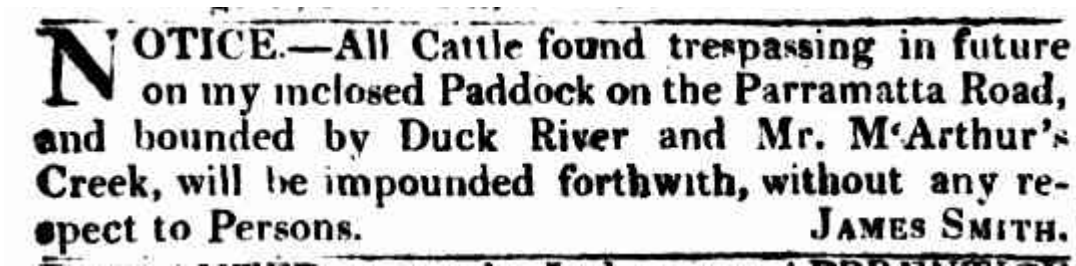


Figure 39: Notice within the *Sydney Gazette* by James Smith, 12 June 1819³³

³³ James Smith, 12 June 1819. 'Advertisement' *The Sydney Gazette*. P. 2, accessed 2 July 2019, <https://trove.nla.gov.au/newspaper/page/494252#>



Figure 40: Detail of 1859 plan showing the construction site outlined in red

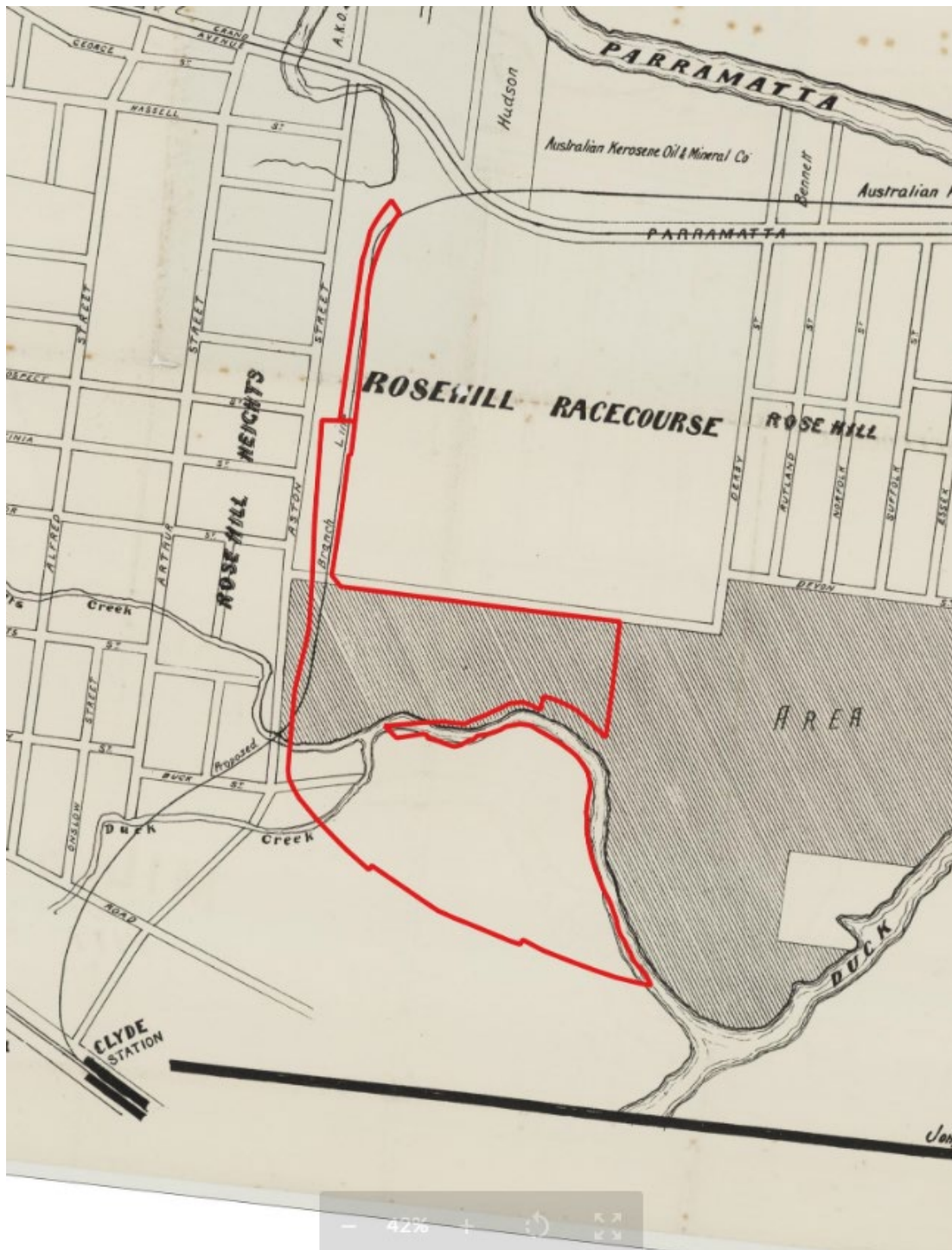


Figure 41: Detail of Elizabeth Farm map, date unknown (approximate location of the construction site outlined in red)³⁴

³⁴ Mills & Pile, n.d. 'Elizabeth Farm', *Parramatta Subdivision Plans 1876-1929*. Accessed 2 May 2019, <https://trove.nla.gov.au/map/result?q=rosehill+subdivision&l-availability=y>

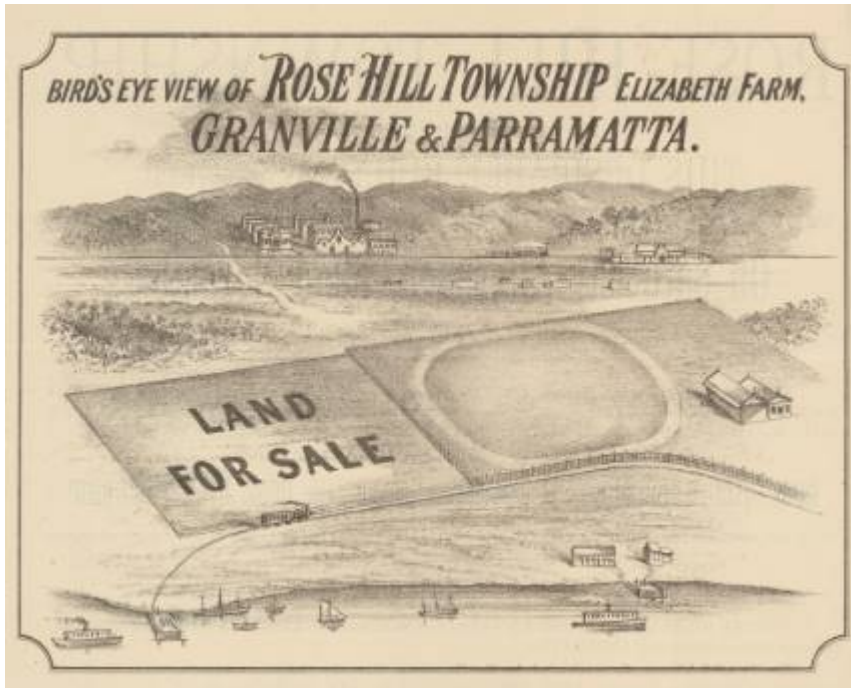


Figure 42: Elizabeth Farm action poster, c1883-1884³⁵

³⁵ Hardie & Gorman, c1883-1884. 'Birds Eye View of Rose Hill Township, Elizabeth Farm'. Accessed 2 May 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=IE9140867&change_lng=

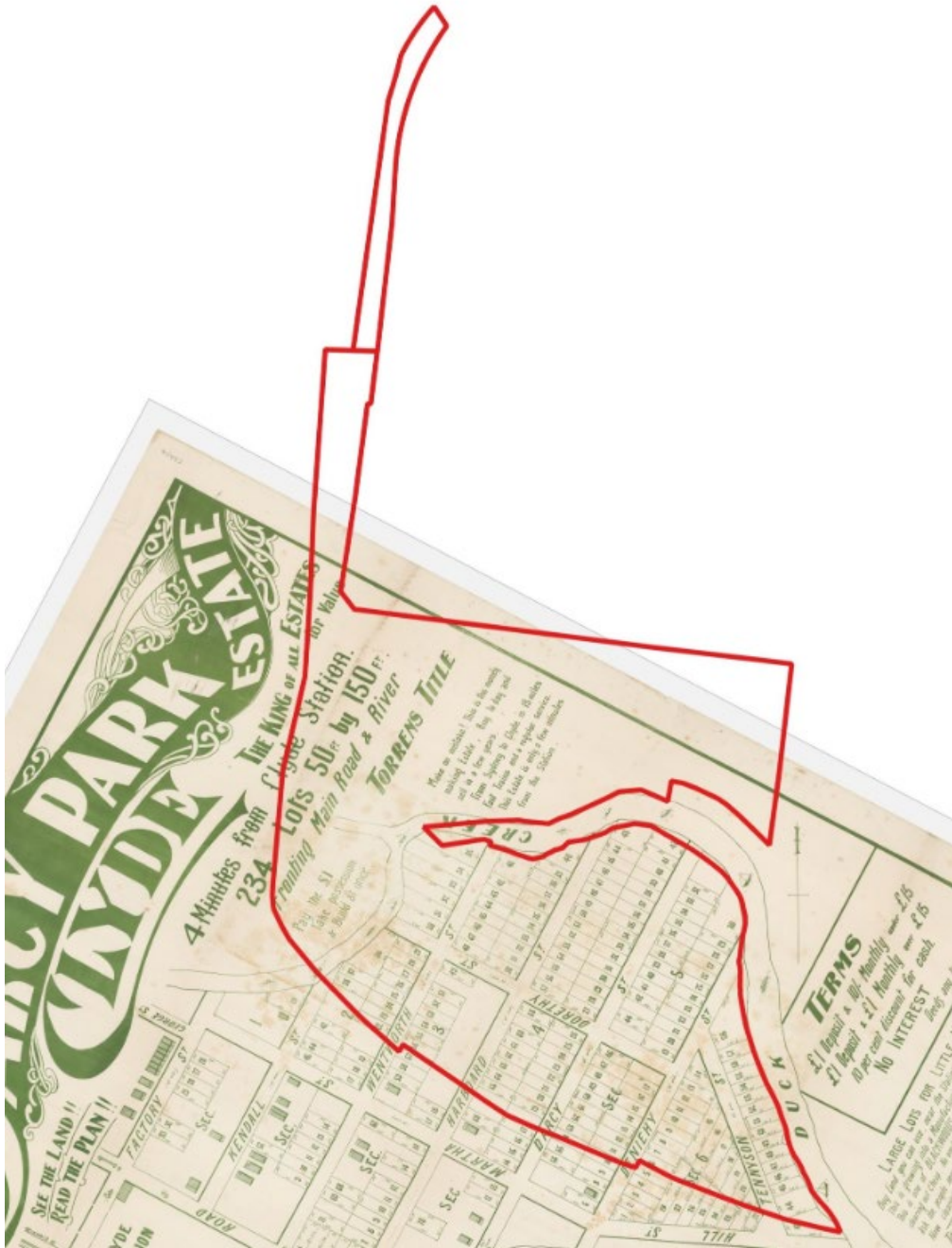


Figure 43: Darcy Estate subdivision plan, c1872-1880, showing the construction site outlined in red

5.5.1 Granville Showground; Sydney Speedway

In August 1925, an approximate 30-acre area was resumed within James Smith's original land grant, north of Duck Creek, for the establishment of the Agricultural Society's Granville Show and Sports Ground.³⁶ Throughout 1926, £3000 was raised for construction of the showground under the *Trustees of Public Reserves Enabling Act*. The showground was opened in March 1927 and included a grandstand with refreshment room and booth; 45 stalls for horses and cattle; a trotting track, which

³⁶ GRANVILLE SHOWGROUND. (1925, August 25). *The Sydney Morning Herald* (NSW: 1842 - 1954), p. 10. Retrieved July 3, 2019, from <http://nla.gov.au/nla.news-article16237765>

was 40 feet wide and half a mile in length; and room for a championship dog show and ring events including high jump and hunting contests.³⁷

In 1927, it was reported that due to the £270 profit made by the showground that year, improvements were to be made and a cycle track was to be introduced.³⁸ From 1932, the trotting track was utilised as a speedway, however this was closed due to poor safety standards relating to safety fencing on 17 October 1936.³⁹

Information regarding land use directly following the speedway closure remains sparse. However, a 2011 personal account titled *Childhood Memories of Growing up in Clyde* by George and Max Pearce, gives some indication of continued use. Pearce describes paved areas of the showground were used as push bike trails; cricket and football were played on sporting fields; and remnants of a trial greyhound track were visible.⁴⁰ An area within the north eastern corner of the showground named 'White Bridge' which was often home to homeless men throughout the 1930s and 1940s. This area was called White Bridge as a wooden footbridge, painted white, was situated in this area, spanning Duck Creek. Adjacent (east) of this footbridge, on the southern side of the river, a ferry terminal was located. White Bridge has since been replaced by two large pipelines owned by Sydney Water, which have utilised the original concrete bridge supports.⁴¹

In addition, Pearce describes that African American troops were stationed within barracks built at the Granville Showground during World War II and these purpose-built structures were utilised as a practice location for a Scottish pipe band, and an exhibition for a bird society following the end of the war. The Granville Bus Company occupied the southernmost portion of the showground, bounded by Martha Street and held buses and a large bus maintenance shed there. During the c1950s, horses were held out the showgrounds; rugby games were played, and a Go Kart track was established.⁴²

A clay Sprintcar Speedway track was laid out at the Granville Showgrounds with first practices undertaken in January 1977. From this point, the Granville Showgrounds became known as the 'Parramatta City Raceway'. The track remains in current use under the name Sydney Speedway.

5.5.2 Clyde stabling and maintenance facility construction site

The Clyde stabling and maintenance facility construction site is divided by Duck Creek and A'Becketts Creek, upper tributaries of Duck River. The northern portion of the site is located within the curtilage of John Macarthur's land grant which he acquired from 1793. Macarthur's land was developed into Elizabeth Farm and used for agricultural purposes. From 1883-1884, Elizabeth Farm was subdivided and sold off. A map of the parish of St John from c1925 shows that the site was not included within this subdivision (Figure 44), indicating that this area, north of Duck Creek and A'Becketts Creek, remained undeveloped. However, aerial imagery from 1943 reveals that an area approximately 75 metres wide, directly south of Unwin Street, had been utilised for industrial activities, which incorporated a rail siding connecting to the T6 Carlingford Line (Figure 45). This rail siding does not appear on historic mapping; however, it is clear within the 1943 aerial and remnants can be seen at the study area today. In addition, an area of approximately 60 x 150 metres had been utilised by 'Shirley Fertiliser' off Shirley Street. The remaining land north of Duck Creek and A'Becketts Creek

³⁷ Granville Showground (1927, February 18). *The Cumberland Argus and Fruit growers Advocate* (Parramatta, NSW: 1888 - 1950), p. 2. Retrieved July 3, 2019, from <http://nla.gov.au/nla.news-article106230128>

³⁸ Improving Granville Showground (1927, June 7). *The Daily Telegraph* (Sydney, NSW: 1883 - 1930), p. 2. Retrieved July 3, 2019, from <http://nla.gov.au/nla.news-article247370090>

³⁹ Author unknown, n.d. 'Granville Showground Speedway'. Accessed 3 July 2019, <https://vintagespeedway.homestead.com/Granville-Showground.html>

⁴⁰ George and Max Pearce, 2011. 'Childhood Memories of Growing Up in Clyde'. *The Granville Guardian Vol 18*, No. 5. Accessed 3 July 2019, <http://www.granvillehistorical.org.au/resources/2011GranvilleGuardianJune.pdf>

⁴¹ Ibid.

⁴² Ibid.

appears to have been relatively undeveloped, although a number of tracks appear throughout and two small structures can be seen in a clearing to the west within the 1943 aerial imagery.

The Rosehill dive structure and tunnel portal would be located in the northern portion of the Clyde stabling and maintenance facility construction site, past Unwin Street, along James Ruse Drive, covering the T6 Carlingford Rail Line rail corridor and a carparking facility. This area falls within John Macarthur's land grant and was not built upon until the coming of John Bennett's rail line and station in 1888.

The area directly south of Duck Creek is located within James Smith's 1818 land grant, which was utilised for agricultural purposes up until subdivision which took place from 1872. Streets and allotments were laid out, however an approximate 30 acre area was resumed here for the establishment of the Granville Showground, later the Parramatta City Raceway and Sydney Speedway (Figure 44).

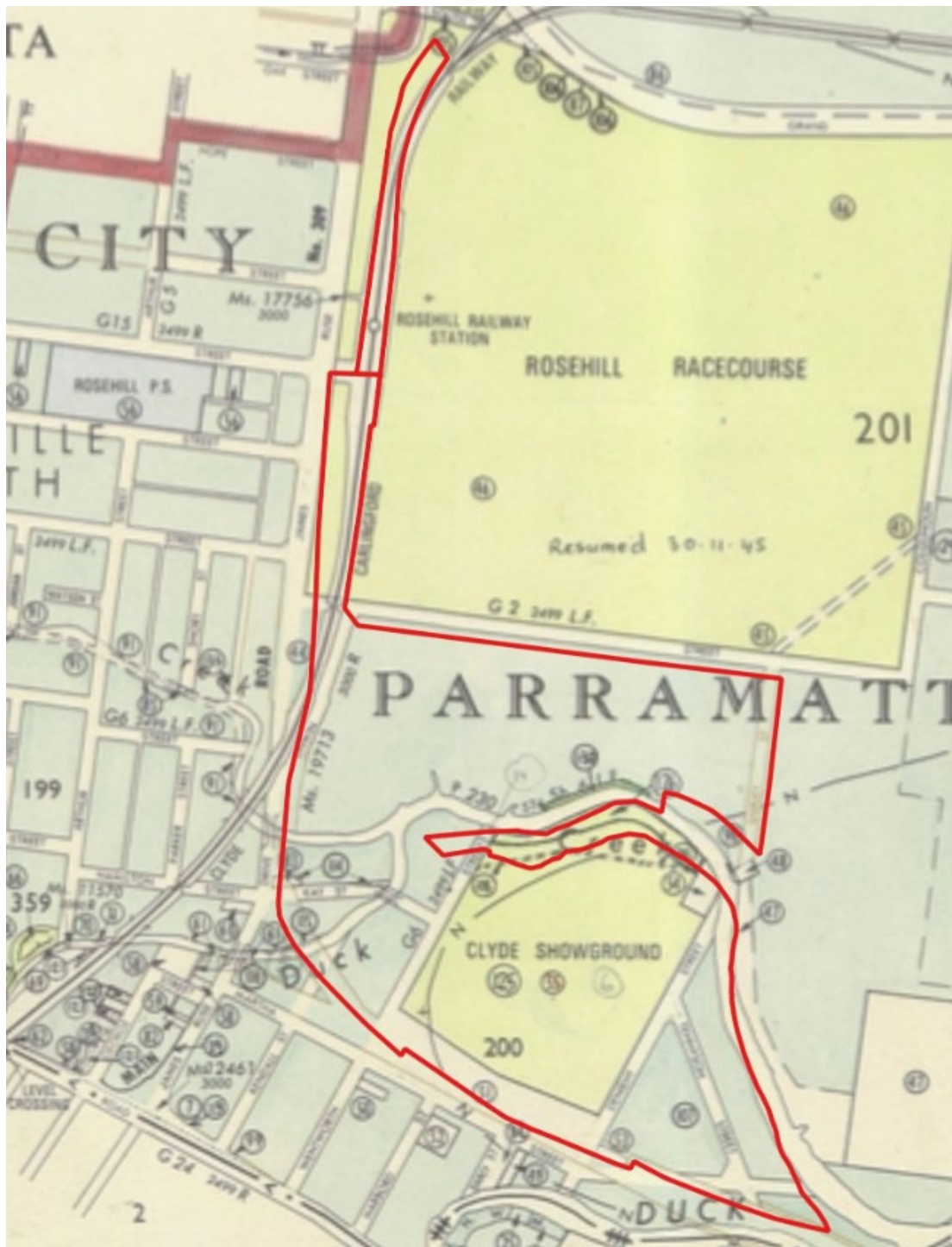


Figure 44: Undated (post-1925) Parish of St John map, showing Granville Showground (Clyde Showground) and undeveloped area north of Duck Creek (construction site outlined in red)⁴³

⁴³ Land Registry Services, n.d. 'St John Parish'. Accessed 3 July 2019, <https://hlrv.nswlrs.com.au/>



Figure 45: 1943 aerial imagery showing the construction site outlined in red

5.6 Silverwater

Land within Liberty Plains, today known as Silverwater, Homebush, Rookwood and Lidcombe, was first settled in 1797. The earliest known European settlement within Liberty Plains at this time took place when two 25-acre grants were given to Captain Henry Waterhouse and Lieutenant John Shortland to the south of the Parramatta River (north east of the study area) (Figure 46).

The Waterhouse grant became known as Waterhouse Farm, while Shortland's grant was named Shortland Farm. Little is known about land use in the area during this time. However, Waterhouse kept a flock of Merino sheep on the property before returning to England in 1800. The farm was later put up for sale and an advertisement in the Sydney Gazette dated 6 January 1805 stipulated that 'All persons are prohibited from cutting spars or timber of any kind on the above grounds'. This suggests that the majority of land within his grant had not been cleared or formally occupied.⁴⁴

During this time, the most convenient mode of transport in Liberty Plains was via the Parramatta River. The location of these early land grants, to the south of the Parramatta River, east of Duck River and north of Parramatta Road would have allowed for ease of access to and from the properties.

In 1806, a 50 acre grant was given to Samuel Haslam. Later that year, Judge-Advocate Richard Aitkens took out a lease on land east of Duck River and north of Parramatta Road. His lease was cancelled shortly thereafter and the area (which covered approximately 1290 acres) was granted to free settler John Blaxland in 1807 (Figure 46).⁴⁵

Blaxland called his 1290-acre grant 'Newington', after his family estates in Kent.⁴⁶ The Newington Estate covered land between Parramatta River and Parramatta Road, Duck River and Haslam's Creek and excluded grants to Waterhouse, Shortland, Haslam, and an additional 30-acre grant owned by I. Archer (Figure 46). These were purchased by Blaxland in 1808 and consolidated into the estate.⁴⁷ The majority of land within the estate occupied low lying swamps.⁴⁸

Industrial and commercial pursuits were undertaken from the earliest years of the suburb's development. During his first decade of occupation, Blaxland established a small cottage, farm, slaughterhouse and saltworks – developing a cattle industry and producing the first usable salt in the country.⁴⁹ In 1829, Blaxland commenced the construction of the grander and larger 'Newington House'. Silverwater Road, known originally as Sutherland Road, is approximately in alignment with the carriageway from Parramatta Road.

From 1860 onwards, the Newtown estate began to break up. In 1863, Reverend John Allen Manton acquired, by lease, Newington on behalf of the Methodist Church to start a boy's school.⁵⁰ By 1880, the pupil count had grown from nineteen to several hundred and the college moved to its current site

⁴⁴ Office of Environment and Heritage (OEH), n.d. 'Silverwater Prison Complex'. Accessed 3 May 2019, <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5045306>⁴⁵ OEH, n.d. 'Silverwater Prison Complex'.

⁴⁵ OEH, n.d. 'Silverwater Prison Complex'.

⁴⁶ Blaxell, G. 2017. Newington's Gentlemen Farmers. *Northern District Times*. Retrieved from: <http://ezproxy.library.usyd.edu.au/login?url=https://search-proquest-com.ezproxy1.library.usyd.edu.au/docview/1899175922?accountid=14757>

⁴⁷ Perrin, E and Kass, T. 2008. 'Liberty Plains'. Accessed 3 May 2019, http://dictionaryofsydney.org/entry/liberty_plains

⁴⁸ Graham Brooks and Associates, 2004, p. 7.

⁴⁹ Blaxell, G. 2017. Blaxland Laid Out Salt pans. *Northern District Times*. Retrieved from: <http://ezproxy.library.usyd.edu.au/login?url=https://search-proquest-com.ezproxy1.library.usyd.edu.au/docview/1902132656?accountid=14757>

⁵⁰ Gapps, S. 2013. 'Newington College: History'. Accessed 3 May 2019, <https://www.newington.nsw.edu.au/about-newington/history/>

at Stanmore.⁵¹ No significant structures were constructed on the estate during this period and land use within the study area is not known.⁵²

The NSW Government purchased part of the site in 1880 for use as Benevolent Asylum for aged and destitute women, which soon after became the Silverwater State Hospital and Asylum (north east of the study area).⁵³ By 1881, much of the Newington estate had been subdivided (Figure 48). In October 1883, the name 'Silverwater' was first used by Campbell, Mitchell and Co with land sales of what was called the Silverwater Estate.

Land sales continued until 1920 under various names including Newington, Riverside Heights, Silverwater (again) and Suttors. Small farms of about three acres (1.2 hectares) were offered within Silverwater for agricultural activities including dairy, poultry and pig production. In 1905, Riverside Heights was advertised as 'close to the new abattoirs' at Homebush, which opened as the State Abattoirs in 1916.

While prestige homes were established along Parramatta Road, modest housing was common in Silverwater. Due to the development of industry, housing was not as prominent away from the main roads. The twentieth century saw mainly industrial development occurring within Silverwater. Some early companies with long histories in the area were Ammonia Company Australia Ltd, British Imperial Oil, Clyde Brickworks, General Chemical Company, and Australian Linoleum.



Figure 46: Detail of nineteenth century parish of St John map showing the construction site outlined in red⁵⁴

5.6.1 Silverwater services facility construction site

The Silverwater services facility construction site is located within the curtilage of John Blaxland's 1807 land grant. Blaxland developed a number of small structures within his estate, however there is no evidence of structures within the site. Rather, the land appears to have been utilised for

⁵¹ Blaxell, G. 2017. Newington in Decay. *Northern District Times*. Retrieved from <http://ezproxy.library.usyd.edu.au/login?url=https://search-proquest-com.ezproxy1.library.usyd.edu.au/docview/1903638142?accountid=14757>

⁵² Graham Brooks and Associates, 2004. *Silverwater Correctional Complex Conservation Management Plan*. Department of Commerce, Sydney. p. 11.

⁵³ Graham Brooks and Associates, 2004, pp.12-21.

⁵⁴ Land registry services, n.d. 'St John Parish'. Accessed 3 May 2019, <https://hlrv.nswlrs.com.au/>

agricultural purposes. Silverwater had been mostly subdivided by the c1880s; this is evidenced at the construction site in a 1909 subdivision plan of Riverside Heights Estate which shows Derby Street and Sutherland Street (Silverwater Road) and the square blocks laid out as seen today.

1943 aerial imagery of the area shows that the site had not been developed by c1940, despite the previous subdivision (Figure 48). Derby Street and Sutherland Street (Silverwater Road) are visible. There is limited written history and imagery of the area from the mid-late twentieth century. Google Earth aerial imagery from 2003-2007 indicates that there was an approximate 35 x 40 metre structure within the study area, however, Google Earth aerial imagery from 2009 indicates that this structure had been demolished by this point. This imagery also reveals that the eastern most, 10 x 40 metre portion of the study area has had no previous developments.



Figure 47: Undated (post-1925) Parish of St John map, showing the construction site outlined in red⁵⁵

⁵⁵ Land Registry Services, n.d. 'St John Parish'. Accessed 3 July 2019, <https://hlrv.nswlrs.com.au/>

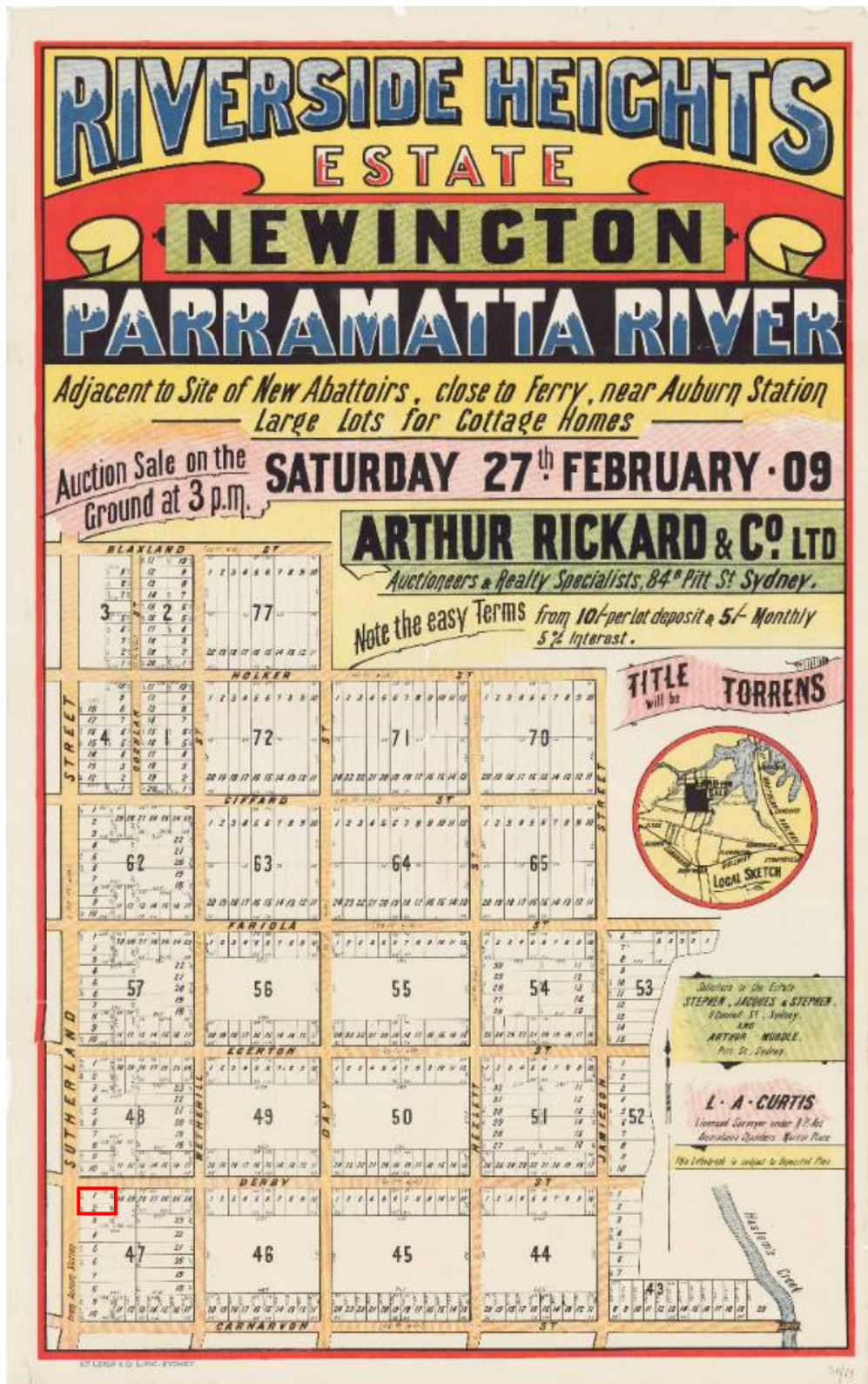


Figure 48: 1919 subdivision plan showing the construction site outlined in red⁵⁶

⁵⁶ Arthur Rickard, 1919. 'Riverside Heights Estate Newington, Parramatta River'. Accessed online 3 July 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=IE9084940&change_lng=



Figure 49: 1943 aerial imagery showing the Derby Street and Sutherland Street (Silverwater Road). The study area appears undeveloped (construction site outlined in red)⁵⁷

⁵⁷ Sixmaps, 1943. 'Aerial imagery'. Accessed online: <https://maps.six.nsw.gov.au/>



Figure 50: Google Earth aerial imagery, 2007 showing structure within the construction site outlined in red



Figure 51: Google Earth aerial imagery, 2009 showing the removal of all structures within the construction site (outlined in red)

5.7 Sydney Olympic Park

Following European exploration in 1788, the Homebush Bay area became known as 'The Flats' after the extensive mangroves and mud flats in the region.⁵⁸ The first land grant in the area was allotted to Thomas Laycock in 1794. In 1810 this farm was sold to D'Arcy Wentworth who named the site 'Home Bush' (Figure 52). Wentworth was a public servant and surgeon in the colony, and acquired surrounding land grants, increasing his property in size to 920 hectares. A homestead and later a horse racing track was built on the land in 1825 (Figure 53).⁵⁹ Wentworth continued to own the land until he died in 1827 and left his property to his son Charles Wentworth.⁶⁰



Figure 52: Pre-1850s Concord parish map showing Wentworth land grant (construction site outlined in red) (Land Registry Services)

The property was rented by various tenants from the 1830s, at which time the land was described as being completely empty and the vegetation largely cleared.⁶¹ In 1881, a proposal was made for subdividing the southeast portion of Wentworth's estate for residential development. This subdivision was called the Homebush Park Estate. By 1883, some of the land had been subdivided, but it was another three years before the first lot was sold. It was still not heavily populated by 1890, and the estate remained virtually intact until its resumption by the Public Works Department for the

⁵⁸ City of Parramatta Council, 2016. 'Sydney Olympic Park and Homebush Bay – A brief history.' Accessed 3 May 2019, <http://arc.parramatta.nsw.gov.au/blog/2016/11/05/sydney-olympic-park-and-homebush-bay-a-brief-history/>

⁵⁹ Ibid.

⁶⁰ Sydney Olympic Park, n.d. 'Heritage and History'. Accessed 3 May 2019, http://www.sopa.nsw.gov.au/our_park/history_and_heritage/colonial_history

⁶¹ Louisa Ann Meredith, 1861. *Notes and Sketches of New South Wales During a Residence in the Colony from 1839 to 1844*. John Murray, London. p.56

establishment of the State Abattoirs during the early years of the twentieth century.⁶² By 1906 the farm buildings and horse racing track had become derelict.⁶³



Figure 53: Front view of Wentworth's homestead in 1917 (Source: State Library NSW)

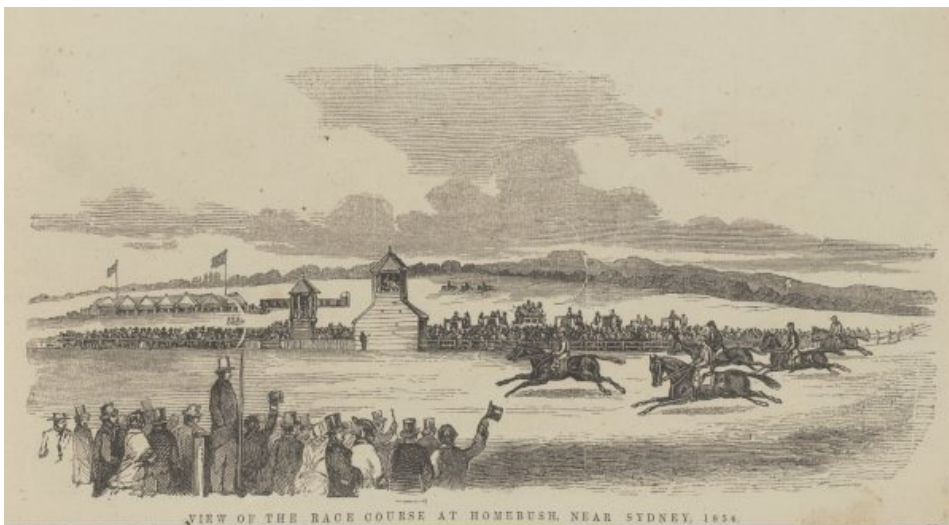


Figure 54: Homebush horse racing track in 1854 (Source: National Library of Australia)

5.7.1 State Abattoirs

At the turn of the twentieth century, concerns for public health in relation to the Glebe Island abattoir had reached a critical point, particularly following the outbreak of the plague. In 1902, a Parliamentary

⁶² Sydney Olympic Park, n.d. 'Colonial History'. Accessed 4 May 2019, <https://www.sopa.nsw.gov.au/About-Us/History-and-Heritage/Colonial-History>

⁶³ J. J. Auchmuty, n.d. 'D'Arcy Wentworth'. Accessed 4 May 2019, <http://adb.anu.edu.au/biography/wentworth-darcy-1545>

Standing Committee was appointed to inquire into the proposal for a new abattoir.⁶⁴ The Committee recommended Homebush as the new site and by March 1907, an area of 367 hectares within the Homebush Estate (within the study area) was resumed by the Government for establishment of the State Abattoirs. This saw development of associated buildings, servicing roads and infrastructure. In 1908, the Abattoir Branch railway line was constructed through the abattoir, which involved levelling of the site.⁶⁵ This dedicated railway system was further developed in 1910, with site levelling and excavating required for establishment of platforms and sidings and associated roadways within the abattoir precinct.⁶⁶ The abattoirs were officially opened in 1915.

By the 1930s, the State Abattoirs had developed to become one of the largest slaughterhouses in the Commonwealth and provided employment for 1,600 workers. It had a killing capacity of 18,000 – 20,000 sheep, 1,500 cattle, 2,000 pigs and 1,300 calves per day. By-products of the works included tallow, dripping, fertiliser, oil, sinews, hoofs, hair, glue pieces, bones and horns.⁶⁷ The abattoir was surrounded by 1,500 acres of rest paddocks and stockyards. The 1930s saw an abundant growth of algal blooms within Homebush Bay due to the dumping of waste and carcasses. By the 1950s, Auburn Council had erected a warning sign for polluted water and sharks at the nearby Silverwater Baths due to the waste dumping which attracted sharks into the river. After poor management practices and ongoing issues with maintenance in the decades following World War II the abattoir ran into a deficit and closed in 1988.⁶⁸

⁶⁴ Sydney Olympic Park, n.d. 'Industrial History'. Accessed 3 May 2019, <https://www.sopa.nsw.gov.au/About-Us/History-and-Heritage/Industrial-History>

⁶⁵ Godden Mackay, 1990. *The State Abattoir Homebush*. NSW Property Services Group, Sydney. pg. 5.

⁶⁶ *ibid.*

⁶⁷ Sydney Olympic Park, n.d. 'Industrial History'.

⁶⁸ Sydney Olympic Park, n.d. 'Heritage and History'.

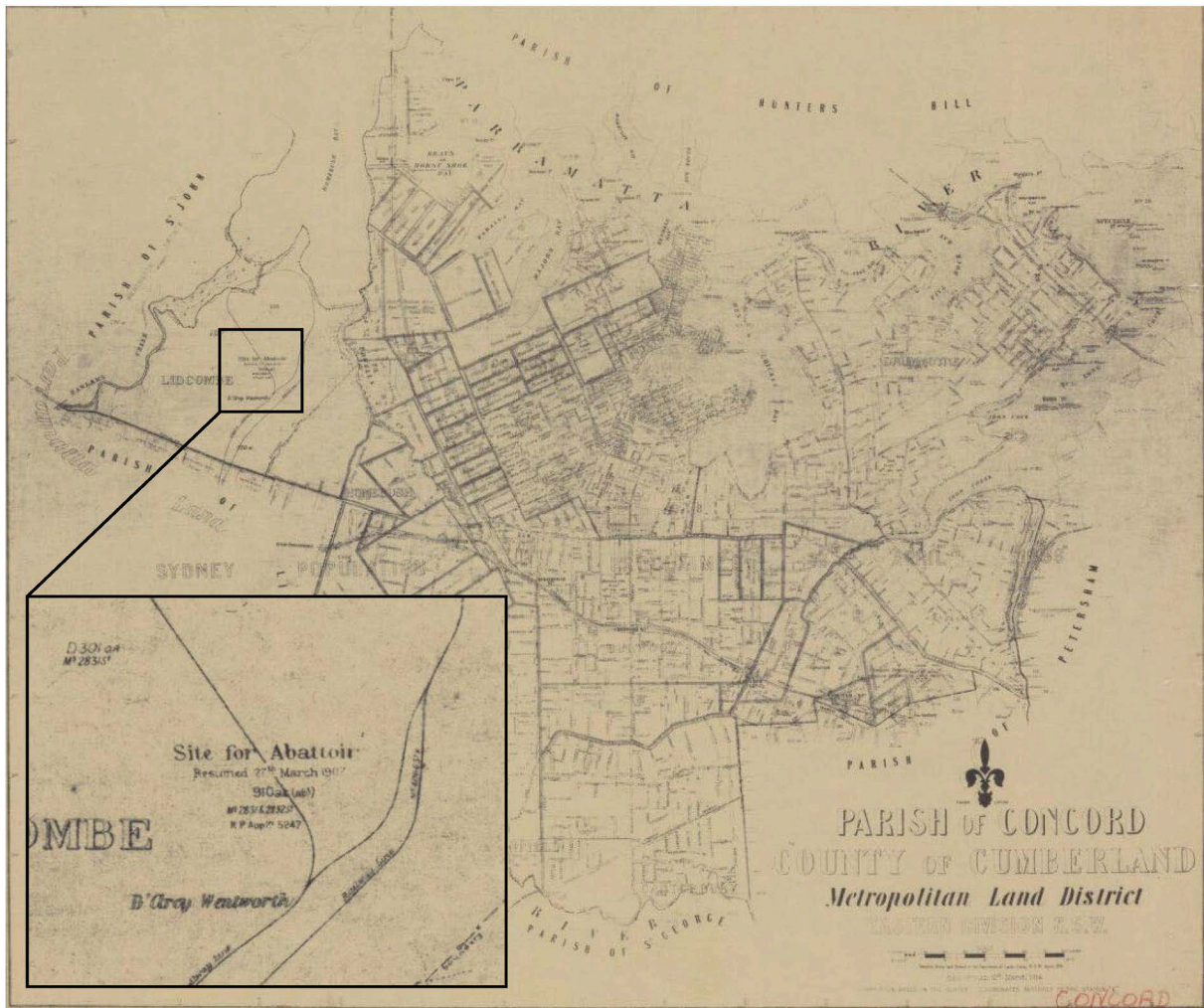


Figure 55: Parish of Concord map, 1914, showing site of the State Abattoirs⁶⁹

⁶⁹ Department of Lands, 1914. 'Parish of Concord'. Accessed 3 May 2019, <https://nla.gov.au/nla.obj-233115299/view>

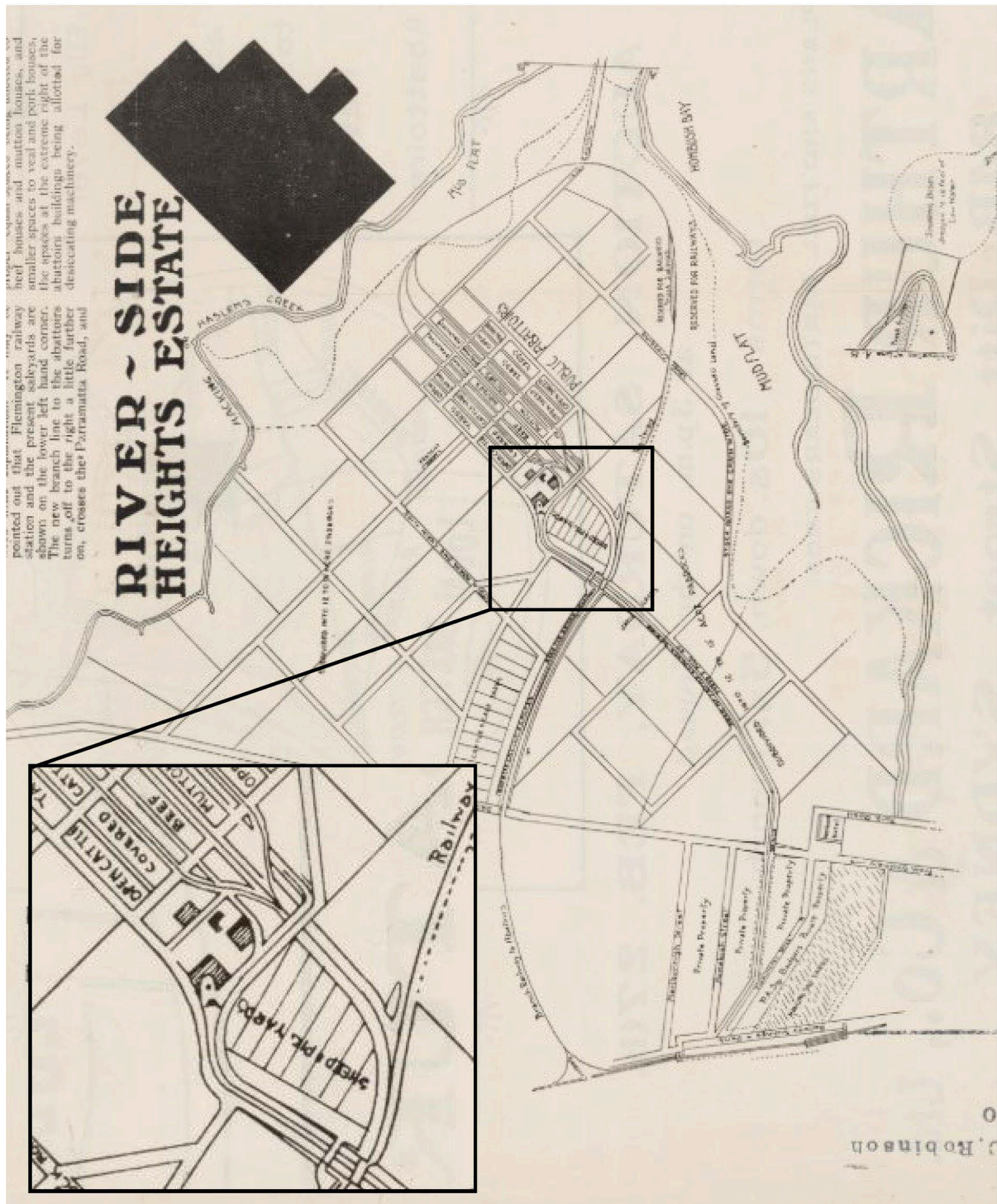


Figure 56: New Abattoir at Homebush plan, 1909, showing construction site⁷⁰

⁷⁰ Author unknown, 1909. 'New Abattoirs, Homebush'. Accessed 3 May 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=IE9092167&change_lng=

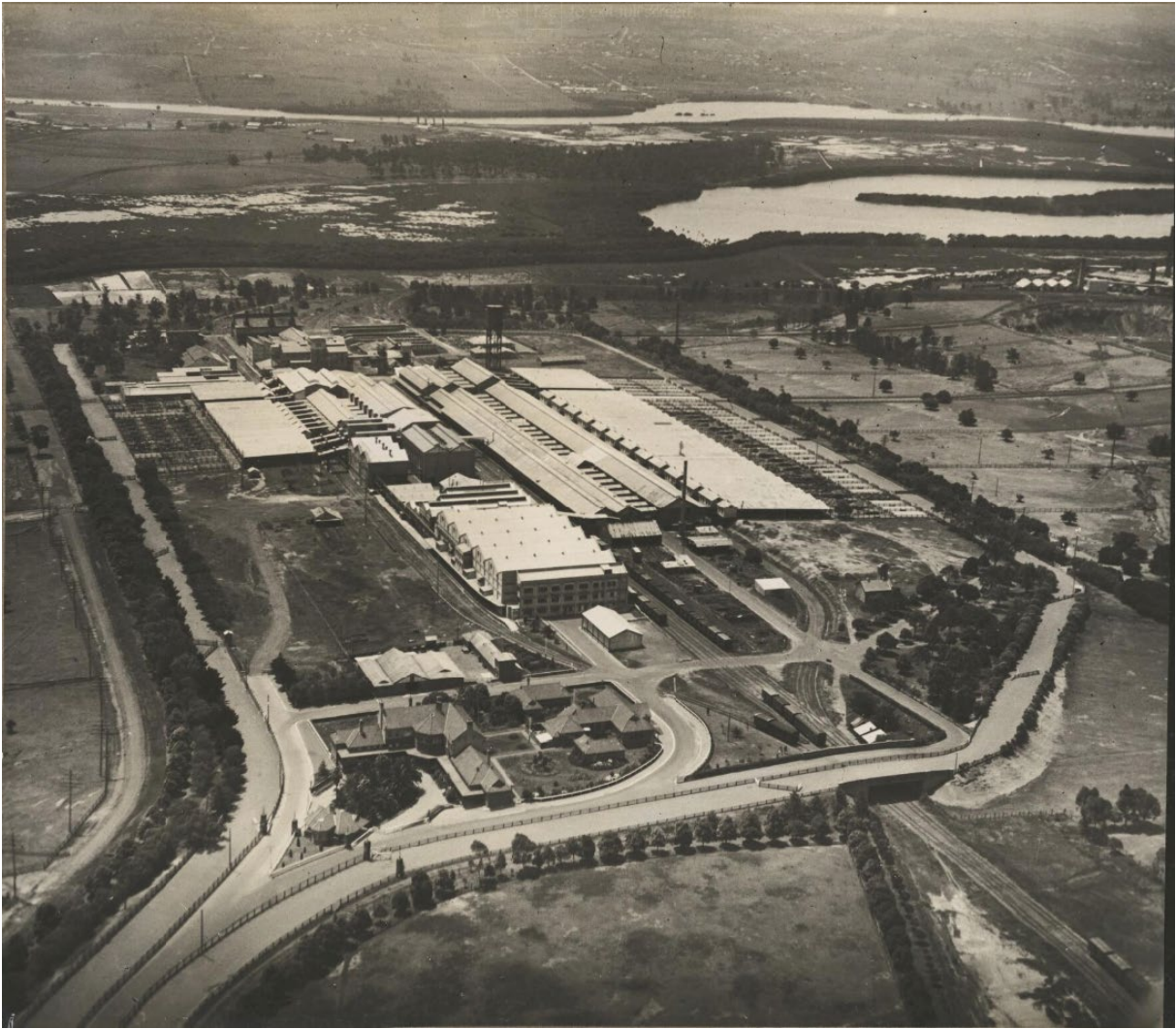


Figure 57: Aerial view of the State Abattoirs, c1930-1950⁷¹

⁷¹ E. W. Searle, c1930-1950. 'Aerial view of an industrial estate, Sydney region'. Accessed online 12 July 2019, <https://nla.gov.au/nla.obj-142184384/view>



Figure 58: View of the State Abattoirs in circa 1960s, showing gate house and administration buildings in the foreground, brickworks seen far right in the distance. (Source: Sydney Olympic Park Authority)

5.7.2 State Brickworks

A State Brick Works was located at the northern side of Homebush from 1911 (north east of the study area). Access roads were constructed, and a railway line was developed to provide access to the Brick Works. The Brick Works was used until its closure in 1940, when it was taken over by the Naval Armament Depot as a munitions store. It was later reopened following the end of World War II until it ceased trading in 1988. The area has been rehabilitated as a wetland area with a raised walkway called the Ring Walk for visitors.⁷²

As industrial development in Sydney expanded in the mid-twentieth century, locations to discard industrial waste were required. Homebush, at that time relatively undeveloped, was chosen as a dumping location for toxic waste.⁷³ Wentworth Bay was filled in with industrial waste and the natural ecology of the area was severely damaged. By 1988 there was an estimated 9 million cubic metres of waste and contaminated soils spread over 400 hectares within the 760 hectare site.⁷⁴

The southern portion of Homebush was developed as Sydney Olympic Park following the 1993 successful bid for Sydney to host the 2000 Olympic and Paralympic Games. Rehabilitation and stabilisation of the area was conducted due to the contamination from prior industrial use. The Sydney Olympic Park development involved construction of sports facilities, competitor housing, roads, and rejuvenation of parklands and streetscapes. In more recent years, further development

⁷² Sydney Olympic Park, n.d. 'Industrial History'.

⁷³ Ibid.

⁷⁴ Ibid.

has occurred at Sydney Olympic Park for commercial warehouses and high-density residential apartment buildings.

5.7.3 Sydney Olympic Park metro station construction site

The Sydney Olympic Park metro station construction site is located within the original grant made to Thomas Laycock in 1794, purchased and extended by D'Arcy Wentworth from 1810. Attempts were made for subdivision within Wentworth's estate during the latter half of the nineteenth century, however, these were largely unsuccessful with no known development occurring within the site until the establishment of the State Abattoirs (Figure 52 and Figure 55).

The construction site is located within an area resumed in 1907 for the State Abattoirs (Figure 55). The northern portion of the construction site covers the abattoir gatehouse and contributing landscaping, whilst the southern portion falls within an area utilised as sheep and pig yards. This is supported in a 1909 plan of the Abattoir (Figure 56). In addition, aerial imagery from 1943 and 1969 show the site within the same configuration as seen in the 1909 plan (Figure 59 - Figure 61). Homebush Bay had become a large tract of neglected land by the early 1980s, and the Abattoir was closed in 1988, after which, the area began redevelopment in 1993 for the establishment of Sydney Olympic Park by 2000.

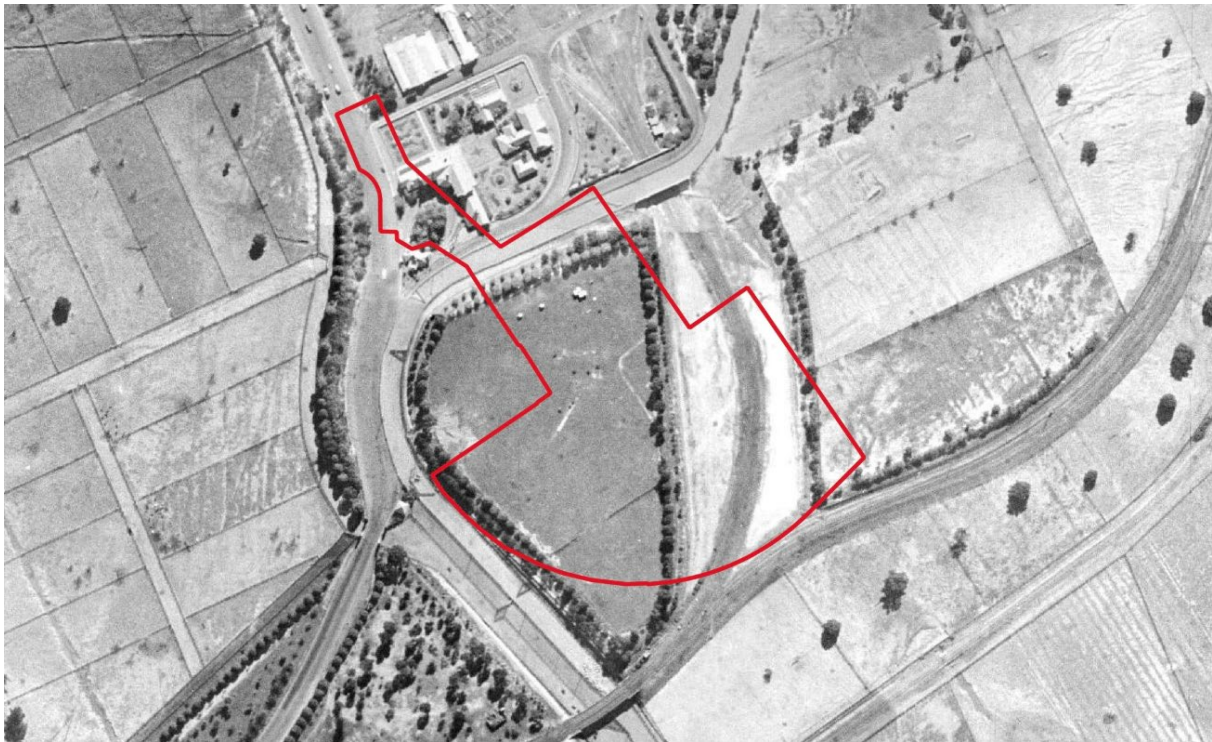


Figure 59: 1943 aerial imagery showing the State Abattoirs at the construction site, including areas of temporary occupation for demolition (outlined in red)



Figure 60: Homebush aerial, 1969, showing the construction site



Figure 61: Homebush aerial, 1969, showing the construction site

5.8 North Strathfield

In 1793, small land grants were portioned out to a group of farmers as the first grants to free settlers in the colony. The area subsequently became known as Liberty Plains, encompassing today's suburbs of Lidcombe, Auburn, Newington, Strathfield and part of Homebush Bay.⁷⁵ The settlers subsequently cleared the land and grew wheat and corn. Upon discovery that the land was poorly suited for arable farming, these early grants were abandoned, and their owners moved to more profitable grants on the Hawkesbury River and elsewhere.⁷⁶

Parramatta Road, having first been developed as a convict road between the colonies of Sydney and Parramatta from 1789, generally follows the alignment of the current Parramatta Road today and is approximately 650 metres south of North Strathfield Station. Lieutenant-Governor Francis Grose encouraged private farming in the area, and non-commissioned officers and soldiers of the NSW Corps were granted small landholdings along the road in the 1790s. The majority of these grants were immediately disposed of by their owners. Larger landholdings were apportioned along Parramatta Road, including D'Arcy Wentworth's 920-acre grant of "Home Bush" in the early 1800s.

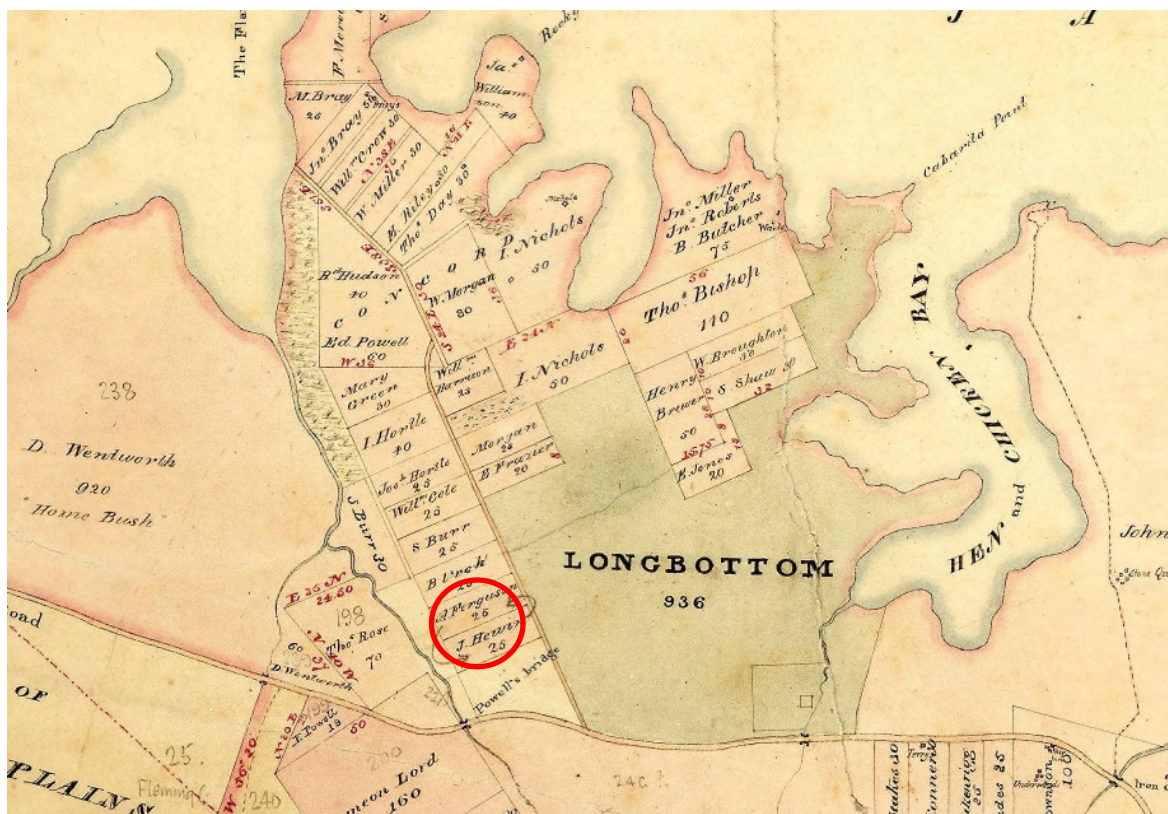


Figure 62: Early land grants within the parish of concord, Approximate location of North Strathfield metro station shown in red, c~1810 (Source: HLRV)

Development was generally slow in the area. Due to the poor quality of the soil for farming, small landholdings did not readily develop. By the early 1800s, the area was known as Concord. The settlement and development patterns within the area were not consolidated until the establishment of

⁷⁵ Terry Kass and Edmund Perrin, 2008. 'Liberty Plains' Accessed 4 May 2019, https://dictionaryofsydney.org/entry/liberty_plains

⁷⁶ Strathfield Council, 'European Settlement'. Accessed 4 May 2019, <https://www.strathfield.nsw.gov.au/council/about-strathfield/history-of-strathfield-local-government-area/european-settlement/>

a section of the Main North Line between Broadmeadow and Strathfield in 1886 and 1887. The Main North Line, formerly known as the Great Northern Railway, operated as the primary train route between Sydney and Brisbane. At the time of the opening of the Main North Line between Strathfield and Hornsby, stations were limited to Ryde, Dundas (Eastwood), Field of Mars (Epping), Beecroft, Thornleigh and Hornsby. In 1892 the Main North Line between Hornsby and Strathfield was duplicated.⁷⁷

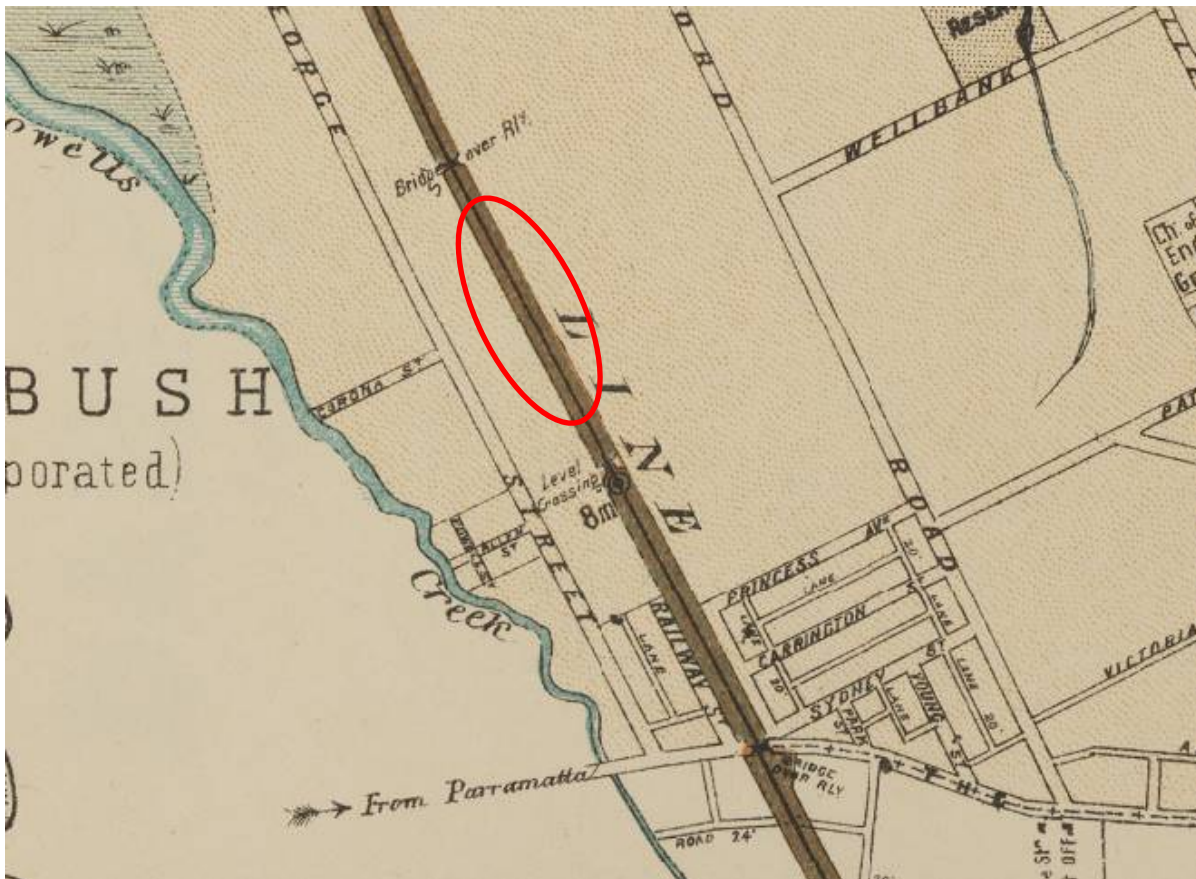


Figure 63: Higginbotham & Robinson map circa 1890s showing absence of development within North Strathfield, approximate location of North Strathfield metro station outlined red (Source: State Library of NSW)

In 1904, the first industrial development in the local area was established on the land to the west of the Main North Line near the existing location of North Strathfield Station. Over the next few years several factories were opened. This included the Arnotts biscuit factory in 1908, which was located to the south west of the current North Strathfield Station and established following the proposed construction of a dedicated rail siding off the Main North Line. Industrial development stimulated residential growth in North Strathfield. The factory continued to expand and by 1965 the North Strathfield industrial site covered 21.25 acres and employed 2,200 people.

In the early 1900's the NSW Railway Commissioner acknowledged the need for a station between the existing Strathfield and Concord West stations⁷⁸. The proposed railway station was readily embraced by locals, with subdivision plans as early as 1908 identifying a location to the east of Queen Street as the proposed location of North Strathfield Station. In 1915, local citizens created an action group to put pressure on the Government to progress with plans to build the station. The Chief Commissioner

⁷⁷ Office of Environment and Heritage, 2018 'North Strathfield Railway Station Group'. Accessed 4 May 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801029>

⁷⁸ City of Canada Bay Heritage Society, 2018 'Origin of North Strathfield Station'. Accessed 2 May 2019, <https://canadabayheritage.asn.au/origins-of-north-strathfield-station/>

later announced that construction of North Strathfield Station would begin before 30 June 1916⁷⁹. North Strathfield Station was officially opened on the 15 June 1918⁸⁰.



Figure 64: North Strathfield Station taken 1 June 1918 at opening of station platform. (Source: City of Canada Bay Library)

North Strathfield Station initially consisted of an island platform with brick station building and connecting steel trellis footbridge. The original footbridge included three stairways with entryways available from Queen Street and Hamilton Street East. The road overbridge at Pomeroy Street had also been constructed at this point. By 1928 a third platform was constructed at the station during the electrification of the rail line.

The establishment of North Strathfield Station bolstered the rapid subdivision and development of the area. By 1943, North Strathfield had developed into an expansive suburban area comprised of small residential allotments. Land to the west of the rail line continued to be used for industrial purposes with several rail sidings present.

Several modifications to North Strathfield Station have been undertaken. In 1994 the pedestrian overbridge was replaced with the current concrete bridge, and an existing entrance pathway from Hamilton Street East was removed with the current configuration of the entrance way developed. In 2012, a third entrance was added to the station with a ramp from Pomeroy Street constructed, and the North Strathfield Rail Underpass Project was approved. In March 2019, works on the North Strathfield Station Transport Access Program upgrade commenced, involving accessibility upgrades at the eastern entry of the station off Queen Street. These works include addition of lifts and modifications to the existing overbridge.

⁷⁹ City of Canada Bay Heritage Society, 2018 'Origin of North Strathfield Station'.

⁸⁰ City of Canada Bay Heritage Society, 2018 'Origin of North Strathfield Station'.

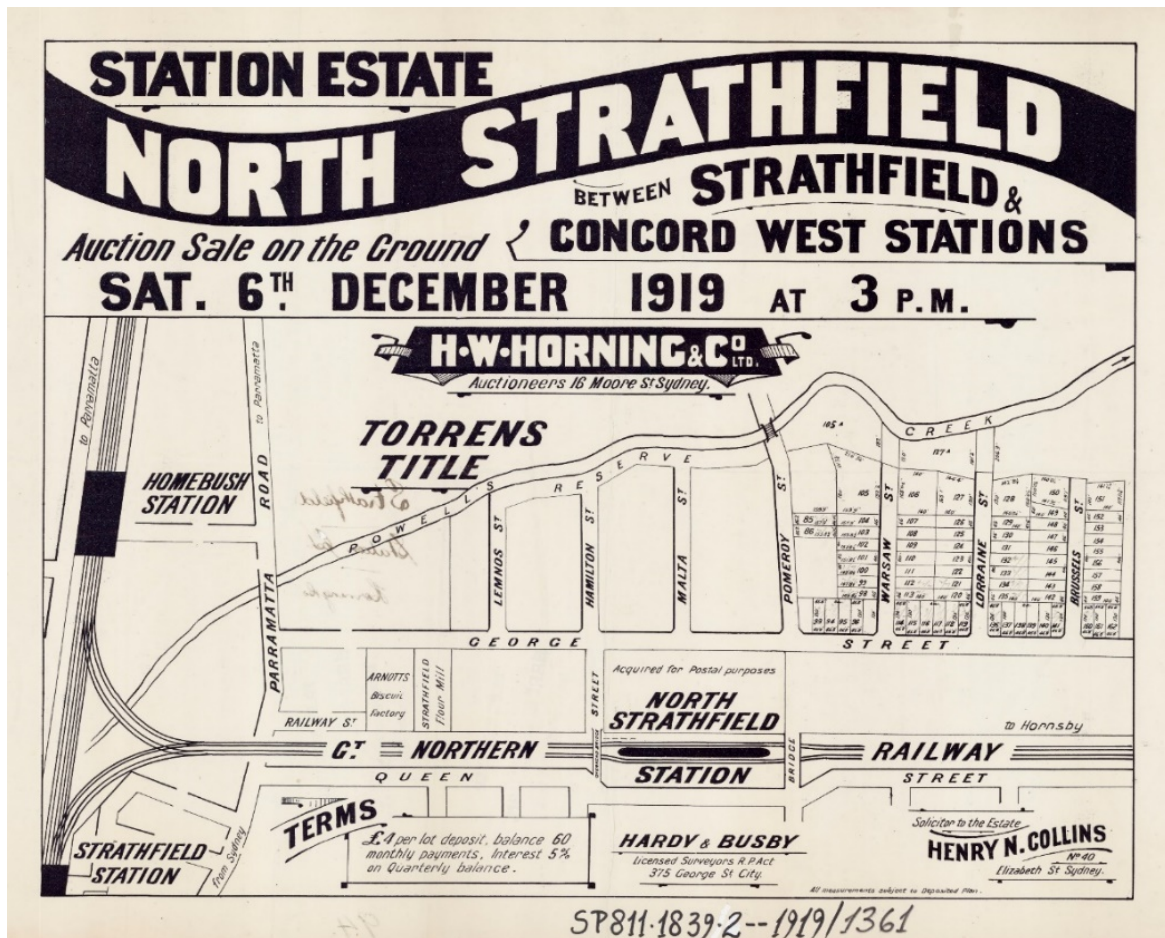


Figure 65: Station estate subdivision highlighting presence of North Strathfield Station c1919⁸¹

⁸¹ Author unknown, 1919. 'North Strathfield Subdivision Plan'. Accessed 8 April 2019, http://digital.sl.nsw.gov.au/delivery/action/collectionViewer.do?navigation=1&collectionId=485434480&pageNum=20&operation=viewCollection&displayType=list&_ga=2.45885100.98093561.1557101215-1253220162.1521507713

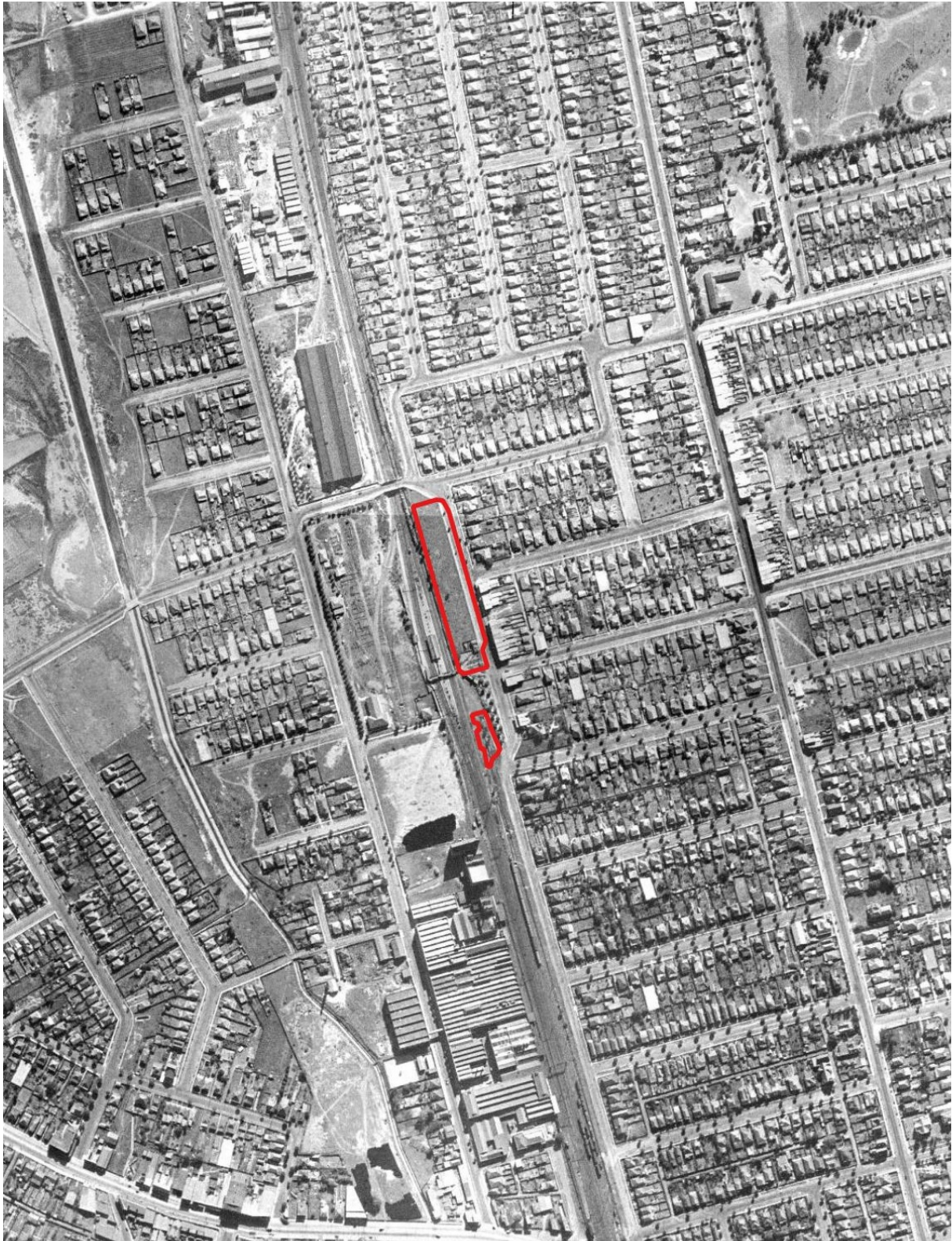


Figure 66: 1943 Historical aerial showing residential development to the east of North Strathfield Station, with empty yards to west (construction site outlined in red)⁸²

⁸² Sixmaps, 2019, '1943 aerial imagery'. Accessed online 8 April 2019, <https://maps.six.nsw.gov.au/>

5.8.1 North Strathfield metro station construction site

From 1793, small land grants were made within the Strathfield area. The North Strathfield metro station construction site straddles original grants made to A. Ferguson and J. Hewin at 25 acres each. Development was slow within the area due to unsuccessful farming conditions and, the site remained largely undeveloped until the coming of the railway between 1916-1918.

1943 aerial imagery and written sources provide evidence of the development of dense residential housing surrounding the station (Figure 66). The land within the construction site has continued to contain North Strathfield Station and associated buildings, as well as open parkland at both the northern and southern portions of the site. It appears the site has not contained other substantial buildings other than those extant from point of first land grants to present.

In October 2012, the North Strathfield Rail Underpass Project was approved. The project consisted of the construction of a new rail underpass at North Strathfield Station. Major works were completed in June 2015 and included the use of much of the current construction site as a laydown area.⁸³ Lastly, the North Strathfield Station Upgrade was approved as part of the Transport Access Program. The works commenced in mid 2019 with works expected to be completed by 2020. These works include the installation of new elevators, accessible parking, improved amenities and upgrades to CCTV and lighting.⁸⁴

⁸³ Transport for NSW, 2017. 'North Strathfield Rail Underpass'. Accessed 1 May 2019, <https://www.transport.nsw.gov.au/projects/current-projects/north-strathfield-rail-underpass>

⁸⁴ Transport for NSW, 2019. 'North Strathfield Station Upgrade'. Accessed 21 July 2019, <https://www.transport.nsw.gov.au/projects/current-projects/north-strathfield-station-upgrade>

5.9 Burwood North

In the 1790s, the government's Longbottom Stockade and Farm was established on land now occupied by the Burwood North locality (north of Parramatta Road). The area was selected by Governor Phillip, soon after the establishment of the Government Farm at Rose Hill, as the halfway point between Sydney and Parramatta. The stockade provided an overnight lockup and rest point for convict road gangs. The stockade was near Parramatta Road, around the approximate location of the grandstand within Concord Oval. In 1793, the stockade was described as comprising nine huts, sixty acres of cleared land and twenty acres under cultivation for growing corn. The land to the north of the stockade was heavily timbered and became progressively marshy as it reached Hen and Chicken Bay. These characteristics resulted in the area being named Longbottom, referencing the old English word 'bottom' used to describe the low-lying, swampy alluvial landscape in northern England (Figure 67).⁸⁵

In 1819, the Longbottom Government Farm became operational when Crown land was combined with land that had been returned to the government by D'Arcy Wentworth to form the 700 acre farm.⁸⁶ In 1820, 110 convicts were employed at Longbottom, most working as timber fellers, charcoal burners, sawyers and shinglers. By March 1825 there were 38 convicts at Longbottom. By this time, most of the timber on the land had been felled and the convict huts were occupied by an itinerant road party. In 1828, there were only six men living at the farm full time. In 1837, part of the Longbottom Farm was sold off and the area was reduced to about 280 hectares (690 acres). Convict road gangs were still housed in the original stockade buildings and a small detachment of mounted police were also stationed there. Much of the land was unused and derelict.⁸⁷

In 1840, the Longbottom Stockade site assumed a new function when it became the detention centre for a group of French-Canadian political exiles. The exiles worked in the stone quarry, made bricks for public buildings in Sydney, felled trees and sawed the wood into blocks of building timber, along with establishing themselves new barracks. Between November 1843 and February 1844, free pardons were awarded to all the Canadian prisoners. Longbottom Stockade fell into disrepair, and a new lockup was subsequently established further west along Parramatta Road near Concord Road.

A ramshackle village comprising several buildings had established around the Longbottom Stockade following establishment of Wharf Road (now Burwood Road).⁸⁸ In 1843, a formal plan for the Village of Longbottom was drawn up and land surrounding the township subdivided. The site extended just beyond Broughton Street to the west and east to Taylor Street, and extended north from Parramatta Road to near Crane Street.⁸⁹ In 1858, land surrounding the Village of Longbottom and stockade was further subdivided. The rate of development was slow. The plan also shows a chapel, school and cottage located at the south-east corner of the intersection of Stockade Street (Loftus Street) and Parramatta Road, although historical records suggest these were never constructed. In 1886, a large area of just over 66 acres (26 hectares) was dedicated as a recreation area, to be known as St. Luke's Park. Today, this land is occupied by Concord Oval (now known as "Waratah Park"), St. Luke's and Cintra Parks.

Concord Oval itself was reconstructed in 1932. In 1982, the Western Suburbs District Rugby Union Football Club began negotiations with the Sydney Rugby Union to upgrade Concord Oval into a

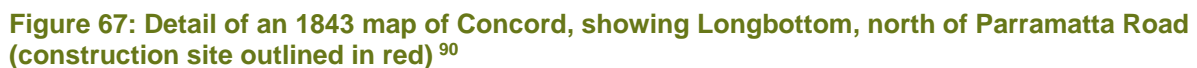
⁸⁵ Canada Bay Heritage, 'Longbottom Stockade'. Accessed 4 May 2019, <https://canadabayheritage.asn.au/ccbhs-history/longbottom-stockade/>

⁸⁶ Burwood Council, n.d. 'Local History'. Accessed 4 May 2019, https://www.burwood.nsw.gov.au/our_burwood/history/local_history.html

⁸⁷ Canada Bay Heritage, 'Longbottom Stockade'.

⁸⁸ Canada Bay Heritage, 'Longbottom Stockade'.

⁸⁹ Canada Bay Heritage, 'Longbottom Stockade'.



⁹⁰ Author unknown, 1843. 'Concord'. Accessed 8 May 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps_pid=IE8763400&_ga=2.214188575.98093561.1557101215-1253220162.1521507713

5.9.1 Burwood North Station northern construction site

The Burwood North Station northern construction site is located within the original curtilage of Longbottom Government Farm. A number of structures were built within the farm which housed and serviced convict workers. Activities at the farm consisted of the cutting and sawing of timber. An estate sale sketch plan from 1928 indicates that the shops at the corner of Burwood and Parramatta Roads had been developed by this point (Figure 69). In addition, the Pine Inn Hotel (formerly Oriental Hotel) was constructed in c1920.⁹²

1943 aerial imagery reveals that a number of the structures extant today are the same as seen in 1943, however, there are also several notable changes. This includes the demolition of all residential structures east of Neichs Lane; replaced by either additional commercial buildings or carparking facilities. The present-day structures seen in the 1943 imagery appear to be in the Inter-War Stripped Classical architectural style, however, exact construction dates remain unknown.

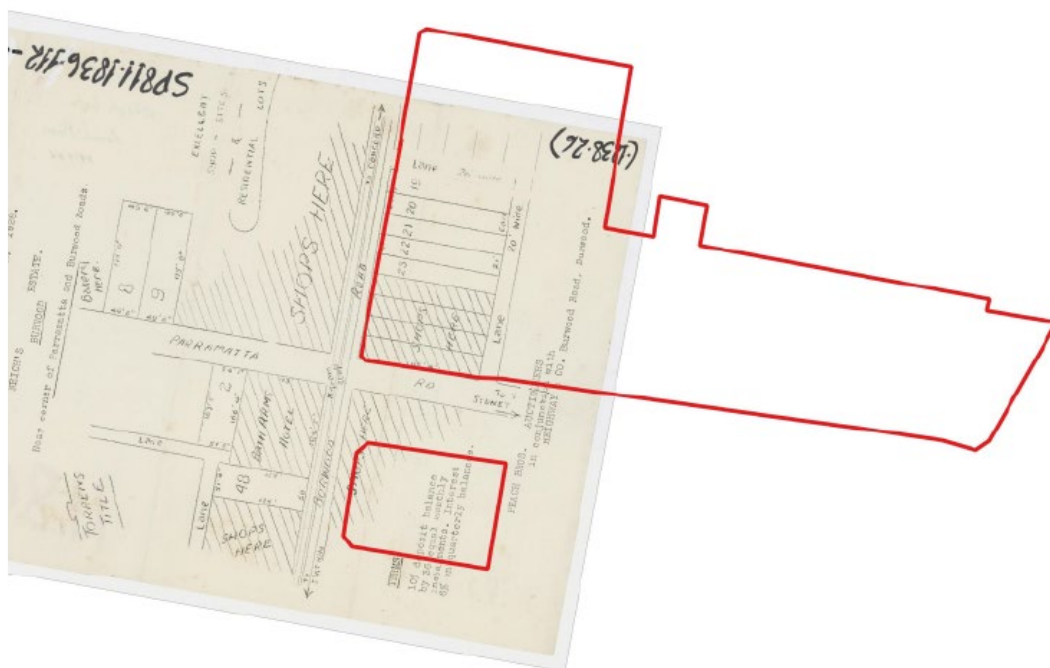


Figure 69: Neich's Estate Sale Plan, 1928. Showing shopfronts had been developed at this time (construction site outlined in red)⁹³

⁹¹ F.H. Reuss, c1829-1850. 'Village of Longbottom'. Accessed 4 May 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?embedded=true&toolbar=false&dps_pid=IE8777894&_ga=2.110323341.98093561.1557101215-1253220162.1521507713

⁹² ANU, date unknown. 'Item 497 – Pine Inn Hotel (ex-Oriental Hotel)'. Accessed 1 May 2019, <http://archivescollection.anu.edu.au/index.php/pine-inn-hotel-ex-oriental-hotel-to-1980-cnr-parramatta-and-burwood-streets-concord-2>

⁹³ Peach Bros. 'Auction Sale – Neich's Estate, Burwood'. Accessed 1 May 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=IE9119474&change_lng=



Figure 70: 1943 aerial imagery, northern construction site outlined in red⁹⁴

5.9.2 Burwood North Station southern construction site

The Burwood North Station southern construction site is located within the original 250-acre land grant made to Thomas Rowley in 1799. Rowley soon renamed the land 'Burwood' after his previous farm within Cornwall and acquired up to 750 acres by 1802.⁹⁵ Rowley died in 1806, bestowing his holdings to his five children. However, the property Trustee gave approval for the land to be sold to Alexander Riley in 1812 for £520 (Figure 71). Under Riley's ownership, 500 acres of the land was cleared and cultivated. Riley would eventually acquire up to 1000 acres at the site.

An estate sale sketch plan from 1928 indicates that the shops at the corner of Burwood and Parramatta Roads had been developed by this point (Figure 69). 1943 imagery of the construction site reveals that the present-day structures remain the same as seen in 1943. These present-day appear to be in the Inter-War Stripped Classical architectural style, however, exact construction dates remain unknown.

⁹⁴ SixMaps, 1943. 'Burwood North'. Accessed 30 April 2019, <https://maps.six.nsw.gov.au/>

⁹⁵ Antique Print & Map Room, n.d. 'Burwood Villa, NSW. The Property of Alexander Riley Esq'. Accessed online 20 April 2019, <https://antiqueprintmaproom.com/burwood-villa-new-south-wales-the-property-of-alexander-riley-esq>

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5.10 Five Dock

In 1788, Captain John Hunter of the *H.M.S Sirius* surveyed the foreshores of the Drummoyne Municipality. This included Iron Cove, Drummoyne, Five Dock Bay and Hen and Chicken Bay. The area became known as the 'Eastern section of the District of Concord' by c1790 and a portion was subdivided by Major Francis Grose, granting farms to members of the NSW Corps in 1794. A number of these grants were reverted to crown land, however in January 1806, Governor King granted the present Five Dock, Russell Lea, Abbotsford and Drummoyne area to Surgeon John Harris (Figure 73). This 1,500 acre area became known as Five Dock Farm.⁹⁸

In 1828, Surveyor-General Sir Thomas Mitchell marked out a new road, passing through Five Dock Farm which would later become known as the Great North Road (Figure 73). The road was formed using convict gangs who cleared the land of trees and bush. The road eventually ran from the junction at Parramatta Road north towards Abbotsford Point, where a punt was installed.⁹⁹ Harris sold his holdings at Five Dock to ex-convict Samuel Lyons on 17 September 1836. Lyons subdivided the land with sales occurring from 24 January 1837. 133 lots were auctioned, which varied in size from 2 – 69 acres 'to suit the means of all classes of buyers'.¹⁰⁰

The period of 1900 to 1930 saw a significant influx of Italian immigrants moving to Five Dock, particularly from the Aeolian Islands off the north coast of Sicily. From this point, Five Dock rapidly grew as a residential suburb and the twentieth century saw the area become an industrial hub in the Inner West. In addition, the large Italian population established a vibrant cultural with an abundance of Italian food stores, restaurants and festivals including the Ferragosto Street Festival, a celebration of the Aeolian people and their influence over Five Dock.¹⁰¹



Figure 73: Detail of Concord Parish map, undated, showing John Harris' grant and the Great North Road alignment (construction site outlined in red)¹⁰²

⁹⁸ Rotary Club of Five Dock, n.d. 'History of Five Dock'. Accessed 4 April 2019, <http://www.rotarynews.info/2/club/4417/4420>

⁹⁹ Frances Pollon, 1991, *The Book of Sydney Suburbs*. Angus and Robertson, Sydney, p. 104.

¹⁰⁰ Gregory Blaxell, 2010. *Pictorial History: City of Canada Bay, Drummoyne to Canada Bay*. Kingsclear Books, Sydney: p. 38.

¹⁰¹ Canada Bay Club, 2018. 'Five Dock'. Accessed online 5 July 2019, <https://canadabayclub.com.au/article/top-10-facts-about-five-dock-sydney>

¹⁰² Land Registry Services, n.d. 'Parish of Concord'. Accessed 4 April 2019, <http://hlrv.nswlrs.com.au/pixel.htm#>

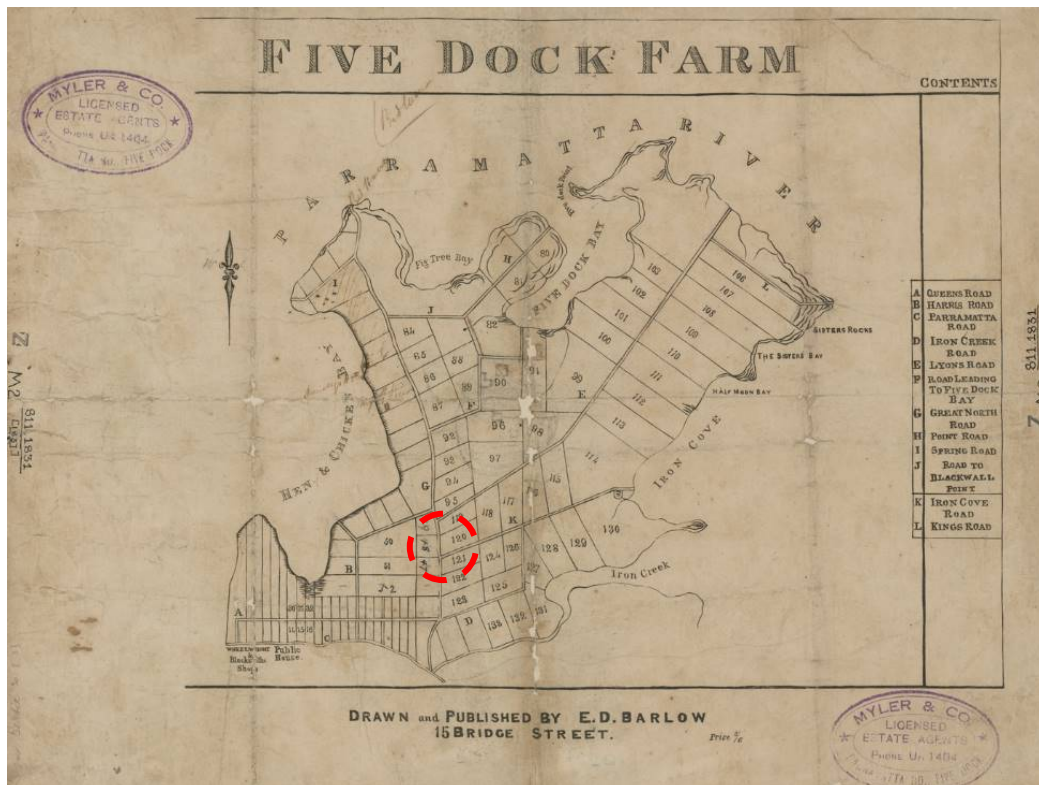


Figure 74: Five Dock Farm, 1837 (approximate construction site outlined in red)¹⁰³

5.10.1 Five Dock Station western construction site

Subdivision at Five Dock took place throughout the 1880s, however, there is limited written history and historic plans relating to the exact date of subdivision at the western Five Dock Station construction site. Subdivision plans from 1901 and 1915 show the study area without any structures; however, this information is not certain (Figure 75 - Figure 77). 1943 aerial imagery shows commercial buildings facing the Great North Road along the eastern portion of the site and three residential homes lining East Street, along the western portion of the site (Figure 78). In addition, a World War II trench is visible along the southern portion of the site. It is unclear when the residential homes were demolished to make way for parking facilities and additional commercial structures.

¹⁰³ E.D. Barlow, 1837. 'Five Dock Farm'. Accessed online 5 July 2019, <https://canadabayclub.com.au/article/top-10-facts-about-five-dock-sydney>

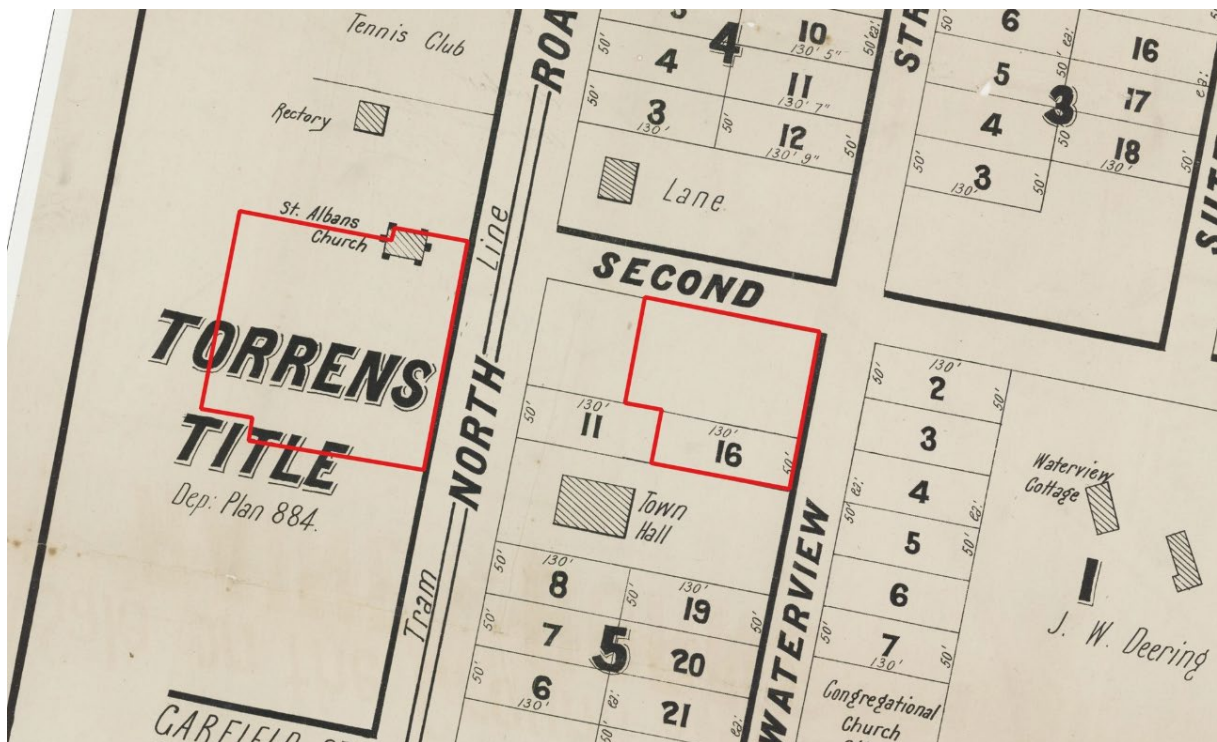


Figure 75: Detail of Five Dock subdivision plan, 1901, showing the construction site outlined in red (note: St Albans Church has been drawn incorrectly and is directly north of the western study area)

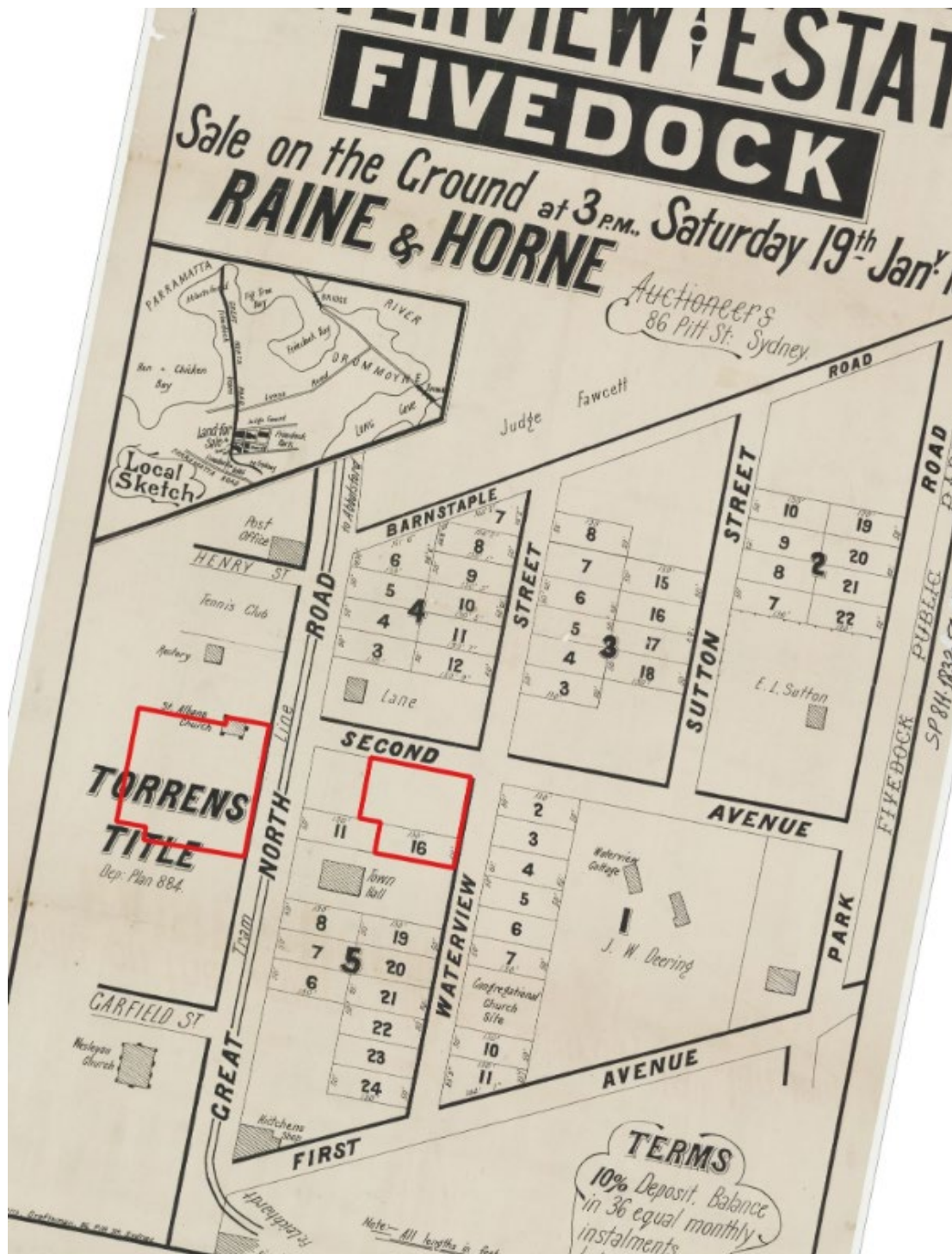


Figure 76: Five Dock subdivision plan, 1901, showing the construction site outlined in red (note: St Albans Church has been drawn incorrectly and is directly north of the western study area)

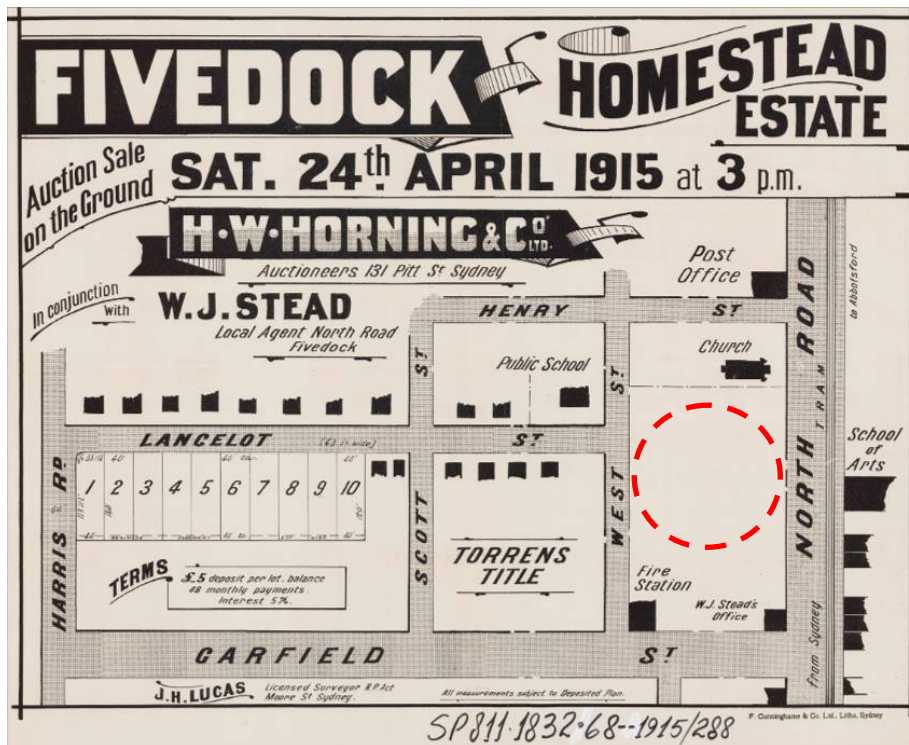


Figure 77: Five Dock subdivision plan, 1915 (approximate location of Five Dock Station western construction site outlined red)¹⁰⁴



Figure 78: 1943 aerial imagery (construction site outlined red)¹⁰⁵

¹⁰⁴ HW Horning & Co, 1915. 'Five Dock Homestead Estate'. Accessed 9 April 2019, http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=IE10424603&change_ing=

¹⁰⁵ SixMaps, 1943. 'Five Dock'. Accessed 30 April 2019, <https://maps.six.nsw.gov.au/>



Figure 79: Aerial view of Five Dock showing the western construction site outlined in red, 2014, looking west¹⁰⁶

5.10.2 Five Dock Station eastern construction site

Five Dock was subdivided during the 1880s, during which time the suburb took on much of the configuration seen today. Plans reveal subdivision at the southern Five Dock Station construction site took place in 1888, within what was known as the 'Waterview Estate' (Figure 80 - Figure 81). The site is located within Lots 12-15 of Section 5 within this subdivision. From the point of subdivision, residential homes were built within Lots 14-15, evidence of this is provided within 1943 aerial imagery of Five Dock (Figure 77). A larger structure is seen at lots 12-13 in 1943 aerial imagery; however, it is unclear the purpose of this structure. This structure was demolished and replaced with an apartment building and carpark; however, it is unclear as to when these demolition and construction phases took place.

¹⁰⁶ Mark Merton, 2014. 'A close shot of Great North Road in Five Dock'. Accessed online 30 April 2019, <https://www.sydneymages.com.au/-/aerial-photography-gallery/five-dock-aerial-photography/-/medias/eff9cfc5-f9d3-4a5d-aa73-261264637103-five-dock-detail>

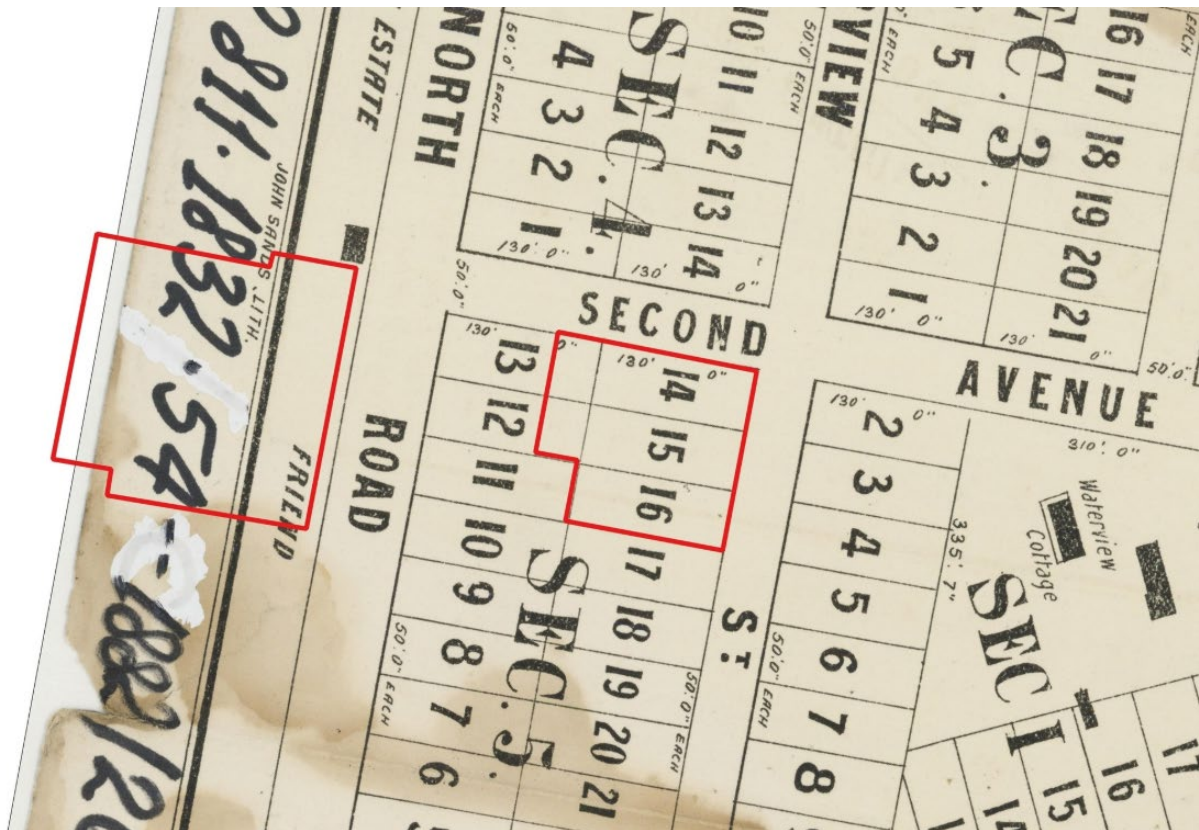


Figure 80: Detail of Five Dock subdivision plan, 1888 (Five Dock Station eastern construction site outlined in red) ¹⁰⁷

¹⁰⁷ Author unknown, 1888. 'Five dock subdivision plan'. Accessed 8 April 2019, https://search.slnsw.gov.au/primo-explore/fulldisplay?docid=SLNSW_ALMA21140265000002626&context=L&vid=SLNSW&lang=en_US&tab=default_tab

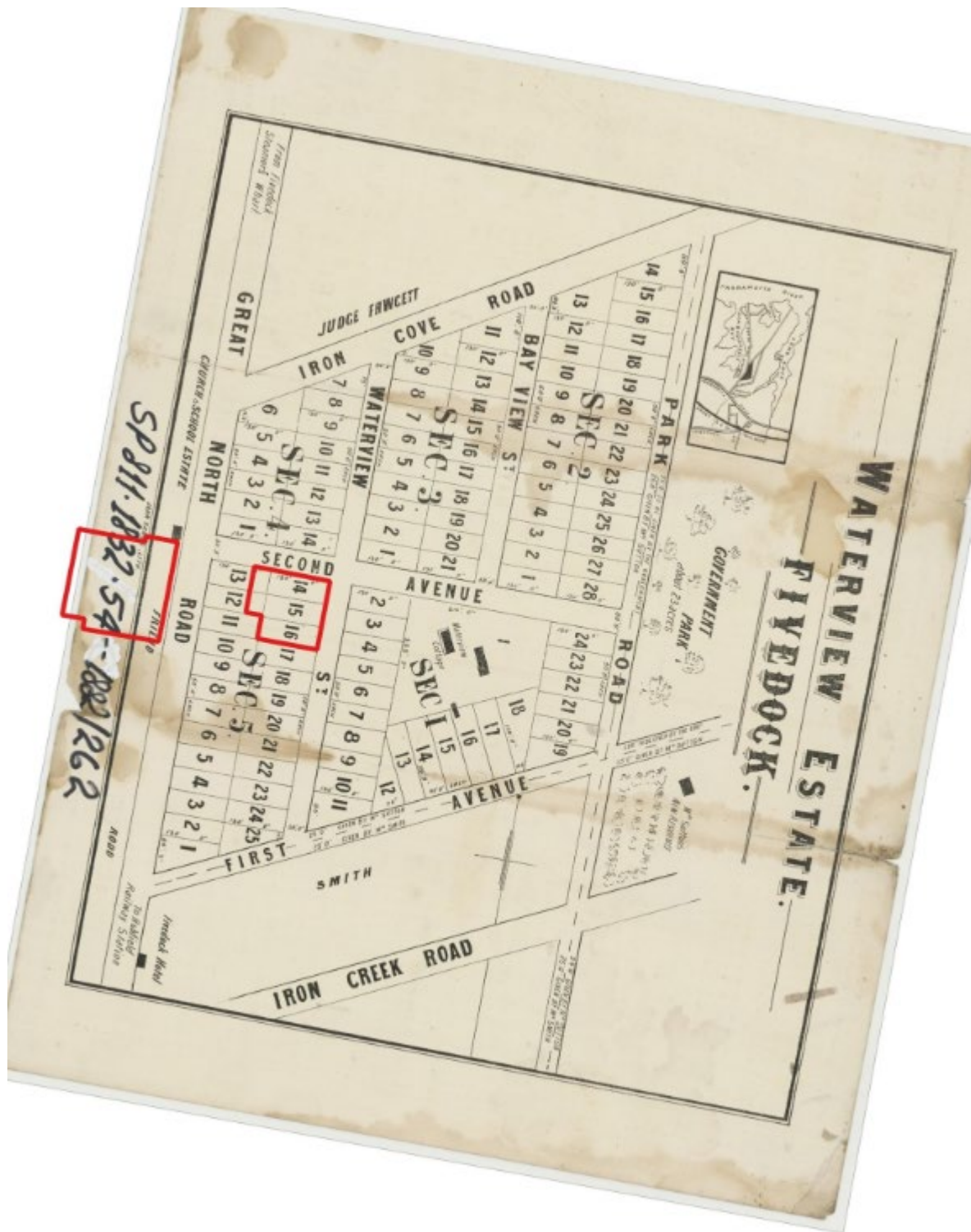


Figure 81: Five Dock subdivision plan, 1888 (Five Dock Station construction site outlined in red)¹⁰⁸

¹⁰⁸ Author unknown, 1888. 'Five dock subdivision plan'. Accessed 8 April 2019, https://search.slnsw.gov.au/primo-explore/fulldisplay?docid=SLNSW_ALMA21140265000002626&context=L&vid=SLNSW&lang=en_US&tab=default_tab

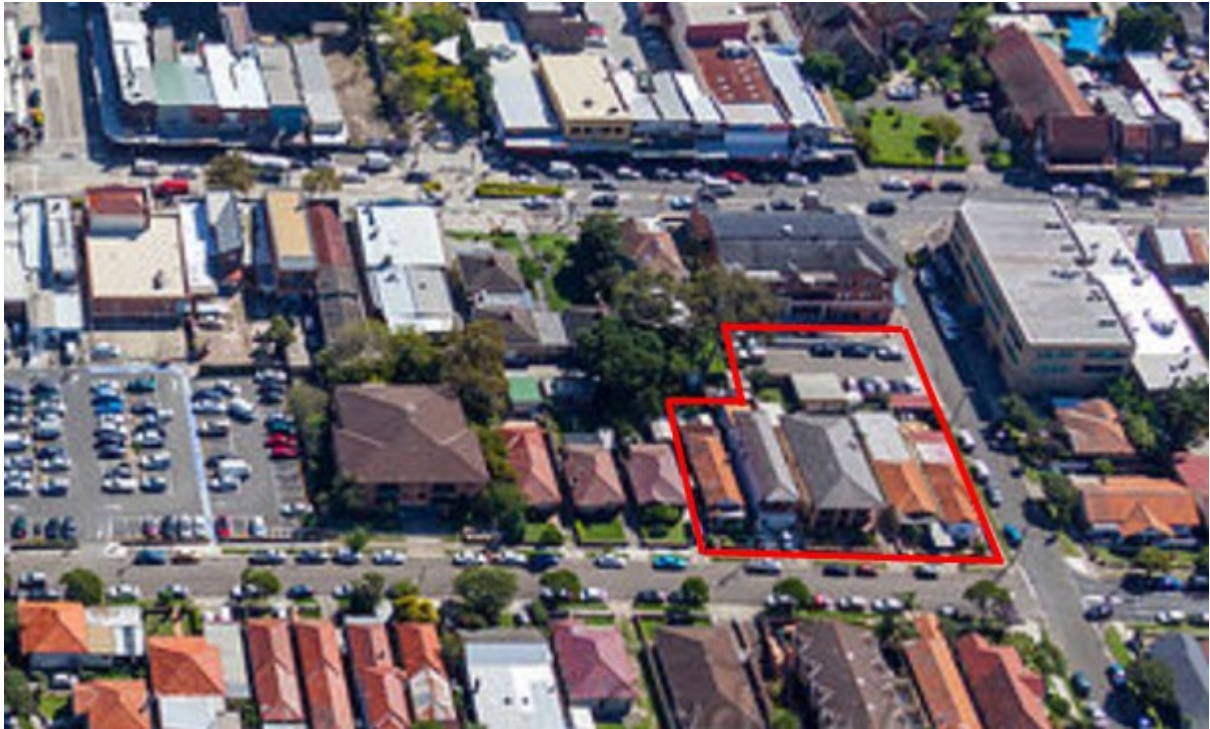


Figure 82: Aerial view of Five Dock showing the Five Dock Station eastern construction site outlined in red, 2014, facing west¹⁰⁹

¹⁰⁹ Mark Menton, 2014. 'A View over Great North Rd, Five Dock'. Accessed online: <https://www.sydneymetrowest.com.au/-/aerial-photography-gallery/five-dock-aerial-photography/-/medias/6974b640-9c62-41dc-b293-32d1c3200e3f-five-dock>

5.11 White Bay (The Bays)

White Bay was named after a naval surgeon and botanical collector, John White, who came to Australia aboard the convict transport ship, *Charlotte*, with the First Fleet in 1788.¹¹⁰ The first grant encompassing White Bay was made to George Johnston in 1799. The study area straddles this grant; another made to William Balmain in 1800, a grant to John Piper in 1811 and a 50-acre grant made to Francis Lloyd in 1819 (Figure 83).¹¹¹ The bay originally extended much further southwest to current-day Victoria Road, almost joining with Rozelle Bay to make Glebe Island, almost an island. However, the Harbour Trust reclaimed the headwaters during the early twentieth century. The approaches to the Anzac Bridge are built on the built-up causeway to Glebe Island which now separated White Bay and Rozelle Bay.¹¹²

The geographical relationship between White Bay, its long water frontage and its close proximity to Sydney CBD was paramount in its development. Roads and available transport to Sydney was often uncertain, expensive and time consuming, which water travel offered quick, reliable and relatively cheap transportation to carry both passengers and merchandise to and from the area.¹¹³

Subdivisions occurred throughout the late-1820s with wealthy and prominent members of Sydney society buying up property along the Johnston's Bay foreshore. These subdivisions, and the utilisation of the waterfront, led to the establishment of a number of industries within the Bay during the 1830s. By the early 1840s, a boiling down works run by W. Bell Allen was constructed at Blackwattle Bay, Bensusan and Musson established a copper smelting works on Johnston's Bay at Annandale and at Glebe Island, abattoirs were constructed during the 1850s. During the 1860s, the future site of White Bay Power station was subdivided for housing; this remained until the power station development during the early twentieth century. In 1861, a causeway near White Bay, connecting Glebe Island with Victoria Road was proposed.

The close of the nineteenth century saw extensive land reclamation programs at Glebe Island which significantly altered the natural landscape. In 1889, the tidal swamp along the boundaries of Glebe and Annandale were reclaimed; the 1890s saw Blackwattle Swamp filled in; and Johnsons Creek was channelled underground.

¹¹⁰ NSW Government Geographical Names Board, date unknown. 'White Bay'. Accessed online: http://www.gnb.nsw.gov.au/place_naming/placename_search/extract?id=SXckoeWAan

¹¹¹ Wendy Thorp, 1990. *Draft Report: Thematic History of White Bay and Glebe Island - Central Railway to Eveleigh Heritage Study*. Department of Planning, Sydney: p. 9.

¹¹² Graham Spindler, 2011. 'historical Notes and Background'. Accessed 4 April 2019, <http://www.walkingcoastalsydney.com.au/brochures/documents/HC2011Day4HistoricalNotesApril2011.pdf>

¹¹³ Wendy Thorp, 1990. *Thematic History: White Bay, Glebe Island Heritage Study*. Department of Planning, Sydney, p. 9.



Figure 83: Detail of Parish of Petersham map, date unknown (construction site outlined in red). Showing George Johnston's 1799 land grant (290 acres), William Balmain's 1800 grant (550 acres), John Piper's 1811 grant (165 acres) and Francis Lloyd's 1819 grant (50 acres) ¹¹⁴

5.11.1 Bald Rock and ferry

At the corner of present-day Buchanan Street and Roberts Street, a quarried bluff is situated. This forms part of the original Bald Rock promontory, named due to the absence of vegetation. During the nineteenth century and into the twentieth century, two public wharves were situated here; the Reynolds Street and Bald Rock ferry wharf (Figure 84). The Bald Rock ferry was operated by John Watson and his family. The Bald Rock ferry ran from Bald Rock to Erskine Street and was soon formed into the company of John Watson & Co. The Balmain Steam Ferry Co. bought out John Watson and his fleet of paddlewheel steam ferries in 1887. The Bald Rock ferry wharf offered passenger services up until the 1960s during which time the local government cut down the Bald Rock promontory, almost to water level.

¹¹⁴ Land Registry Services, date unknown. 'Parish of Petersham Map'. Accessed online: <http://hlrv.nswlrs.com.au/pixel.htm#>



Figure 84: Bald Rock Ferry, Balmain, 1946¹¹⁵

5.11.2 John Booth's Steam Saw Mills

From 1854, White Bay was dominated by John Booth's Steam Saw Mills, the first substantial timber and joinery works within Sydney (Figure 85). Booth, a shipbuilder, had begun the operation in order to take advantage of the need for timber, supplying the emerging boat and ship building industries within Balmain.¹¹⁶ He was a prominent citizen within Balmain, becoming the suburb's Mayor in 1867. Booth's mills stretched along the Balmain shoreline from Booth Street to Stephen Street. The mills were destroyed in 1874 during a fire but were rebuilt, producing up to 200,000 feet of timber per week at the height of production.¹¹⁷ The mills sourced timber from their sawmills along the Manning River and northern Queensland and even built their own ships up until the c1880s, at which point, the mills had become the second largest industrial enterprise within Balmain, after Morts Dock.¹¹⁸

During operation, the mills produced a wide range of timber products which they were able to distribute throughout Sydney by water. In addition, Booth acquired land immediately behind the mill, along Donnelly Street, on which he built and acquired houses. The saw mill ceased trading in 1902, however, the site was continually used by timber or manufacturing enterprises up until 1923, most notably by Morrison and Sinclair Shipbuilders from 1904-1923. The Sydney Harbour Trust purchased White Bay in 1923, establishing a shipyard. In 1929, the site was leased to the Atlantic Union Oil

¹¹⁵ Author unknown, 1946. 'Bald Rock ferry, Balmain'. Accessed 4 April 2019, <http://archival.sl.nsw.gov.au/Details/archive/110105161>

¹¹⁶ Benjamin Wharton, 2016. *Changing Tides: A cultural Landscape Study of the Maritime Community in Balmain*. University of New England, NSW, p. 57.

¹¹⁷ Peter Reynolds, 2008. 'White Bay'. Accessed 4 April 2019, https://dictionaryofsydney.org/structure/john_booths_steam_saw_mills

¹¹⁸ Spindler, 2011. 'historical Notes and Background'.

Company (later Esso).¹¹⁹ To make way for the oil terminal, a number of houses, directly associated with the Booth family including *Wonga* (1958), *Surbiton* (1855) and *Undercliff* (1862) in 1928.



Figure 85: John Booth and Co., Steam Saw Mills and Joinery Works, Balmain, 1880¹²⁰

5.11.3 Australian Gas Light Company

The Australian Gas Light Company (AGL) was formed in 1837. The company manufactured gas, distributing it for town gas street lighting from 1841. A gasworks was constructed along the White Bay waterfront, approximately at the corner of Robert Street and Mansfield Street, in 1875 to reticulate gas for street lighting up until electric street lighting superseded gas lighting in Balmain in 1909.¹²¹

5.11.4 Glebe Island Abattoir

In 1850, the government resumed land at Glebe Island for the construction of an abattoir by an Act of Parliament. Work began in 1853 with the abattoir commencing operation in 1860. The first structures to open were designed by Colonial Architect Edmund Blacket. Meat was transported from the abattoir to Sydney via a punt to Pyrmont, where butchers waited to collect via carts. During the c1860s, a low level timber framed bridge named 'Blackbutt' was constructed by the Pyrmont Bridge Company, connecting the island to Pyrmont. The bridge operated as a toll bridge and drawbridge and replaced the earlier punt. By this point, tanners, tripe makers and soap and candle manufacturers were all working within close proximity to the abattoir.¹²²

Shortly after establishment, there were calls from Balmain and Glebe residents for the closure of the abattoir due to poor management, unsanitary conditions and an unbearable smell which lead to the

¹¹⁹ Spindler, 2011. 'historical Notes and Background'.

¹²⁰ Author unknown, 1880. 'J. Booth and Co., timber merchants, Balmain Steam Saw Mills and Joinery Works'. Accessed 4 April 2019, <http://archival.sl.nsw.gov.au/Details/archive/110317186>

¹²¹ Peter Reynolds, 2008. 'White Bay'. Accessed April 4, 2019, https://dictionaryofsydney.org/entry/white_bay

¹²² Glebe Society Bulletin, 2006. 'Glebe's Industrial History'. Accessed online 8 July 2019, https://www.glebesociety.org.au/wp-content/uploads/bulletins/2006_03.pdf

1883 Royal Commission into noxious and offensive trades. The Commission revealed that at the facility, blood was converted into fertilizer, waste materials were boiled down, blood and offal were dumped into the harbour and cattle, sheep and pigs were driven through the surrounding suburban streets. Despite the severe conditions and push for closure, the Commission recommended improvements rather than closure.¹²³

By 1903, it was revealed that secret overflows were still being dumped into Blackwattle Bay which was at times described as 'blood red'. Construction of a new abattoir at Homebush was authorised in 1906 and by 1916, the Glebe Island Abattoir, which was described as 'a noxious nuisance...a source of serious loss to the government... and hopelessly out of repair', had closed.¹²⁴



Figure 86: Glebe Island Abattoir, 1896¹²⁵

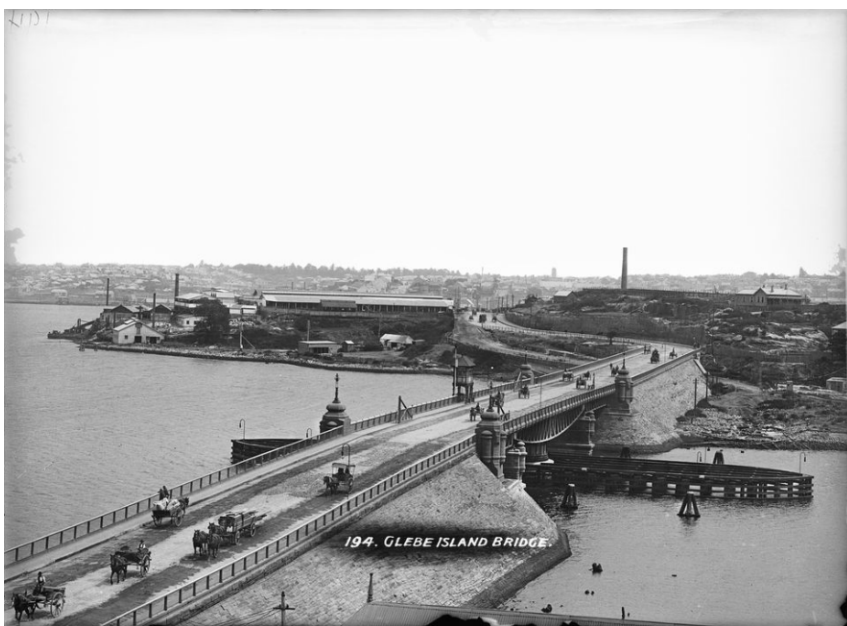


Figure 87: Glebe Island swing bridge with Glebe Island Abattoir in the background, c1903-1915¹²⁶

¹²³ Ibid.

¹²⁴ Ibid.

¹²⁵ Sydney Mail, 22 February 1896 cited in Glebe Society Bulletin, 2006. 'Glebe's Industrial History'. Accessed online 8 July 2019, https://www.glebesociety.org.au/wp-content/uploads/bulletins/2006_03.pdf

¹²⁶ Author unknown, c1903-1915. 'Glass plate negative of Sydney's Glebe Island swing bridge with Glebe Island abattoir in the background'. Accessed online 8 July 2019, <https://collection.maas.museum/object/495200>

5.11.5 Lever Brothers Factory

The well-known Unilever Australia Ltd. had its origins in soap. Brothers William and James Lever established Lever Brothers during the c1880s in England. Working out of a small soap factory in Warrington, Lancashire, Lever registered and trademarked 'Sunlight' soap, which quickly became Britain's best-selling bar soap. Within Australia, Lever Brothers opened a mill along Booth Street, Balmain, facing White Bay (Figure 88 and Figure 89). Here the mill extracted oil from copra, distributing the oil within Australia and England.¹²⁷

On 15 October 1900, a Sunlight Soap and glycerine factory was opened beside the copra-mill on Booth Street. Over the next 20 years, Lever Brothers amalgamated with rival soap manufacturer J. Kitchen & Sons and other Australian manufacturers, eventually controlling half the Australian soap trade. Lever Brothers became Unilever in 1930 and by 1958, the factory at White Bay employed up to 1250 workers, contained extensive storage facilities, wharves and a small fleet of lighters and workboats.¹²⁸ Operations at the factory wound down during the 1970s. This was especially due to the closure of the waterfront glycerine plant for the introduction of the container wharf development. Production at the factory ceased in 1988 and the site was sold in 1996 for the development of the *Watervale*, *Dockside* and *Somerset Mews* apartment complexes.



Figure 88: Unloading copra at Unilever Factory, 1952¹²⁹

¹²⁷ Graham Spindler, 2011. 'historical Notes and Background'.

¹²⁸ Spindler, 2011. 'historical Notes and Background'.

¹²⁹ Author unknown, 1952. Unloading copra at Lever Brothers' works, Balmain'. Accessed 4 April 2019, <https://openresearch-repository.anu.edu.au/handle/1885/48629>



Figure 89: Unilever Factory, 1956¹³⁰

5.11.6 White Bay Power Station

The Sydney tramway system had expanded throughout the nineteenth century from horse power, to steam, to cable and finally to electrical traction. To facilitate this, a number of power stations were constructed within Sydney at Ultimo, Pyrmont and Balmain.¹³¹

The White Bay Power Station was constructed by the NSW Railway Commissioners in order to support the ever-expanding tramway network; to facilitate the anticipated electrification of the railway system and the proposed underground railway system within the CBD (Figure 90).¹³² In addition, the tramway network within Sydney was much more extensive than in Melbourne at this time, and was challenged by much steeper topography. As such, a newer, larger and more flexible power station was required to fulfil Sydney's needs.¹³³

Construction of the facility began from 1912-1917 during which time, the turbine hall, switch house and one boiler house were built. At this stage, the buildings had been completed but most of the plant had yet to be installed, as such, the power station commenced operation with one 7500kw, 6600-volt, 25 cycle turbo alternator and associated boiler equipment on temporary foundations. From 1916-1919, two new Turbo-Alternators and the No. 9 Alternator were installed at White Bay.¹³⁴ From 1923-1928 White Bay was extended utilising steel framing and reinforced concrete, rather than brickwork.¹³⁵ In addition, three 22,000kW, 11,000-volt, 50 cycle Turbo Alternators and two 18,750kw 6600 volt, 25 cycle Turbo Alternators were installed.

By the 1930s, White Bay had grown substantially and the 7,500kw turbo alternator was transferred to the Zarra Street Power Station. In 1930, a 25,000kva frequency charger was installed, tying the 25

¹³⁰ Author unknown, 1956. 'The Sydney manufacturing plant of Lever Brothers Pty. Ltd'. Accessed 4 April 2019, <https://recordsearch.naa.gov.au/SearchNRRetrieve/Interface/DetailsReports/PhotoDetail.aspx?Barcode=11790535>

¹³¹ Office of Environment and Heritage, 2000. 'White Bay Power Station'. Accessed 4 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4500460>

¹³² Lisa Murray, 2016. 'White Bay Power Station'. Accessed 4 April 2019, <http://home.dictionaryofsydney.org/white-bay-power-station-2/>

¹³³ OEH, 2000. 'White Bay Power Station'.

¹³⁴ OEH, 2000. 'White Bay Power Station'.

¹³⁵ OEH, 2000. 'White Bay Power Station'.

and 50 cycle systems together, increasing the effective capacity of both systems and reducing the amount of stand-by equipment.¹³⁶ During World War II, funding required for the upkeep and modernisation of the facility was diverted to the war effort. As such, in 1948, two battery boilers and the two 18,750kw turbo alternators were replaced with a 50,000kw 50 cycle Parsons Turbo Alternator.

In 1953, the power station was transferred to the Electricity Commission of NSW. At this time, the c1920s boiler house was replaced with a new steel framed structure. During the 1970s, a number of buildings and features were removed due to the drop-in demand. The station remained in use up until Christmas Day in 1983 and was finally decommissioned the following year.¹³⁷



Figure 90: White Bay Power Station and the White Bay Hotel, c1930 (City of Sydney Archives SRC352)

5.11.7 White Bay Hotel

The White Bay Hotel was originally opened by Robert Symonds at the corner of the Victoria and Lilyfield Road (previously Weston and Abattoir Road) in Rozelle. In 1910, the hotel was resumed for the development of rail lines to service the White Bay Power Station and demolished in 1915. To compensate, a parcel of land off Victoria Road was provided for the reconstruction of the hotel.¹³⁸

The second White Bay Hotel was constructed in 1916 by Tooth and Co. Brewers. The decline of the hotel coincided with the closure of the White Bay Power Station during the 1980s and the development of surrounding roads including the City West Link and Victoria Road. The hotel closed in 1992, following which point, it became home to squatters. Redevelopment proposals were put forth in

¹³⁶ OEH, 2000. 'White Bay Power Station'.

¹³⁷ OEH, 2000. 'White Bay Power Station'.

¹³⁸ The Sydney Harbour Foreshore Authority, 2011. 'White Bay Power Station CMP'. Accessed online 8 July 2019, <https://thebayssydney.nsw.gov.au/assets/Document-Library/White-Bay-Power-Station-resources-2004-2011/2011-WBPS-Conservation-Management-Plan.pdf>

2008, however the hotel was destroyed by fire within the same year under suspicious circumstances and the debris was cleared in 2010.¹³⁹



Figure 91: White Bay Hotel, 1992. ¹⁴⁰



Figure 92: White Bay Hotel under demolition, 2010. ¹⁴¹

¹³⁹ Ibid.

¹⁴⁰ Author unknown, 1992. 'White Bay Hotel'. Accessed online 8 July 2019, <https://timegents.com/2015/11/29/publican-bookmakers/>

¹⁴¹ Author unknown, 2010. 'White Bay Hotel'. Accessed online 8 July 2019, <https://www.flickr.com/photos/29029178@N03/3231114060/>

5.11.8 Atlantic Union Oil Company (Esso)

In 1929, the Sydney Harbour Trust leased the old Booths Mill site to the Atlantic Union Oil Company (later Esso) for oil storage. During this period, many of the old mill buildings and associated houses were demolished, making way for storage tanks for oil, petroleum and other chemicals. Demolition of structures associated with Booths mills gradually continued up until the 1960s, when the last houses were removed. Following these demolitions, Atlantic constructed tanks close to Donnelly Street, including a large tank south of Jane Street.¹⁴²

Container wharves were established at White Bay by the late 1960s, following this establishment, the storage tanks fell increasingly into disuse, and by 1980, Esso had withdrawn from the site.

5.11.9 White Bay redevelopment

In 1966, the Maritime Services Board drew up a ten-year plan for the development of White Bay for shipping containerisation to include new container berths. It was at this point that blasting activities took place, removing the Bald Rock and other natural features, damaging many homes in the process. The new facility including new container berths opened in 1969, however, the wharves lacked back-up space for truck movements and a larger facility was eventually opened at Botany Bay.¹⁴³

During the 1980s, Leichhardt Council developed a landscaped park between Donnelly Street and the container facility to provide a visual and sound buffer against the new container facility. The park named White Bay Park opened in 1982, later being renamed Birrung Park.¹⁴⁴ The Bays has been subject to other recent redevelopments including establishment of the White Bay Cruise Terminal in 2013. In 2013, construction also began on the interim Sydney Exhibition Centre at Glebe Island, which opened in February 2014 and was decommissioned and removed in 2017 after the redevelopment of the Sydney Convention and Exhibition Centre was completed. In 2015, the NSW Government began negotiations to redevelop the White Bay Power Station into an international technology hub. Thirteen companies submitted proposals for the project including Google, however these proposals did not come to fruition.¹⁴⁵ Lastly, the NSW Government announced the development of The Bays Precinct Urban Transformation Project in 2015. The Bays Precinct Sydney Project Update: Bays West Update¹⁴⁶ (INSW formerly UrbanGrowth NSW, 2018) further develops the vision set out in the Transformation Plan to focus on long term mixed-use urban renewal of The Bays driven by key road and transport projects and integrated with necessary port and working harbour activities over the next 10 years.¹⁴⁷

5.11.10 The Bays Station construction site

The Bays Station construction site lies within the curtilage of William Balmain's 1800 land grant (Figure 83). The site is not known to have been developed up until the 1850s, during which point, the Glebe Island Abattoir was developed, and the White Bay Hotel was introduced to the area. From the mid-nineteenth century, Rozelle and Balmain were subdivided, which lead to the development of maritime and noxious industries in the area and the greater White Bay foreshore. At this time, White

¹⁴² Spindler, 2011. 'historical Notes and Background'.

¹⁴³ Peter Reynolds, 2008. 'White Bay'.

¹⁴⁴ Peter Reynolds, 2008. 'White Bay'.

¹⁴⁵ Sarah Gerathy, 2017. 'Google Backs out of plan to turn Sydney's White Bay Power Station into next Silicon Valley'. Accessed 4 July 2019, <https://www.abc.net.au/news/2017-04-12/google-backs-down-on-plans-to-base-itself-at-white-bay/8436686>

¹⁴⁶ INSW, 2018. *The Bays Precinct Sydney Project Update: Bays West Update*.

¹⁴⁷ Infrastructure NSW, 2018. 'About The Bays Growth Centre'. Accessed online 30 July 2019, <https://www.ugdc.nsw.gov.au/growth-centres/the-bays-precinct/>

Bay remained unreclaimed (Figure 93 – Figure 96), however, a number of rear yard structures were built above the high tide line within the western most portion of The Bays Station construction site.

The White Bay shoreline underwent extensive reclamation during the 1890s. During this time, Mullens Street was extended which allowed for the construction of a number of properties within the western portion of The Bays Station construction site.

The turn of the twentieth century marked the closure of the Glebe Island Abattoirs and the introduction of the White Bay Power Station which was in operation up until 1984. 1943 aerial imagery shows the White Bay Power Station during operation, with additional structures, which have since been demolished (Figure 97).



Figure 93: Overlay of the construction site on subdivision plan of William Balmain's Estate in 1851 (construction site outlined in red)



Figure 94: Overlay of the construction site with Municipality of Balmain, 1883 (construction site outlined in red)

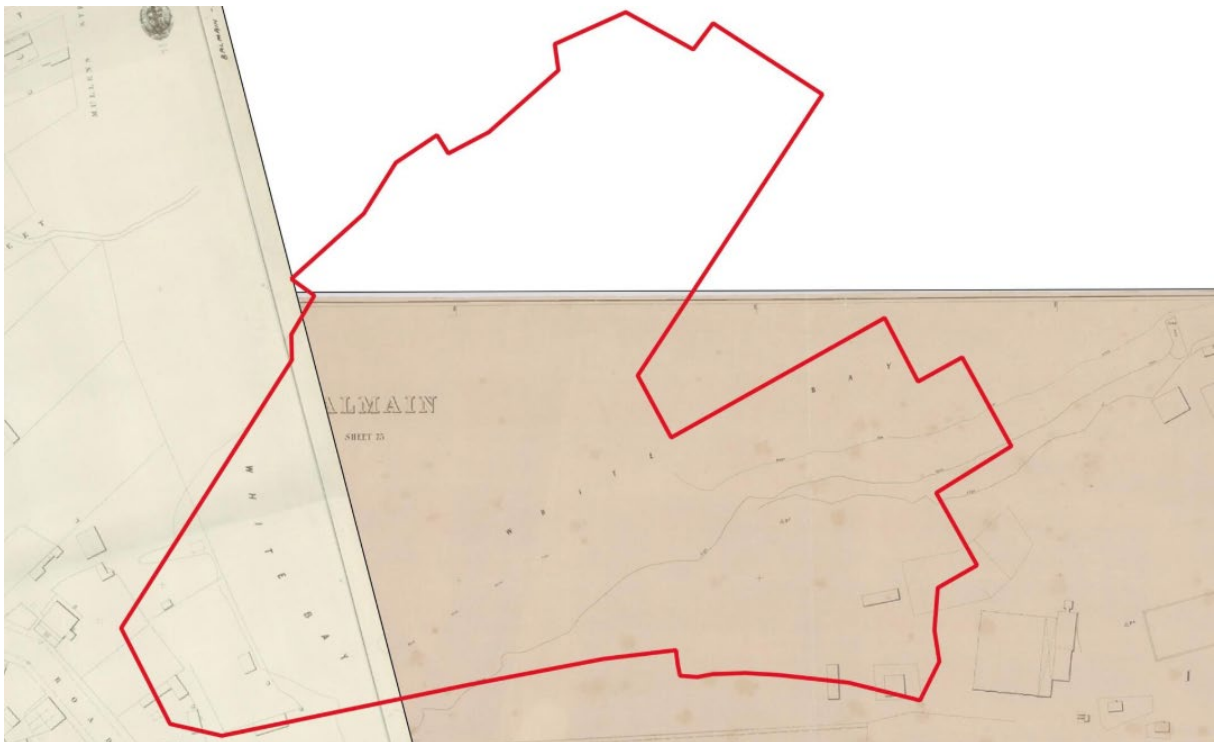


Figure 95: Overlay of construction site (outlined in red) on composite of Balmain Metropolitan Plans from 1890 and 1892



Figure 96: Overlay of construction site (outlined in red) on late nineteenth century subdivision plan of White Bay, showing proposed Mullens Street extension and dyke

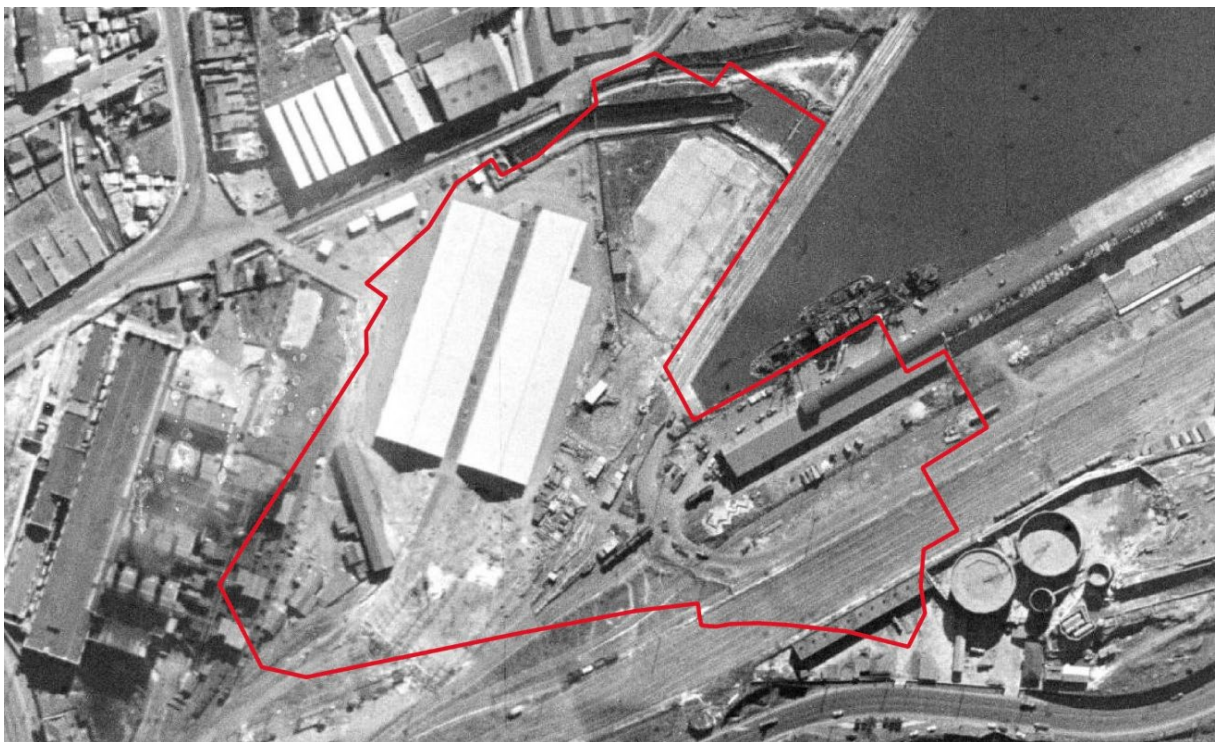


Figure 97: Overlay of construction site (outlined in red) on 1943 historical aerial image

6.0 BUILT HERITAGE ASSESSMENT

6.1 Introduction

This chapter provides an assessment of potential heritage impacts that would result from Stage 1 on each discrete study area. Items listed on statutory heritage registers located within each construction site and study area are described in this section, and a significance assessment provided for each heritage item (listed and any identified unlisted items).

6.2 Westmead metro station construction site

6.2.1 Summary of heritage listed items

Table 7 provides a summary of the listed heritage items within the study area surrounding the Westmead metro station construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 98.

Table 7: Heritage items within Westmead metro station construction site study area

Heritage item	Register listings	Address	Significance	Relationship to the construction site
Westmead Public School, c1917	Holroyd LEP Item No. I153	150 Hawkesbury Road, Westmead, Local NSW 2145		Within buffer zone; immediately adjacent (west) of construction site



Westmead Metro Station
Heritage Items
18260 Metro West
LGA: City of Parramatta and Cumberland

SCALE 1:2,000
SIZE A4
DATE 5/12/2019

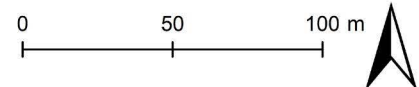


Figure 98: Westmead metro station construction site heritage items map

6.2.2 Existing environment

The existing environment around the proposed Westmead metro station construction site is predominantly suburban, comprising low density Inter-War residential dwellings and low to medium density modern apartments set on relatively quiet streets off Hawkesbury Road, and nearby the historic Westmead Public School along Hawkesbury Road. The portion of the study area encompassing Alexandra Avenue includes a number of commercial developments and a small portion of the existing rail corridor.



Figure 99: View southwest towards the Westmead Public School from the Westmead metro station construction site



Figure 100: View north along Hawkesbury Road showing streetscape surrounding the Westmead metro station construction site



Figure 101: View southwest across Alexandra Avenue towards the Westmead metro station construction site



Figure 102: View east from Alexandra Avenue to the existing Westmead Station and rail corridor



Figure 103: View southeast along Hawkesbury Road towards low density apartment block and Westmead metro station construction site



Figure 104: View northwest along Hassall Street showing streetscape surrounding Westmead metro station construction site



Figure 105: View west along Bailey Street showing streetscape and Westmead metro station construction site



Figure 106: View south across Alexandra Avenue towards the Westmead metro station construction site, showing surrounding streetscape and commercial development



Figure 107: Westmead metro station construction site existing environment photograph location map

6.2.3 Significance and impact assessments for individual items

Table 8 provides a significance assessment of the listed heritage items within the study area surrounding the Westmead metro station construction site.

Table 8: Westmead Public School (c1917) heritage impact assessment

Westmead Public School¹⁴⁸

Image



Figure 108: Westmead Public School from Hawkesbury Road. Artefact Heritage 2019.

Significance	Local
Description	Brick classroom blocks typical of government designed schools constructed during the early twentieth century. Building features include hipped and gabled roofs which continue over timber framed verandahs giving access to individual classrooms. In addition, windows generally timber framed.
Statement of significance	<i>Westmead Public School has local historic and social significance from its role as the local public school for the area since 1917. The building group also provides evidence of the growth of community facilities which accompanied the increase in population throughout Holroyd in the Interwar years. Aesthetically the site has local significance being enhanced by the degree to which its buildings have retained early fabric and detailing. Mature tree planting also enhance the aesthetic significance of the site as an attractive and notable local landmark.</i>
Impact type	Indirect impact: Views and vistas

¹⁴⁸ Cumberland Council, 1992. *Westmead Public School*. Holroyd Heritage Study 1992 – Building & Other Work.

Westmead Public School¹⁴⁸

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

The Westmead metro station construction site would be directly opposite the primary outlook of this heritage item, with intersection works occurring immediately adjacent (west) to the heritage item. The demolition of existing buildings and construction activities, including intersection works, would result in changes to the surrounding setting and context of the heritage item, including views looking east from the single storey school buildings. In addition, an acoustic shed would be located within the northern portion of the construction site, at a height of 15 metres to the west, reaching 25 metres within the east. The acoustic shed and intersection works are expected to be seen directly from the heritage item, however, views and vistas are not considered an integral element of the item's heritage significance. As such, works are considered to have a minor visual impact.

Indirect impact: Minor

6.2.4 Potential unlisted heritage items

This assessment has not identified any potential unlisted heritage items within the Stage 1 construction site.

6.2.5 Overview of heritage impacts

The following table provides an overview of the Stage 1 heritage impacts associated with Westmead metro station construction site.

Table 9: Heritage impacts for Westmead metro station construction site

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
Westmead Public School, c1917	Holroyd LEP Item No. I153	Local	Neutral	Neutral	Minor

6.3 Parramatta metro station construction site

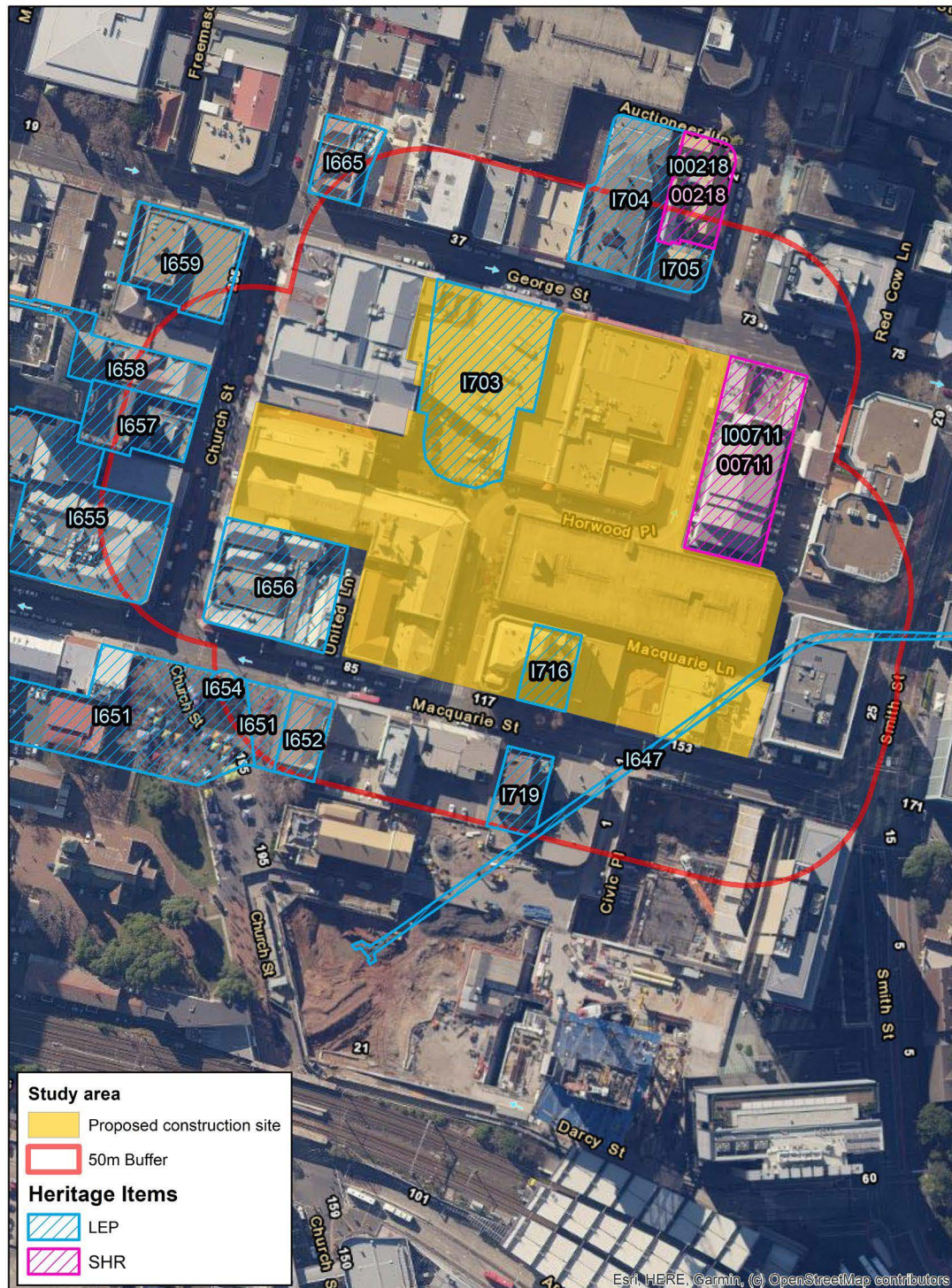
6.3.1 Summary of heritage listed items

Table 10 provides a summary of the listed heritage items located within the study area surrounding the Parramatta metro station construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 109.

Table 10: Heritage items within Parramatta metro station construction site study area

Heritage item	Register listings	Address	Significance	Relationship to the construction site
Shops (and potential archaeological site)	Parramatta LEP Item No. I703	41-59 George Street, Parramatta, NSW 2150	Local	Within construction site
Convict Drain	Parramatta LEP Item No. I647	1, 1A and 3 Barrack Lane, 174 Church Street, 71, 83, 85 and 126–130 George Street, 72, 74, 119 and 119A Macquarie Street, 72B, 72C, 76 and 80A Phillip Street and 18 and 25 Smith Street, Parramatta, NSW 2150	Local	Partially within construction site
Roxy Theatre	SHR Listing No. 00711Parramatta LEP Item No. I00711	69 George Street, Parramatta, NSW 2150	State	Within buffer zone; immediately adjacent (east) of construction site
Horse Parapet Façade (and potential archaeological site)	Parramatta LEP Item No. I656	198-216 Church Street, Parramatta, NSW 2150	Local	Within buffer zone; immediately adjacent (southwest) of construction site
Murrays' Building (and potential archaeological site)	Parramatta LEP Item No. I652	188 Church Street, Parramatta, NSW 2150	Local	Within buffer zone; 20 metres south of construction site
Kia Ora (and potential archaeological site)	Parramatta LEP Item No. I716	62-64 Macquarie Street, Parramatta, NSW 2150	Local	Within construction site
Dr Pringle's Cottage	Parramatta LEP Item No. I705	52 George Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 20 metres north of construction site
Redcoat's Mess House	SHR Listing No. 00218 Parramatta LEP Item No. I00218	2 Horwood Place, Parramatta, NSW 2150	State	Partially within buffer zone; 40 metres north of construction site
Civic Arcade (former theatre) (and potential archaeological site)	Parramatta LEP Item No. I704	48 George Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 20 metres north of construction site
Westpac Bank	Parramatta LEP Item No. I665	264 Church Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 40 metres northwest of construction site

Heritage item	Register listings	Address	Significance	Relationship to the construction site
Former Courthouse Wall and Sandstone Cellblock (and potential archaeological site)	Parramatta LEP Item No. I659	223 and 235 Church Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 40 metres northwest of construction site
HMV (former Commonwealth Bank) (and potential archaeological site)	Parramatta LEP Item No. I658	215 Church Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 20 metres west of construction site
Telstra House (former post office) (and potential archaeological site)	Parramatta LEP Item No. I657	211 Church Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 20 metres west of construction site
Shop (and potential archaeological site)	Parramatta LEP Item No. I655	197 Church Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 20 metres west of construction site
Bicentennial Square and adjoining buildings	Parramatta LEP Item No. I651	188, 188R (part of Church Street road reserve) and 195 A Church Street, 38 Hunter Street and 83 Macquarie Street, Parramatta, NSW 2150	Local	Partially within buffer zone; 20 metres south of construction site
Centennial Memorial Clock	Parramatta LEP Item No. I654	Bicentennial Square (opposite 196 Church Street), Parramatta, NSW 2150	Local	Partially within buffer zone; 40 metres south of construction site
Leigh Memorial Uniting Church	Parramatta LEP Item No. I719	119 Macquarie Street, Parramatta, NSW 2150	Local	Within buffer zone; 20 metres south of construction site



Parramatta Metro Station
Heritage Items
18260 Metro West
LGA: City of Parramatta

SCALE 1:2,000
SIZE A4
DATE 5/12/2019

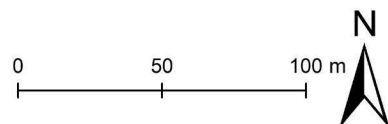


Figure 109: Parramatta metro station construction site heritage items map

6.3.2 Existing environment

The existing environment around the Parramatta metro station construction site comprises a combination of medium density commercial and retail buildings, and open civic public spaces set near the historic focal point of Parramatta CBD. These developments are situated along the historic road network in this part of Parramatta comprising Macquarie Street, George Street, Church Street and Smith Street. Historical commercial and retail buildings within the study area generally include a variety of single and two storey Victorian, Federation and Art Deco style buildings. Towards the eastern end of the study area, development increases in density to the modern commercial, government and institutional buildings located near the corner of Macquarie Street and Smith Street. The open and historic layout of Centenary Square, located to the southwest of the study area, combined with the major pedestrian route along Church Street create a distinctive civic character in this part of the study area.



Figure 110: View northeast from Centenary Square across Macquarie Street towards Parramatta metro station construction site



Figure 111: View south from Church Street towards Centenary Square and surrounding civic space



Figure 112: View west along Macquarie Street alongside Parramatta metro station construction site



Figure 113: View east along Macquarie Street showing existing development adjacent to the Parramatta metro station construction site



Figure 114: View north along Horwood Place at intersection with Macquarie Street



Figure 115: View southwest along Church Street adjacent to the Parramatta metro station construction site



Figure 116: View southeast across intersection of Church Street and George Street towards the Parramatta metro station construction site



Figure 117: View southwest across Church Street showing existing development around the Parramatta metro station construction site

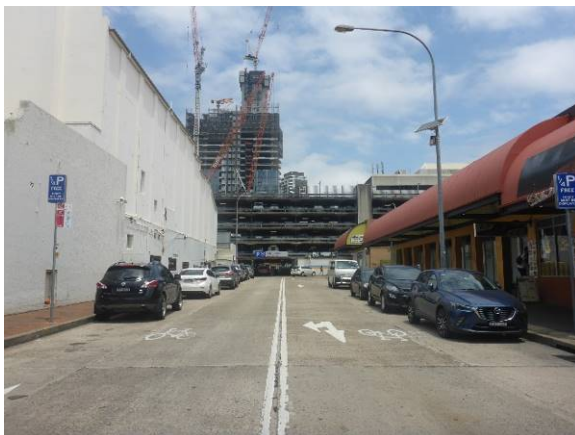


Figure 118: View south along Horwood Place from George Street, showing existing development



Figure 119: View southeast across George Street towards the Parramatta metro station construction site

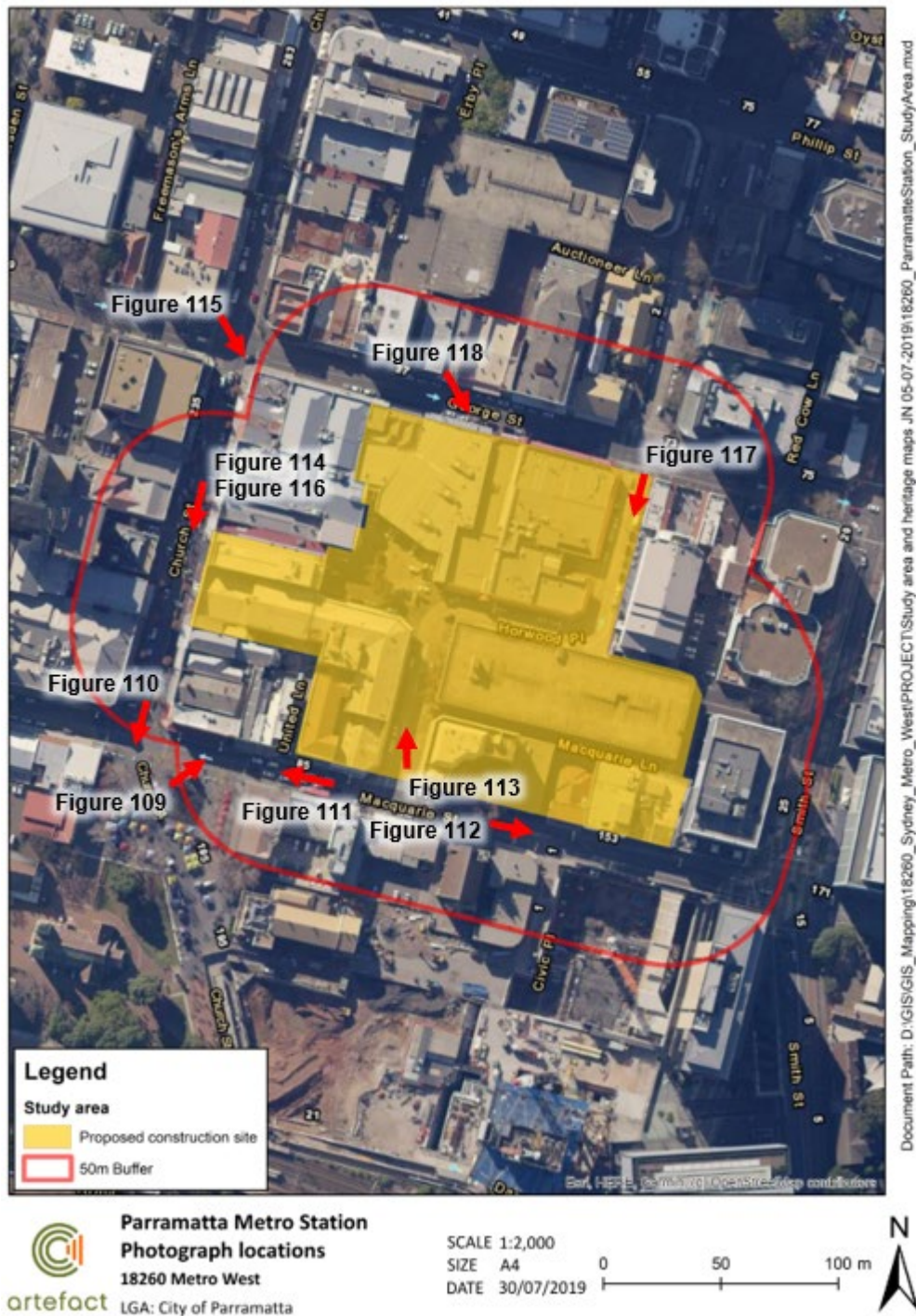


Figure 120: Parramatta metro station construction site existing environment photograph location map

6.3.3 Significance and impact assessments for individual items

Table 11 to Table 27 provides a significance assessment of the listed heritage items within the study area surrounding the Parramatta metro station construction site.

Table 11: Shops (potential archaeological site) heritage impact assessment

Shops (potential archaeological site)¹⁴⁹

Image



Figure 121: Shops (potential archaeological site) from George Street. Artefact Heritage 2019

Significance Local

Description

This two-storey Victorian Regency structure was developed between 1823 and 1845. The building consists of a façade of plain sandstone with modest string course and architrave mouldings. In addition, the front walls are made with ashlar sandstone; the side walls are colonial bond brick; and the hipped roof with shallow parapet was constructed using slate and metal ridge capping. The verandah stretches across all shop fronts and comprises a skillion corrugated iron roof supported by timber stop chamfered posts with curved timber valance. Additional features include sandstone stringline between floors, rendered brick chimneys, sandstone brackets, arches and sills within windows and incised pilasters between each shop front.

Statement of significance

The Victorian Regency two-storey shop building at 43-47 George Street is of significance within NSW for historic, aesthetic and scientific reasons and for reasons of rarity. The site has high archaeological potential and may contain relics of State Significance relating to the c1790 convict huts recorded in a 1792 map. Physical archaeological evidence may include structural features, intact subfloor deposits and individual artefacts which have potential to yield information relating to major historic themes including convict, commerce and persons. The existing building is a rare example of an early commercial / residential building built before 1844, this both rare and representative of its type and date of creation.

Impact type

Direct impact: Acquired within construction site, but not to be demolished
Potential direct: Vibration
Indirect impact: Views and vistas

¹⁴⁹ OEH, 2002. 'Shops (potential archaeological site)'. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=2240208>

Shops (potential archaeological site) ¹⁴⁹

Heritage impact assessment	<p>This heritage item is located within the Parramatta metro station construction site. The heritage item consists of the Victorian Regency structure at 43-47 George Street, in addition to a collection of modern structures, at 49-57 George Street which is currently occupied by 'Crunch Fitness'. The heritage curtilage includes adjoining modern buildings that are not considered to have heritage significance, although the site itself is identified as a potential archaeological site.</p> <p>Stage 1 would result in demolition of the modern adjoining development/additions within the heritage curtilage of this item, in addition to all other developments/structures within the construction zone, excluding the heritage listed 'Kia Ora'. Stage 1 would also include cut and cover excavation for the station to the south of the heritage curtilage. The historic two-storey stone building fronting George Street would be retained and would not be demolished. Demolition of modern buildings on the site and cut and cover excavation would not result in any substantial adverse heritage impact, and would not result in the item's heritage listing eligibility being reduced. It is possible that minor impact to the remaining historic building could occur due to vibration or accidental damage during construction, which could potentially result in localised physical impact although this would be minor in nature.</p> <p>Direct impact: Minor</p> <p>The heritage item is located within the construction site. The item would experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.</p> <p>Potential direct: Minor</p> <p>The heritage item consists of the Victorian Regency structure at 43-47 George Street, connected to a larger modern section and building to the rear, at 49-57 George Street which is currently occupied by 'Crunch Fitness'. The heritage curtilage includes adjoining modern buildings that are not considered to have heritage significance. The demolition of existing modern buildings within the heritage item for Stage 1 would result in changes to the existing visual amenity and character of the item, although the modern buildings are not considered to represent a significant visual component of the historic shop.</p> <p>Stage 1 would result in demolition of all other modern developments within the block bound by George Street, Church Street, Macquarie Street and Smith Street, excluding the heritage listed 'Kia Ora' and the two-storey Victorian Regency structure within the heritage curtilage. This context and views and vistas have been previously altered by modern development within the construction site and surrounding streetscape so no further visual impacts are expected in this regard.</p> <p>Indirect impact: Minor</p>
----------------------------	---

Table 12: Convict Drain heritage impact assessment

Convict Drain¹⁵⁰

Image



Figure 122: A section of the Convict Drain. Edward Higginbotham 1983

Significance	Local
Description	This convict drain was created to disperse stormwater, and runs on an alignment from the Church and Darcey Street junction, discharging into the Parramatta River. The 1 metre diameter circular brick barrel drain consists of two courses of sandstock bricks loosely cemented with mud mortar and packed with sand and clay.
Statement of significance	<i>The brick barrel drain in Parramatta is of significance for the local area for its historical and aesthetic values; for its rarity and scientific potential. The drain, believed to be built in the 1820s, has historical significance as the oldest known example of its type in NSW. The item has aesthetic / technological significance for its ability to convey information on the design and construction technology of this type of item. It is a rare surviving example of early colonial period engineering and town planning practices in Parramatta. The grounds surrounding the item may provide potentially important further information to future researchers.</i>
Impact type	Direct impact: Partial demolition (potential) Potential direct: Vibration
Heritage impact assessment	The Parramatta metro station construction site marginally encroaches on a portion of the curtilage of the convict drain heritage item, located beneath Macquarie Lane. The exact location and fabric condition of the portion of the drain in the location within the construction site is unknown. Previous archaeological studies have identified the drain at a variable depth in different locations in Parramatta, and as such the precise depth of the drain that is within the construction site is also unknown. Construction activities for Stage 1 could potentially result in direct physical impact on the convict drain. Stage 1 would result in demolition of all modern buildings and structures within the construction site. Demolition of modern buildings on the site would not result in any substantial adverse heritage impact, and would not result in the item's heritage listing eligibility being reduced. It is possible that minor impact to the heritage item could occur due to vibration or accidental damage during construction, which could potentially result in localised physical impact although this would be minor in nature. The archaeological assessment and impacts are covered separately in Section 7.3.

¹⁵⁰ OEH, 2002. 'Shops (potential archaeological site)'. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=2240208>
Edward Higginbotham, 1983. 'The Excavation of a Brick Barrel-drain at Paramatta, NSW'. Accessed 10 April, http://www.asha.org.au/pdf/australasian_historical_archaeology/01_04_Higginbotham.pdf

Convict Drain¹⁵⁰

Direct impact: Minor

A portion of the curtilage of the heritage item is located within the construction site. The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria, however, the exact location, fabric condition and depth of the convict drain heritage item are unknown. Further assessment (including structural assessment) and vibration monitoring (if required) would be completed in accordance with Technical Paper 2. This would be based on the confirmed location of the item relative to construction activities.

Potential direct: Minor

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. Adverse impacts to this item are only assessed for that portion of the item which is located within the construction site.

Indirect impact: Neutral

Table 13: Roxy Theatre heritage impact assessment

Roxy Theatre¹⁵¹

Image



Figure 123: Roxy Theatre from George Street. Artefact Heritage 2019

Significance State

Description

The Roxy Theatre is a purpose-built cinema that was developed from 1930 in the Inter-War Spanish Mission style. The main central building is set back from George Street and comprises a large 'picture palace', flanked on both western and eastern sides by loggias containing small shops. The landmark structure is symmetrical, centred on an arch set into the ornate central tower, over the main theatre entrance which is reached via a grand staircase. The fabric consists of stuccoed brick, internally and externally, terracotta flooring and roofing, painted timber, wrought iron and moulded plaster decoration internally. Additional features include a set of timber-framed and glazed main doors, original Spanish Mission style light fittings, furniture, joinery and floor tiles. Modifications were made into the 1980s.

¹⁵¹ OEHL, 1998. 'Roxy Theatre'. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5051406>

Roxy Theatre¹⁵¹

Statement of significance	<p><i>The Roxy Theatre has high cultural significance as a good and relatively intact representative example of the 'Picture Palaces' of the interwar period; its overall form and surviving original fit out and fabric displaying the major attributes of this building type. More particularly, it is an excellent example of 'Interwar Spanish Mission' style, displaying features typical of this style but also with a notable individuality and quality of architectural design.</i></p> <p><i>The theatre also provides evidence of the changing nature of film theatres and theatre going since the 1920s. Its architectural character and function have been influenced by both national and international developments in film technology and theatre visitation since the advent of the 'Talkies' – ranging from large single auditorium regularly seating nearly 2000 to the present multi-theatre configuration. The size and architectural character of the building also reflect American cultural influences in the interwar period and the profitability of 'Picture Palaces'.</i></p> <p><i>The location and origins of the theatre are closely associated with the growth of Sydney's suburbs in the interwar years and Parramatta in particular. It is an attractive and distinctive local landmark and particularly valued by the regular theatre-goers of its early years and those interested in movie and architectural history (its retention in the 1970s being in large measure due to intervention by such groups).</i></p> <p><i>Professional, trade and manufacturing practice – example of the work of notable Moore & Dyer in association with Herbert & Wilson architects. Evidence of social and cultural life.</i></p>
Impact type	<p>Potential direct: Vibration Indirect impact: Views and vistas</p>
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The Roxy Theatre heritage item is located immediately adjacent to the construction site. The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2. Potential direct: Minor</p> <p>Stage 1 would result in demolition of the majority of buildings and structures within the block bound by George Street, Church Street, Macquarie Street and Smith Street. This includes buildings directly to the west and south of Roxy Theatre, which would change the wider context of the historic theatre. This context has been previously altered by modern development within and surrounding the construction site, and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting of Roxy Theatre. Indirect impact: Minor</p>

Table 14: Horse Parapet Façade (and potential archaeological site) heritage impact assessment

Horse Parapet Façade (and potential archaeological site)¹⁵²

Image



Figure 124: Horse Parapet Façade from Macquarie Street. Artefact Heritage 2019

Significance	Local
Description	Built in c1881, the Horse Parapet Façade heritage item comprises a Victorian Italianate style two-storey shop and office structure. The corner building features two parapets that are decorated with plaster horses. The building fabric consists of rendered brick with decorative stringline, decorated pilasters, window sills and mould arches above windows. In addition, the skillion shop awning skillion roof has been constructed using corrugated iron.
Statement of significance	<i>The group collectively known as 'Horse Parapeted Shops' is of significance for the Parramatta area for historical and aesthetic reasons and as a representative example of Victorian Italianate shops in the area. Built c1881, it makes a major contribution to the streetscape and presents a landmark in the centre of Parramatta. This group of commercial building makes a major presence at a major intersection and demonstrates the commercial role of Parramatta in the nineteenth century. The site possesses potential to contribute to an understanding of early urban development in Parramatta.</i>
Impact type	Direct impact: Construction impacts Potential direct: Vibration Indirect impact: Views and vistas
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Stage 1 would result in demolition of modern adjoining development/additions directly adjacent to the heritage curtilage of this item, in addition to all other developments/structures within the construction zone, excluding the heritage listed 'Kia Ora' and 'Shop' (and potential archaeological site). Stage 1 would also include cut and cover excavation for the station to the north of the heritage curtilage.</p> <p>The heritage item is located outside the construction site and would not be demolished. Demolition of modern buildings on the construction site and cut and cover excavation would not result in any substantial adverse heritage impact and would not result in the item's heritage listing eligibility being reduced.</p> <p>Direct impact: Neutral – potential minor</p>

¹⁵² OEI, 1998. 'Horse Parapet Façade and Potential Archaeological Site. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240109>

Horse Parapet Façade (and potential archaeological site) ¹⁵²

This heritage item is not located within the construction site, but is adjoined to modern buildings which are subject to demolition works. The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.

Potential direct: Minor

It is possible that minor impact to the remaining historic building could occur due to vibration or accidental damage during construction, which could potentially result in localised physical impact although this would be minor in nature. Stage 1 would result in the demolition of the majority of buildings immediately north and nearby to the east of the Horse Parapet Façade, which would change the wider setting and context of the historic building. This context has been previously altered by modern development within and surrounding the construction site, and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting.

Indirect impact: Minor

Table 15: Murrays' Building (and Potential Archaeological Site) heritage impact assessment

Murrays' Building (and potential archaeological site) ¹⁵³

Image



Figure 125: Murrays' Building from Macquarie Street. Artefact Heritage 2019

Significance	Local
Description	The three-storey corner Murrays' Building was developed between 1911 and 1926. The structure is an urban civic building constructed using stuccoed brickwork, an unconcealed hipped tiled roof, heavy string courses, Doric pilasters and a metal awning.
Statement of significance	<i>Murrays' Building has an association with notable events or people and building or work associated with notable people. Namely, the major department store of Murray Bros. The site possesses the potential to contribute to an understanding of early urban development within Parramatta. In addition, Murrays' Building is an important element of the buildings around Bicentennial Square, at the heart of Parramatta.</i>

¹⁵³ OEH, 2002. 'Murray's Building and Potential Archaeological Site. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=2240104>

Murrays' Building (and potential archaeological site) ¹⁵³

Impact type Indirect impact: Views and vistas

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

Construction of Stage 1 would result in demolition of the majority of the buildings and structures within the construction footprint, on the northern side of Macquarie Street, directly opposite the three-storey Murray's Building. There would also be the visual presence of construction activities. This would change the wider context of the historic building. This context has been previously altered by modern development within and surrounding the construction site, and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting of Murray's Building.

Indirect impact: Minor

Table 16: Kia Ora (and Potential Archaeological Site) heritage impact assessment

Kia Ora (and potential archaeological site) ¹⁵⁴

Image



Figure 126: Kia Ora from Macquarie Street. Artefact Heritage 2019

Significance Local

Description

Kia Ora was developed from 1841 and is a two-storey townhouse on sandstone foundations constructed using rendered brick with a gabled slate roof. The structure is symmetrically designed and features small paned windows with shutters, sandstone sills and brick flat arches, and a six panelled timber simple mould door with elliptical fanlight and sidelights with glazed upper panels and timber below the lock rails. Additional elements include a sandstone verandah and fence foundations.

¹⁵⁴ OEH, 2002. 'Kia Ora and Potential Archaeological Site. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240356>

Kia Ora (and potential archaeological site) ¹⁵⁴

Statement of significance	<i>Kia Ora House at 64 Macquarie Street, built in c1841, is of significance within the local area for historical and aesthetic reasons and as a representative example of a Colonial Georgian townhouse. It is a rare example of this age and quality within the local area. This house is associated with John Batman, one of the founders of Melbourne, who was born here. The house makes a major contribution to the Parramatta townscape. The site possesses potential to further contribute to an understanding of early urban development in Parramatta.</i>
Impact type	Direct impact: Acquired within construction site, but not to be demolished Potential direct: Vibration
Heritage impact assessment	<p>This heritage item is located within the Parramatta metro station construction site, but would not be demolished. Construction of Stage 1 would result in demolition of all modern adjoining development/additions within the block bound by George Street, Church Street, Macquarie Street and Smith Street. In addition, cut and cover excavation would be undertaken for the station, to the north of the curtilage. The final excavation depth of this station would be around 25 metres in depth. Demolition of modern buildings and cut and cover excavation on the site would not result in any substantial adverse heritage impact, and would not result in the item's heritage listing eligibility being reduced.</p> <p>Direct impact: Minor</p> <p>The heritage item is located within the construction site. The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.</p> <p>Potential direct: Minor</p> <p>It is possible that minor impact to the remaining historic building could occur due to vibration or accidental damage during construction, which could potentially result in localised physical impact although this would not be major in nature. Stage 1 would result in demolition of buildings to the north and northeast of Kia Ora, which would change the wider setting and context of the historic building. This context has been previously altered by modern development within and surrounding the construction site and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting. Construction activities associated with Stage 1 would change the configuration and presentation of views towards Kia Ora, and would potentially detract from the historic quality of the 19th century residence.</p> <p>Indirect impact: Negligible</p>

Table 17: Dr Pringle's Cottage heritage impact assessment

Doctor Pringle's Cottage

Image



Figure 127: Dr Pringle's Cottage from George Street. Artefact Heritage 2019

Significance	Local
Description	Dr Pringle's Cottage is a two storey building including three shops facing George Street. It includes features such as a gabled corrugated steel roof; upper floor enclosed verandahs, with corbels supporting brick balustrade coping; and solid brick eastern and northern walls with string course at original eaves line.
Statement of significance	<i>Dr Pringle's Cottage is of significance for Parramatta for historical, scientific and reasons of rarity. This two-storey Colonial Georgian house, built in c1832 with incorporated c1911 shops, demonstrates changes in use and fabric since early settlement and has the potential to provide further information on the local history.</i>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and construction activities on the southern side of George Street, directly opposite Dr Pringle's. This would change the wider context of the historic building. This context has been previously altered by modern development within and surrounding the construction site, and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting of Dr Pringle's Cottage. Indirect impact: Negligible</p>

Table 18: Redcoats Mess House (and potential archaeological site) heritage impact assessment

Redcoats Mess House (and potential archaeological site)¹⁵⁵

Image



Figure 128: Redcoats Mess House from Horwood Place. Artefact Heritage 2019

Significance State

Description

The Redcoats Mess House, built from 1830, is a two-storey gabled structure with painted Flemish bond brickwork and corrugated iron roof. The structure comprises a verandah with skillion corrugated iron, painted timber supports and timber ladder balustrade decorations. Additional features include a painted sandstone stringline on the first floor; small paned sash windows and a timber tongue and groove door. The southern portion is slightly higher than the rest of the building. A modern building is also on the site to the east of the historic building, running immediately alongside Horwood Place.

Statement of significance

Evidence of the major role of the Colonial and State Government within Parramatta. The site possesses potential to contribute to an understanding of early urban development within Parramatta.

Impact type No impact

Heritage impact assessment

This heritage item is not located within the construction site, therefore there would be no direct impact.

Direct impact: Neutral

The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

The Redcoats Mess House is located around 40 metres to the north of the Parramatta metro station construction site, to the rear of the Dr Pringle's Cottage heritage item fronting George Street. Views towards the construction site from significant spaces and buildings within this heritage item are mainly obstructed by existing development in the vicinity, including the adjacent two-storey Dr Pringle's Cottage. As such, there would be no visual impact.

Indirect impact: Neutral

¹⁵⁵ OEH, 2002. 'Redcoats Mess House and Potential Archaeological Site. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240209>

Table 19: Civic Arcade (and potential archaeological site) heritage impact assessment

Civic Arcade (and potential archaeological site)¹⁵⁶

Image



Figure 129: Civic Arcade from George Street. Artefact Heritage 2019

Significance	Local
Description	<p>The Civic Arcade building was developed from 1924 in the Inter-War Art Deco style. The structure was built using rendered brick and a parapeted, breakfront, barrel vaulted roof built using corrugated fibro. Additional features include flagpoles extending above parapets, aluminium and fixed glazed double hung windows, suspended pressed metal lined and rivetted steel awning, and five pebblecrete pilasters flanking door openings.</p>
Statement of significance	<p><i>The Civic Arcade is of historical and social significance as the site of the first cinema in Parramatta. Together with successive cinema structures this site has been used socially for entertainment for 50 years. Although gutted internally, the George Street façade retains most of its form, the high parapet wall and main cinema building envelope and rivetted steel awning. The site has archaeological potential related to European occupation since 1790.</i></p>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and construction activities on the southern side of George Street, directly opposite the Civic Arcade. This would change the wider context of the historic building. This context has been previously altered by modern development within and surrounding the construction site, and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting of the Civic Arcade. Indirect impact: Negligible</p>

¹⁵⁶ OEH, 2002. 'Civic Arcade and Potential Archaeological Site. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2241021>

Table 20: Westpac Bank heritage impact assessment

Westpac Bank¹⁵⁷

Image



Figure 130: Westpac Bank from George Street. Artefact Heritage 2019

Significance	Local
Description	<p>The Westpac Bank building was constructed from 1938. The structure was built using ashlar sandstone with a hipped roof splayed at the corner with parapeted balustrade and cornice and dentils below. The main entrance sits at a distinctive 45-degree chamfered street corner and is flanked by two sandstone columns. The columns are set on pedestal forms between each window. Additional features include a coat of arms in transom light above a four-panelled timber double door with bolection moulded panels.</p>
Statement of significance	<p><i>Westpac Bank at 264 Church Street is of significance within the Parramatta area for historical and aesthetic reasons and as a representative example of an Interwar Classical bank building in the area. Built c1938 on a prominent street corner, it is readily identifiable as part of historical building stock and strongly contributes to the streetscape.</i></p>
Impact type	Indirect impact: Views and vistas
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and associated construction activities on the southern side of George Street, directly opposite the Westpac Bank building. This would change the wider context of the historic building. This context has been previously altered by modern development within and surrounding the construction site and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting of the Westpac Bank building. Indirect impact: Minor</p>

¹⁵⁷ OEH, 2002. 'Westpac Bank'. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240114>

Table 21: Former Courthouse Wall and Sandstone Cellblock (and potential archaeological site) heritage impact assessment

Former Courthouse Wall and Sandstone Cellblock (and potential archaeological site) ¹⁵⁸

Image



Figure 131: Former Courthouse Wall and Sandstone Cellblock from George Street. Artefact Heritage 2019

Significance	Local
Description	The former courthouse wall was constructed in 1838. The wall is located at the rear of a property on Church Street, and is constructed of sandstone blocks with curved coping. The wall is about 3.5 metres in height. At the rear of the allotment, a single storey sandstone cell block also survives. The wall and sandstone cell block are the only remnants of the former Mortimer Lewis Courthouse.
Statement of significance	<i>Stone wall at rear of the buildings at 223-235 Church Street is of significance for the local area for historical and scientific reasons, as it can demonstrate the earlier development on the site and has the potential to contribute to a further understanding of the early urban development in Parramatta.</i>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>As the significant elements within the heritage curtilage of this item are located more than 100 metres away from the construction site, potential direct impact by vibration is not anticipated. Potential direct: Neutral</p> <p>The Former Courthouse Wall and Cellblock are located off George Street, to the rear of the block fronting Church Street. While the heritage curtilage of this item is within the study area buffer zone, significant fabric is located over 100 metres away from the construction site. These historic elements do not retain any visual corridors or sightlines to or from the Parramatta metro station construction site. As such, there would be no visual impact. Indirect impact: Neutral</p>

¹⁵⁸ OEH, 2002. 'Courthouse, Cell Block, Bay Wall (former). Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242739>

Table 22: HMV (former Commonwealth Bank) (and potential archaeological site) heritage impact assessment

HMV (former Commonwealth Bank) (and potential archaeological site) ¹⁵⁹

Image



Figure 132: HMV from Church Street. Artefact Heritage 2019

Significance	Local
Description	The two-storey HMV building was developed from 1927 onwards. The structure was constructed on grey granite foundations, clad in sandstone and includes a balustrade sandstone parapet with frieze set on two wide-banded piers. In addition, two Ionic fluted columns, set on grey granite pedestals, flank the main entrance. The rear of the building is roofed using a terracotta hipped roof; whereas the front of the structure is roofed using a corrugated iron skillion roof from the parapet. Additional features include a mirrored glass window wall which was installed in c1965.
Statement of significance	<i>The building at 215-217 Church Street, built c1927, is of significance within Parramatta for historical and aesthetic reasons and as a representative example of an Interwar Stripped Classical architectural style building that demonstrates the commercial role of Parramatta in the twentieth century. The site possesses potential to contribute to an understanding of early urban development in Parramatta.</i>
Impact type	No impact

¹⁵⁹ OEH, 2002. 'HMV and Potential Archaeological Site'. Accessed 10 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240111>

HMV (former Commonwealth Bank) (and potential archaeological site) ¹⁵⁹

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

Stage 1 would result in demolition of development and construction activities on the eastern side of Church Street, directly opposite the HMV building. This would change the wider context of the historic building. This context has been previously altered by modern development within and surrounding the construction site and the nearby modern buildings are not considered to represent a significant visual element in the surrounding setting of the HMV building.

Indirect impact: Negligible

Table 23: Telstra House (former post office) (and potential archaeological site) heritage impact assessment

Telstra House (former post office) (and potential archaeological site) ¹⁶⁰

Image



Figure 133: Telstra House from Church Street. Artefact Heritage 2019

Significance Local

Description

The two-storey Telstra House building was constructed from 1880 in the Victorian Mannerist style. The sandstone building is arcaded on both storeys with grey marble columns on the upper arcade. The roof is hipped with a projecting central bay. Additional features include a fanlight over central French doors, Victorian label moulds over windows, and two rendered chimneys with cornice decorations.

¹⁶⁰ OEH, 2002. 'Telstra House and Potential Archaeological Site'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=2240110>

Telstra House (former post office) (and potential archaeological site) ¹⁶⁰

Statement of significance	<i>The building at 213 Church Street is of significance for the Parramatta area for historical and aesthetic reasons and as representative example of a Victorian Mannerist building and post office in the area. Built in c1880, it makes major contribution to the streetscape and is an example of the work of notable architect James Barnett.</i>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and associated construction activities on the eastern side of Church Street, directly opposite the Telstra House building. This would change the surrounding context of the historic building. This context has been previously altered by modern development within and surrounding the construction site and the nearby modern buildings are not considered to represent a significant visual element in the surrounding setting of the Telstra House building. Indirect impact: Negligible</p>

Table 24: Shop (and potential archaeological site) heritage impact assessment

Shop (and potential archaeological site) ¹⁶¹

Image



Figure 134: Shop from Macquarie Street. Artefact Heritage 2019

Significance	Local
Description	<p>The two-storey shop building was developed from 1925 in the Interwar Stripped Classical style. Constructed using stuccoed brickwork, the outer walls have a distinctive decorative stringline and parapet above the entablature and splayed entrance. The building comprises a flat awning with Wunderlich ceilings and a memorial stone, inscribed with 'Murray Bros. Parramatta Ltd.' flanked by decorations.</p>
Statement of significance	<p><i>The building at 197 Church Street is of significance for the Parramatta area for historical and aesthetic reasons and as a representative example of an Interwar period Stripped Classical architectural style that demonstrates the commercial role of Parramatta in the twentieth century. The building is a related place to a number of buildings associated with the Murray Bros., being a former major department store of this group. Today, it is an important element of the streetscape in Church Street, contributing strongly to the townscape. The site has potential to contribute to an understanding of early urban development of the area.</i></p>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and associated construction activities on the eastern side of Church Street, directly opposite the listed shop building at 197 Church Street. This would change the wider context of the historic building. This context has been previously altered by modern development within and around the construction site, and the nearby modern buildings are not considered to represent a significant visual element in the surrounding setting of the shop building. Indirect impact: Negligible</p>

¹⁶¹ OEH, 2015. 'Shop and Potential Archaeological Site'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=2240108>

Table 25: Bicentennial Square and adjoining buildings heritage impact assessment

Bicentennial Square and adjoining buildings¹⁶²

Image



Figure 135: Bicentennial Square. Artefact Heritage 2019

Significance	Local
Description	Bicentennial Square was developed from 1888 to 1988 and is an important open civic space surrounded by a variety of historic two-storey structures. The square comprises Bicentennial Square, the Victorian Free Classical drinking fountain monument, the amphitheatre, memorial gates and clock. Significant views include vistas to St Johns, the Parish Hall, Town Hall, Centennial Memorial, the Murray Bros Buildings and the Victoria Façade with Horse Parapet.
Statement of significance	<i>Bicentennial Square is of significance for the local area for historical and aesthetic reasons, and as a locally unique set of examples of various types of buildings that collectively and individually form local landmarks. The Square provides evidence of local and regional amenities and services in Parramatta.</i>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and construction activities on the northern side of Macquarie Street in the vicinity of Bicentennial Square. This landmark open public space includes important sightlines to surrounding heritage items, none of which would be obstructed or permanently altered by the Parramatta metro station construction site. Stage 1 would result in changes to the wider context of Bicentennial Square. The nearby modern buildings within the construction site that would be demolished are not considered to represent a significant visual element in the setting of Bicentennial Square. Indirect impact: Negligible</p>

¹⁶² OEH, 2002. 'Bicentennial Square and Adjoining Buildings'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240103>

Table 26: Centennial Memorial Clock heritage impact assessment

Centennial Memorial Clock¹⁶³

Image



Figure 136: Centennial Memorial Clock from within Centenary Square. Artefact Heritage 2019

Significance	Local
Description	<p>The Centennial Memorial Clock was erected in 1888 in the Victorian Free Classical style. Built using sandstone and incorporating a four-faced clock, it is flanked by circular sandstone steps. The clock tower is set upon Victorian columns with four splayed faced containing drinking fountains upon raised circular plinth steps. Additional features include a marble tablet inscribed with the names of Mayor Charles J Byrnes and eleven aldermen in office during 1888. The memorial clock is an important element within the civic setting of its location in Bicentennial Square.</p>
Statement of significance	<p><i>The Centennial Memorial Clock is significant within Parramatta historically and aesthetically in addition to its association with the founding of the colony and town of Parramatta and Mayor Charles J. Byrnes.</i></p>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and construction activities on the northern side of Macquarie Street, directly opposite the Centennial Memorial Clock. This would change the wider context of the historic memorial feature. This context has been previously altered by modern development within the construction site and surrounding, and the nearby modern buildings are not considered to represent a significant visual element in the surrounding setting of the Centennial Memorial Clock. Indirect impact: Negligible</p>

¹⁶³ OEH, 2002. 'Centennial Memorial Clock'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240107>

Table 27: Leigh Memorial Uniting Church heritage impact assessment

Leigh Memorial Uniting Church¹⁶⁴

Image



Figure 137: Leigh Memorial Uniting Church. Artefact Heritage 2019

Significance	Local
Description	<p>Leigh Memorial Uniting church was constructed between 1834 and 1835 from speckled tuck-pointed brick upon sandstone foundations. The structure comprises a parapeted slate gable roof with large stone turrets on tower buttresses, sandstone label moulds above windows and doors, and a double front door with diagonal timber tongue and groove panelling and decorative cast iron hinges. Additional features include an octagonal belfry on the square tower.</p>
Statement of significance	<p><i>Leigh Memorial Uniting Church, at 119 Macquarie Street, is of significance for Parramatta area for historical and aesthetic reasons and as a representative example of a Victorian Free Gothic style church. Built c1834, it gives evidence of social and cultural life in the nineteenth and twentieth centuries and continues to contribute to the streetscape.</i></p>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development and construction activities on the northern side of Macquarie Street, near the Leigh Memorial Uniting Church. This would change the wider context of the historic church, although this context has been previously altered by modern development within the construction site and surrounding areas. The nearby modern buildings that would be demolished as part of Stage 1 are not considered to represent a significant visual element in the surrounding setting of the Leigh Memorial Uniting Church. Indirect impact: Negligible</p>

¹⁶⁴ OEH, 2002. 'Leigh Memorial Uniting Church'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240359>

6.3.4 Potential unlisted heritage items

This section provides a preliminary assessment of significance and impact assessment for potential unlisted heritage items that are located within the Parramatta metro station construction site.

6.3.4.1 220 Church 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.



Figure 138: View of building at 220 Church Street¹⁶⁵

¹⁶⁵ Google Maps 2019



Figure 139: Church Street, 1907 showing subject building (indicated by arrow) within terrace group¹⁶⁶



Figure 140: Church Street, circa 1940s showing subject building (indicated by arrow) within terrace group¹⁶⁷

Assessment of significance

The following table provides an assessment of significance for the late 19th century Victorian Italianate style commercial building located at 220 Church Street, Parramatta.

¹⁶⁶ National Museum Australia. Call No. 1986. 0117.1605. Accessed online at: <http://collectionsearch.nma.gov.au/object/32267>

¹⁶⁷ National Library of Australia. Hurley, Frank (1910) 'Church Street Parramatta [Sydney, New South Wales]'. Call No. PIC FH/7435 LOC. Accessed online at: <http://nla.gov.au/nla.obj-160078129>

Table 28: Significance assessment for the building at 220 Church Street, Parramatta

Criterion	Explanation
A – Historical Significance	<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>
B – Associative Significance	<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 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>
C – Aesthetic or Technical Significance	<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>
D – Social Significance	<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>
E – Research Potential	<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	Explanation
F – Rarity	<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>
G – Representativeness	<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 decorative 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>

Summary of significance

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 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.

Heritage impact assessment

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. The overall impact on this potential unlisted heritage item would be **major**.

6.3.4.2 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.



Figure 141: View to building at 48 Macquarie Street, Parramatta¹⁶⁸

Assessment of significance

The following table provides an assessment of significance for the Moderne style commercial building located at 48 Macquarie Street, Parramatta.

Table 29: Significance assessment for the building at 48 Macquarie Street, Parramatta

Criterion	Explanation
A – Historical Significance	<p>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.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
B – Associative Significance	<p>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</p> <p>The item does not meet the local significance threshold under this criterion.</p>

¹⁶⁸ Google Maps 2019

Criterion	Explanation
C – Aesthetic or Technical Significance	<p>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.</p> <p>The item potentially meets the local significance threshold under this criterion.</p>
D – Social Significance	<p>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.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
E – Research Potential	<p>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 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>
F – Rarity	<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>
G – Representativeness	<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>

Summary of significance

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

interior of the building would be required to confirm its aesthetic significance and degree of intactness and integrity. The building at 48 Macquarie Street has potential to meet the threshold of local heritage significance.

Heritage impact assessment

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. The overall impact on this potential unlisted heritage item would be **major**.

6.3.5 Overview of heritage impacts

6.3.5.1 Listed heritage items

The following table provides an overview of the Stage 1 impacts on listed heritage items, associated with the Parramatta metro station construction site.

Table 30: Heritage impacts for Parramatta metro station construction site on listed items

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
Shops (and potential archaeological site)	Parramatta LEP Item No. I703	Local	Minor	Minor	Minor
Convict Drain	Parramatta LEP Item No. I647	Local	Minor	Minor	Neutral
Roxy Theatre	SHR Listing No. 00711 Parramatta LEP Item No. I00711	State	Neutral	Minor	Minor
Horse Parapet Façade (and potential archaeological site)	Parramatta LEP Item No. I656	Local	Neutral – potential minor	Minor	Minor
Murrays' Building (and potential archaeological site)	Parramatta LEP Item No. I652	Local	Neutral	Neutral	Minor
Kia Ora (and potential archaeological site)	Parramatta LEP Item No. I716	Local	Minor	Minor	Negligible
Dr Pringle's Cottage	Parramatta LEP Item No. I705	Local	Neutral	Neutral	Negligible
Redcoat's Mess House	SHR Listing No. 00218 Parramatta LEP Item No. I00218	State	Neutral	Neutral	Neutral
Civic Arcade (former theatre) (and potential archaeological site)	Parramatta LEP Item No. I704	Local	Neutral	Neutral	Negligible

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
Westpac Bank	Parramatta LEP Item No. I665	Local	Neutral	Neutral	Minor
Former Courthouse Wall and Sandstone Cellblock (and potential archaeological site)	Parramatta LEP Item No. I659	Local	Neutral	Neutral	Neutral
HMV (former Commonwealth Bank) (and potential archaeological site)	Parramatta LEP Item No. I658	Local	Neutral	Neutral	Negligible
Telstra House (former post office) (and potential archaeological site)	Parramatta LEP Item No. I657	Local	Neutral	Neutral	Negligible
Shop (and potential archaeological site)	Parramatta LEP Item No. I655	Local	Neutral	Neutral	Negligible
Bicentennial Square and adjoining buildings	Parramatta LEP Item No. I651	Local	Neutral	Neutral	Negligible
Centennial Memorial Clock	Parramatta LEP Item No. I654	Local	Neutral	Neutral	Negligible
Leigh Memorial Uniting Church	Parramatta LEP Item No. I719	Local	Neutral	Neutral	Negligible

6.3.5.2 Potential unlisted heritage items

The following table provides an overview of the Stage 1 impacts on potential unlisted heritage items, associated with the Parramatta metro station construction site.

Table 31: Heritage impacts for Parramatta metro station construction site on potential unlisted items

Heritage item	Significance	Direct impact	Potential direct impact	Indirect impact
220 Church Street, Parramatta	Local	Major	N/A	N/A
48 Macquarie Street, Parramatta	Local	Major	N/A	N/A

6.4 Clyde stabling and maintenance facility construction site

6.4.1 Summary of heritage listed items

Table 32 provides a summary of the listed heritage items located within the study area surrounding the Clyde stabling and maintenance facility construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 142.

Table 32: Heritage items within Clyde stabling and maintenance facility construction site study area

Heritage item	Register listings	Address	Significance	Relationship to the construction site
Wetlands	Parramatta LEP Item No. I1	Parramatta River, Camellia, Ermington, Parramatta and Rydalmere, NSW	Local	Partially within construction site.
RTA Depot	Parramatta LEP Item No. I576	1B and 5 Unwin Street, Rosehill NSW 2142	Local	Within construction site
Capral Aluminium	Parramatta LEP Item No. I575	3-11 Shirley Street, Rosehill, NSW 2142	Local	Partially within buffer zone; 20 metres east of construction site

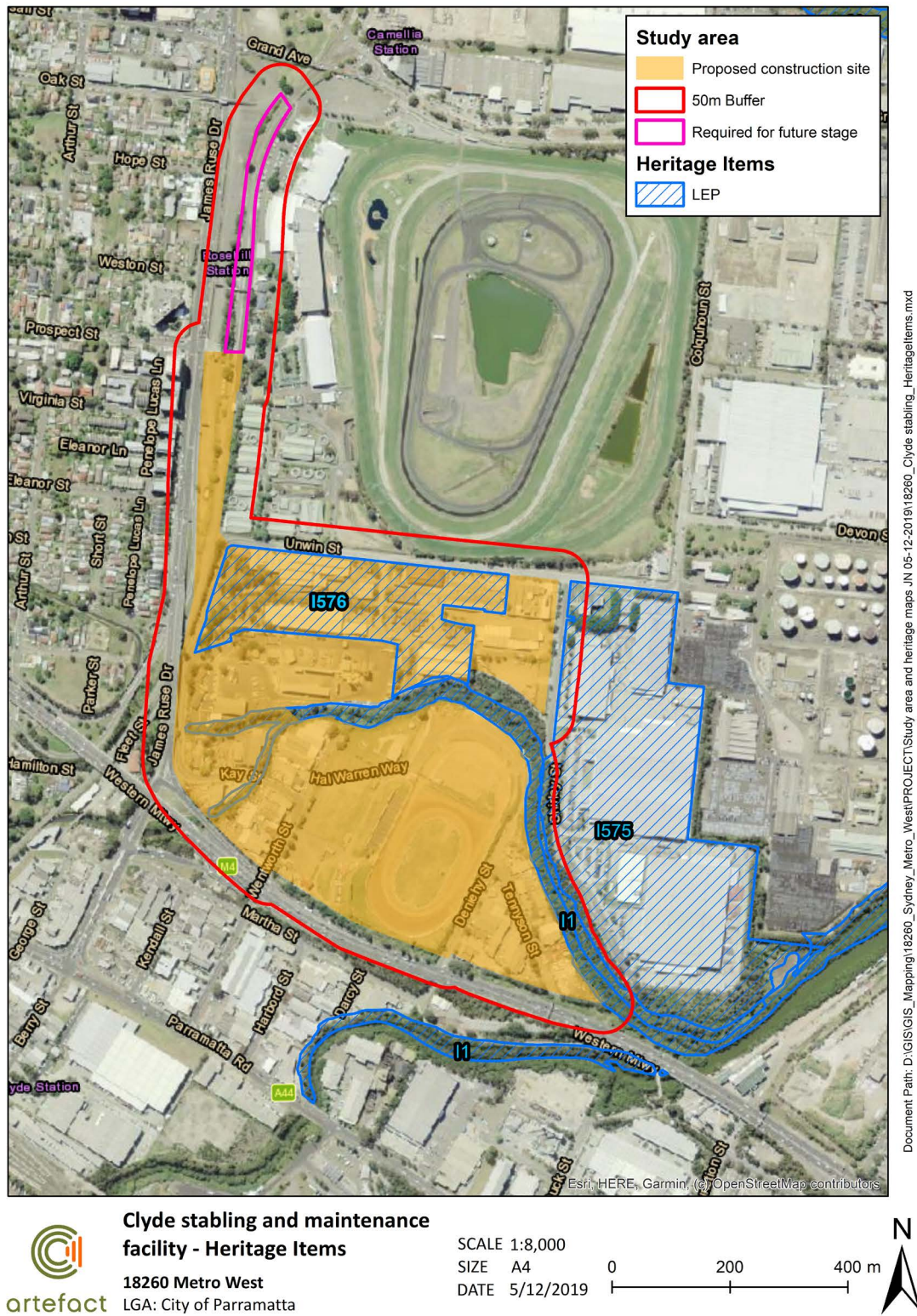


Figure 142: Clyde stabling and maintenance facility construction site heritage items map

6.4.2 Existing environment

The existing environment surrounding the Clyde stabling and maintenance facility construction site is industrial. The study area is set within the RTA Depot, a heavily modified industrial landscape north of the Duck River; and the Sydney Speedway and surrounding industrial streetscape, south of the Duck River. The wider context surrounding the Clyde stabling and maintenance facility site construction site is predominantly industrial, including the historic Capral Aluminium site to the east. The Rosehill Race Track is located to the north. Duck River, a tributary of the Parramatta River, is located running through the study area and includes the heritage listed Wetlands ecosystem. Duck River provides a natural barrier between the study area and industrial context of Silverwater beyond.



Figure 143: View east along Unwin Street towards Clyde stabling and maintenance facility construction site study area showing surrounding industrial development



Figure 144: View east along Unwin Street adjacent to Clyde stabling and maintenance facility construction site; showing the RTA Depot



Figure 145: View south along Shirley Street adjacent to Clyde stabling and maintenance facility construction site; showing Capral Aluminium



Figure 146: View north showing the Duck River within the Clyde stabling and maintenance facility construction site



Figure 147: View southeast from Wentworth Street, showing existing the Sydney Speedway within the construction site



Figure 148: View southwest along Deniehy Street, showing Sydney Speedway retaining wall and streetscape within construction site



Figure 149: View southeast along Tennyson Street showing streetscape within the construction site



Figure 150: View south along James Ruse Drive within Rosehill Gardens racecourse and Station overflow parking within the construction site

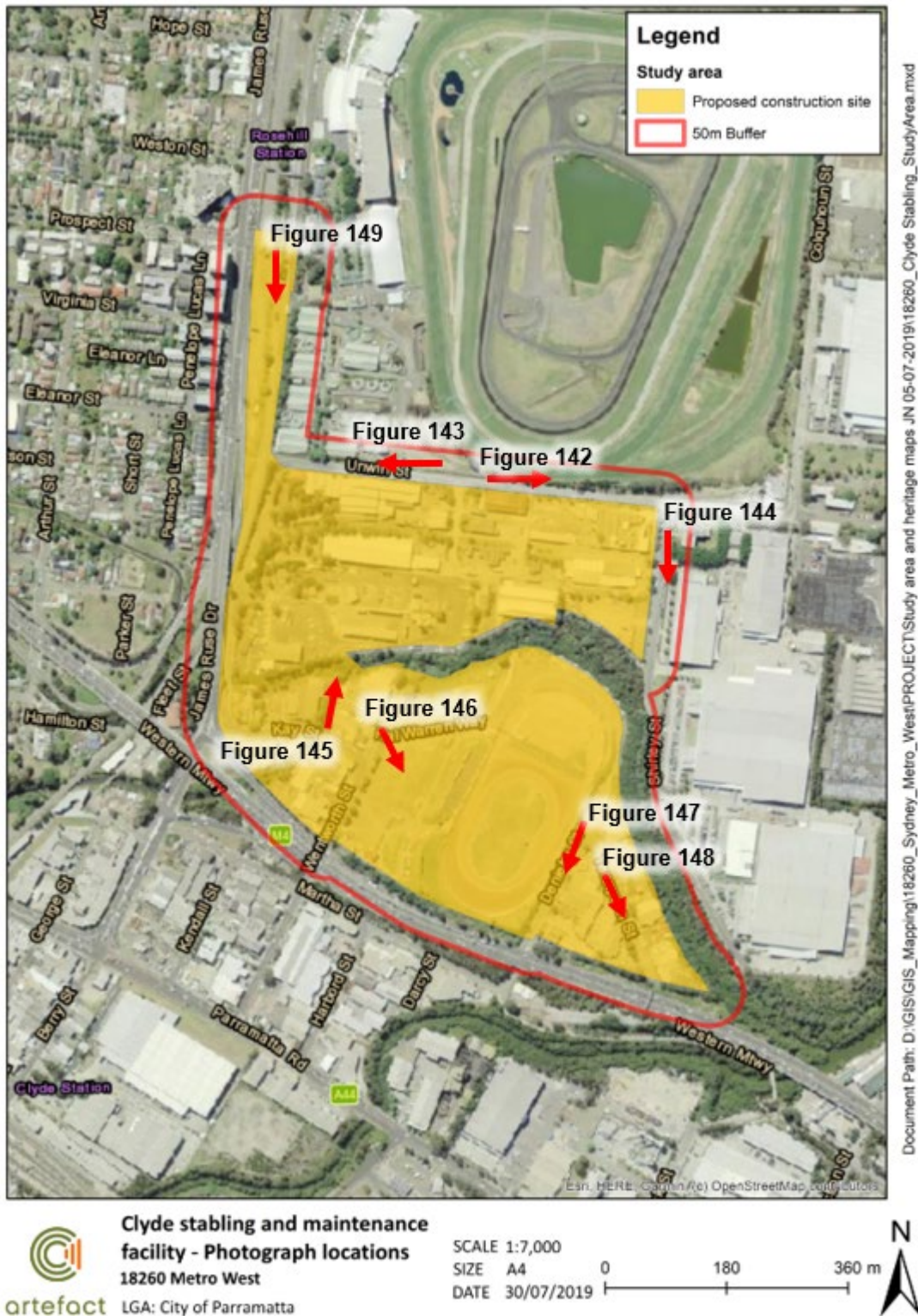


Figure 151: Clyde stabling and maintenance facility construction site existing environment photograph location map

6.4.3 Significance and impact assessments for individual items

Table 33 to Table 34 provides a significance assessment of the listed heritage items within the study area surrounding the Clyde stabling and maintenance facility construction site.

Table 33: Wetlands heritage impact assessment

Wetlands ¹⁶⁹

Image



Figure 152: Wetlands. Artefact Heritage 2019

Significance	Local
Description	The wetlands, located along the foreshores of the Parramatta and Duck Rivers and their tributaries, Vineyard and Subiaco Creeks, comprise of remnant wetland vegetation including mangrove and saltmarsh complexes.
Statement of significance	<i>The wetlands along Parramatta River are of significance for Parramatta area as remnant representative areas of mangroves and salt marshes which once extensively lined the foreshores and tidal water flats of the region.</i>
Impact type	Direct impact: Partial demolition/removal Indirect impact: Views and vistas
Heritage impact assessment	<p>Stage 1 for the Clyde stabling and maintenance facility including ancillary infrastructure and construction activities would require direct impact on the wetlands, resulting in permanent changes to this heritage item. Civil works to establish the maintenance and stabling yard landform and associated structures over A'Becketts Creek and Duck Creek would involve localised removal (0.7 hectares) of vegetation within the affected portion of the item. Additional changes would occur during construction phases; however, these changes would be considered temporary in nature. 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>Direct impact: Minor</p> <p>Construction for Stage 1 would occur within and adjacent to the wetlands heritage item. The removal of vegetation, civil works, and the establishment of new structures over A'Beckett's Creek and Duck Creek would result in permanent visual changes to the character and aesthetic qualities of the wetland, whilst changing the wider context and setting of the ecological item. Stage 1 would result in a minor visual impact on the</p>

¹⁶⁹ OEH, n.d. 'Wetlands. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=2240429>

Wetlands ¹⁶⁹

wetlands. Activities in the construction site (such as the concrete segment production facility) in the vicinity of the heritage curtilage of the wetlands would further change the setting and context of the item, although this aspect of Stage 1 would be temporary in nature.

Indirect impact: Minor

Table 34: RTA Depot heritage impact assessment

RTA Depot ¹⁷⁰

Image



Figure 153: RTA Depot from Unwin Street. Artefact Heritage 2019

Significance	Local
Description	The RTA Depot complex is bordered by Unwin Street to the north, Shirley Street to the east, Duck River and the Wetlands to the south and James Ruse drive to the west. The Main Roads Board depot had been situated on this time prior to 1940. The current multi-storey framed industrial workshop with brick walling and concrete structural frame and corrugated fibro saw-tooth roof includes a pedimented façade with the words 'Department of Main Roads 1944' inscribed. The site also includes a number of other workshops and structures, in addition to the remnants of a rail siding.
Statement of significance	<i>The RTA Depot at Unwin Street is of significance for Parramatta for historical, aesthetic and reasons of rarity and representativeness. The depot is representative of amenities and services building s of the time of its creation, additionally rare in the local area and in use of public authorities since its creation. Due to its size and function, it presents a local landmark and strongly contributes to the streetscape.</i>
Impact type	Direct impact: Partial demolition/removal Potential direct impact: Vibration Indirect impact: Views and vistas

¹⁷⁰ OEH, 2014. 'RTA Depot. Accessed 4 July 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240314>

Heritage impact assessment This heritage item is located within the Clyde stabling and maintenance facility construction site. The heritage item consists of the multi-storey framed industrial workshop at 1B and 5 Unwin Street, in addition to a collection of modern structures, at 49-57 George Street which is currently occupied by industrial organisations including Downer, Waco International, Coates Hire and Killard Excavations. The heritage curtilage includes modern buildings that are not considered to have heritage significance, the heritage significant fabric appears to be limited to the c1944 brick workshop with 'Department of Main Roads 1944' pediment. Construction of Stage 1 would result in demolition of modern development/additions within the heritage curtilage of this item, in addition to all other developments/structures within the construction zone, excluding the multi-storey brick structure fronting Unwin Street. The historic multi-storey brick structure fronting Unwin Street would be retained and would not be demolished. Demolition of modern buildings on the site and excavation and construction of the Rosehill dive structures and tunnel portal would not result in any substantial adverse heritage impact, and would not result in the item's heritage listing eligibility being reduced. It is possible that minor impact to the remaining historic building could occur due to vibration or accidental damage during construction, which could potentially result in localised physical impact although this would be minor in nature.

Direct impact: Minor

The heritage item is located within the construction site. The heritage item is predicted to experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.

Potential direct: Minor

The heritage item consists of the multi-storey framed industrial workshop at 1B and 5 Unwin Street. The heritage curtilage includes modern buildings that are not considered to have heritage significance.

The demolition of existing modern buildings within the heritage item for Stage 1 would result in changes to the existing aesthetic quality and character of the item, although the modern buildings are not considered to represent a significant visual component of the historic shop.

Stage 1 would result in demolition of all other modern developments within the construction site. In addition, a road bridge would be introduced, further altering the visual setting of the heritage item. The context and views and vistas have been previously altered by modern development within the construction site and surrounding streetscape so no further visual impacts are expected in this regard.

Indirect impact: Minor

Table 35: Capral Aluminium heritage impact assessment

Capral Aluminium¹⁷¹

Image



Figure 154: Capral Aluminium from Unwin Street. Artefact Heritage 2019

Significance	Local
Description	<p>The Capral Aluminium complex is bordered by Unwin Street to the north, Shirley Street to the west, Duck River and the Wetlands to the south and further industrial area to the east. The multi-storey office building was developed during the late 1930 in the Art Deco style. The office building is constructed of light coloured brick and incorporates a flat roof, flagpoles, landscaped garden and an entrance porch with concrete canopy. Additional features include wide, tall windows with louvres and a tall brick-clad steel framed workshop.</p>
Statement of significance	<p><i>The site of Capral Aluminium is of significance for the Parramatta area for historical, associative and reasons of representativeness. The site provides evidence of major local industry and manufacturing. This site was of prime importance during World War II, a role which emphasised the regional significance of Parramatta. It is also a fine example of modern industrial building with all its facilities.</i></p>
Impact type	Indirect impact: Views and vistas
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>The Capral Aluminium complex is located immediately adjacent to the Clyde stabling and maintenance facility construction site, and would have direct views between the historic office building and the construction site. The introduction of structures over Duck Creek and A'Becketts Creek is not expected to cause indirect (visual) impact above minor to the heritage item due to the extensive vegetation screening along the alignment of the creeks. The heritage curtilage for the item covers the entire lot boundary, and significant extant fabric is mainly limited to the multi-storey office</p>

¹⁷¹ OEH, 2014. 'Capral Aluminium'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2240574>

Capral Aluminium¹⁷¹

building fronting Unwin Street, directly adjacent to the construction site. The primary outlook of this building is looking north over Unwin Street and the Rosehill Gardens racecourse beyond. Views to the west from the building towards the construction site would be changed by the construction activities. Stage 1 would result in changes to the wider context and setting of the heritage item, which has historically comprised an industrial landscape. The historic industrial setting of this heritage item has been subject to ongoing change.

Indirect impact: Minor

6.4.4 Potential unlisted heritage items

This assessment has not identified any potential unlisted heritage items within this Stage 1 construction site.

6.4.5 Overview of heritage impacts

The following table provides an overview of the Stage 1 heritage impacts associated with the Clyde stabling and maintenance facility construction site.

Table 36: Heritage impacts for Clyde stabling and maintenance facility construction site

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
Wetlands	Parramatta LEP Item No. I1	Local	Minor	N/A	Minor
RTA Depot	Parramatta LEP Item No. I576	Local	Minor	Minor	Minor
Capral Aluminium	Parramatta LEP Item No. I575	Local	Neutral	Neutral	Minor

6.5 Silverwater services facility construction site

6.5.1 Summary of heritage listed items

There are no heritage items located within the study area surrounding the Silverwater services facility construction site. No unlisted heritage items were identified.



Figure 155: Silverwater services facility construction site heritage items map

6.5.2 Existing environment

The existing environment surrounding the Silverwater services facility construction site is industrial; a heavily modified landscape. The study area is set within an existing vacant industrial lot, at the corner of Silverwater Road and Derby Street.



Figure 156: View west along Derby Street; showing streetscape adjacent to Silverwater services facility construction site



Figure 157: View southwest from Derby Street showing the Silverwater services facility construction site



Figure 158: View southwest from Derby Street showing the Silverwater services facility construction site



Figure 159: View east from Silverwater Road showing the Silverwater services facility construction site

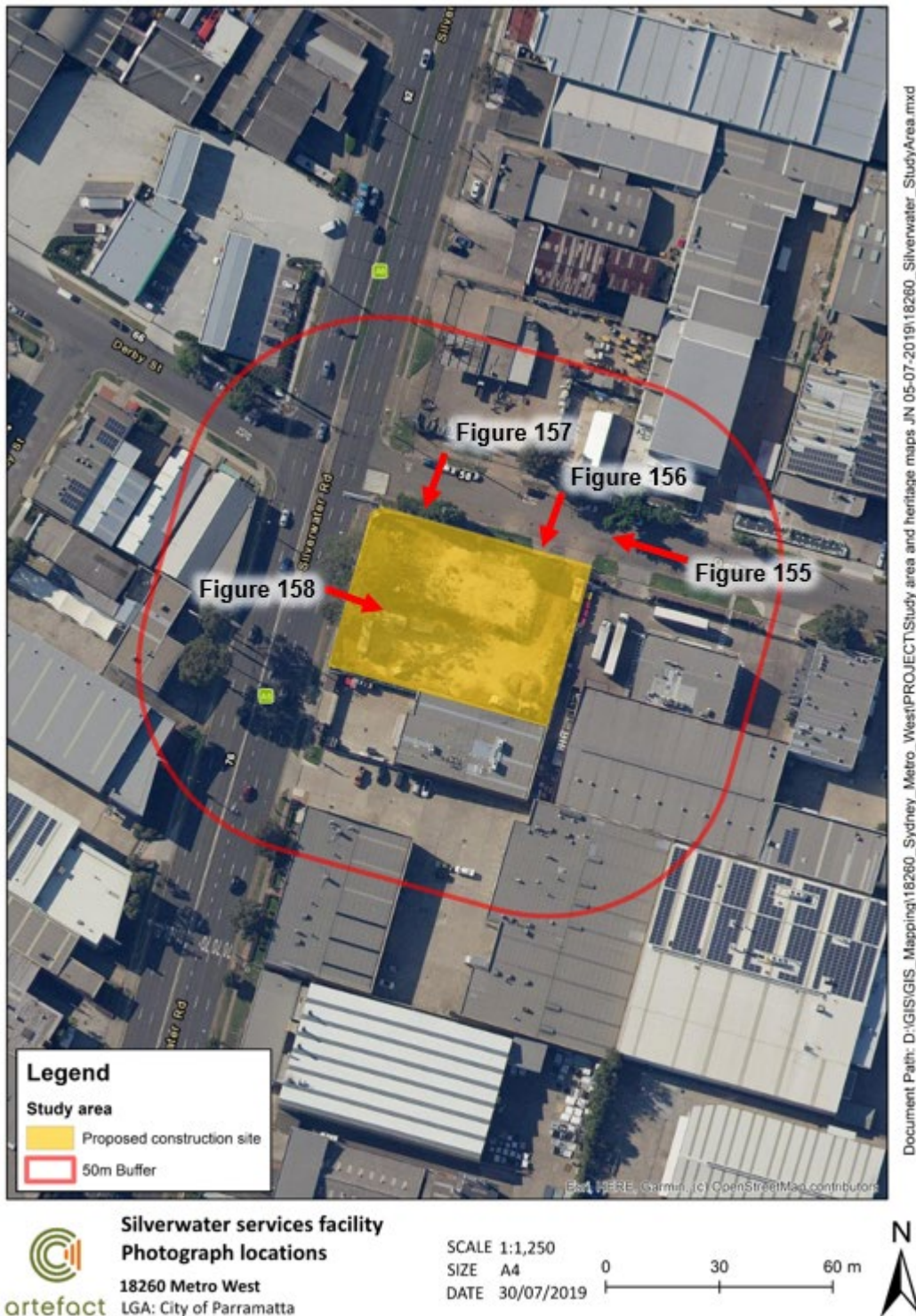


Figure 160: Silverwater services facility construction site existing environment photograph location map

6.6 Sydney Olympic Park metro station construction site

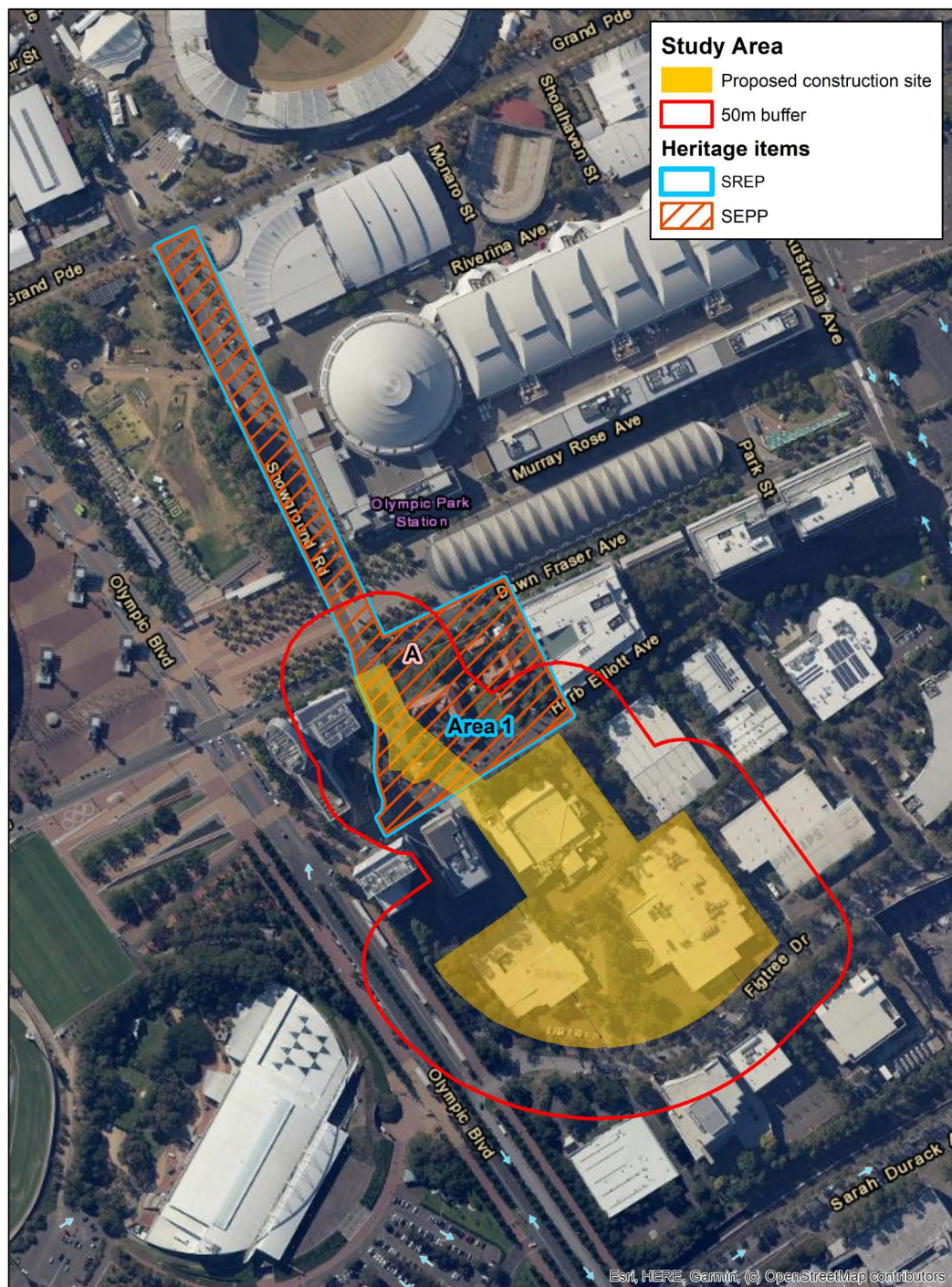
6.6.1 Summary of heritage listed items

Table 37 provides a summary of the listed heritage items located within the study area surrounding the Sydney Olympic Park metro station construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 161.

Table 37: Heritage items within Sydney Olympic Park metro station construction site study area

Heritage item	Register listings	Address	Significance	Relationship to the construction site
State Abattoirs ¹⁷²	State Environmental Planning Policy (State Significant Precincts) 2005 Listing No. A; Sydney Regional Environmental Plan No 24 – Homebush Bay Area Item No. 1	Showground Road, Sydney Olympic Park, NSW 2127	State	Partially within construction site

¹⁷² The State Abattoirs are listed as State significant on the State Environmental Planning Policy (SEPP) and the Sydney Regional Environmental Plan (SREP), however, the item is not listed on the State Heritage Register (SHR).



**Sydney Olympic Park Metro
Station - Heritage Items**
18260 Metro West
LGA: City of Parramatta

SCALE 1:3,600
SIZE A4
DATE 5/12/2019

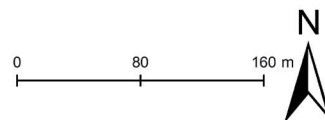


Figure 161: Sydney Olympic Park metro station construction site heritage items map

6.6.2 Existing environment

The urban context surrounding the Sydney Olympic Park metro station construction site comprises a combination of commercial buildings, retail development and high density residential apartment buildings. Sydney Olympic Park was designed to cater for high volume events, although since its original design parts of the park have been converted for residential and commercial use. Demonstrative of its original design for high volume events, the surrounding road network comprises wide multi-lane roads.

A distinctive component within the existing modern environment of Sydney Olympic Park is the remnant built and landscape elements associated with the heritage listed State Abattoirs. This includes an assortment of attractive Federation era brick buildings with terracotta tiled roofs and plastered walls, a carriage loop, palm grove, garden beds, interpretive elements, and other landscaping. Of particular interest, a small single-storey face brick building, the former Gatehouse, is located on the corner of Showground Road and Herb Elliot Avenue.



Figure 162: View northwest along Showground Road from State Abattoirs showing distant development



Figure 163: View southeast along Showground Road showing buildings and landscaping associated with State Abattoirs



Figure 164: View northwest across Herb Elliott Avenue towards State Abattoirs including single storey gatehouse (seen centre)



Figure 165: View northwest across Herb Elliot Avenue towards Federation style buildings associated with State Abattoirs



Figure 166: View southeast across Herb Elliott Avenue showing existing development within the Sydney Olympic Park metro station construction site



Figure 167: View east across Herb Elliott Avenue showing existing development within the Sydney Olympic Park metro station construction site



Figure 168: View northeast along Herb Elliott Avenue showing surrounding streetscape and development



Figure 169: View northwest from Figtree Drive towards existing commercial development and carpark within the Sydney Olympic Park metro station construction site

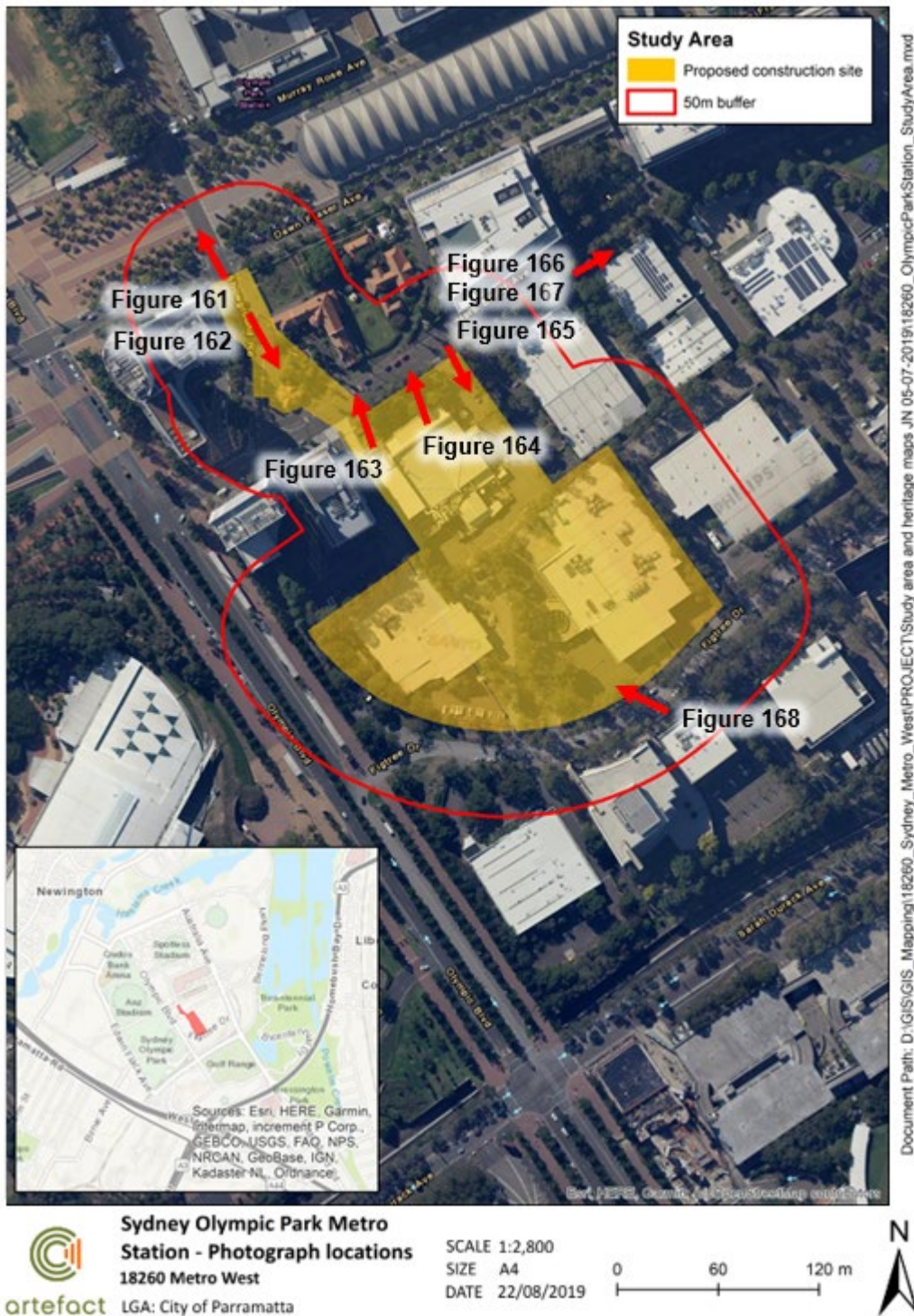


Figure 170: Sydney Olympic Park metro station construction site existing environment photograph location map

6.6.3 Significance and impact assessments for individual items

Table 38 provides a significance assessment of the listed heritage items within the study area surrounding the Sydney Olympic Park metro station construction site.

Table 38: State Abattoirs heritage impact assessment

State Abattoirs ¹⁷³

Image



Figure 171: State Abattoirs. Artefact 2019

Significance State ¹⁷⁴

The State Abattoirs were developed between 1913 and 1988. Significant remnant elements within the former abattoir site include a collection of five distinctive Federation style buildings designed by Government Architect Walter Liberty Vernon, set within attractive landscaped gardens that were designed by Government Botanist and Director of Sydney Botanic Gardens Joseph Maiden.

The buildings are constructed using face brickwork with terracotta tiled hipped roofs, with varying decorative features including sandstone and/or brick banding, roughcast render, chimneys, timber-framed windows and panelled timber doors. Several of the buildings feature large verandahs.

Description

Of particular relevance to this assessment is the former State Abattoirs gatehouse. The gatehouse structure is a small single storey face brick building with hipped terracotta shingled roof. The structure comprises a dressed sandstone plinth and banding, verandah with boarded ceilings, a central chimney, and a c1950s northern extension with skillion roof. Significant landscape elements around the gatehouse include a gate post and wall on the eastern side of Showground Road, garden beds and palm grove associated with the adjacent carriage loop, and several pieces of agricultural themed timber furniture.

The State Abattoirs heritage item also includes an avenue of Canary Island Date Palms that are located along the eastern side of Showground Road to the intersection at Grand Parade. These palms are an important element in the State Abattoir landscaping, dating to the early twentieth century.

¹⁷³ Graham Brooks and Associates Pty Ltd, 2013. *Abattoir Heritage Precinct Conservation Management Plan*. Sydney Olympic Park Authority, Sydney.

¹⁷⁴ The State Abattoirs are listed as State significant on the State Environmental Planning Policy (SEPP) and the Sydney Regional Environmental Plan (SREP), however, the item is not listed on the State Heritage Register (SHR).

State Abattoirs 173

Statement of significance	<p><i>The Abattoir Heritage Precinct at Sydney Olympic Park is of State significance as a rare, intact and extant component of the Homebush State Abattoirs, dating from 1913-1988. The State Abattoirs was Australia's largest and most modern abattoir during this period, responsible for the centralised control of meat slaughtering, sale and distribution in Sydney. The Precinct became an integral part of the activities during the Sydney 2000 Olympic and Paralympic Games.</i></p> <p><i>The complex has local significance for its historical associations with D'Arcy and William Charles Wentworth, Government Architect Walter Liberty Vernon who designed the buildings and Joseph Maiden, Director of Sydney Botanic Gardens and Government Botanist who designed the gardens. The Precinct is also significant for its association with the Sydney 2000 Olympic and Paralympic Games.</i></p> <p><i>The site has aesthetic significance at a local level as an attractive group of Federation era buildings within landscaped gardens and lawns and as a historic landmark within a contemporary urban landscape. The buildings are representative examples of Federation period architecture, set within a good example of Federation period landscaping, with many elements, materials, plants, layout and details typical of this period.</i></p>
Impact type	<p>Direct: Moderate Potential direct: Vibration Indirect impact: Views and vistas</p>
Heritage impact assessment	<p>Stage 1 of Sydney Olympic Park metro station construction activities would encroach upon the heritage curtilage of this item and involve direct impact. The area of the heritage curtilage within the construction site includes the former State Abattoirs gatehouse and associated landscaping within the carriage loop, and plantings along the alignment of Showground Road. The gatehouse building would be retained and would not be affected by demolition activities within the construction site. Trees and vegetation within the Stage 1 construction site would be removed. This includes significant mature plantings and palm grove, garden beds, kerbing and landscape elements associated with the former carriage loop that are identified in the Conservation Management Plan (CMP) as being of 'high/medium' significance. The loss of these elements would represent a permanent physical impact, although reinstatement of sympathetic landscaping that is in keeping with the provisions of the CMP would assist in mitigating this impact. Further, Sydney Metro is currently investigating alternate construction options to cut and cover in the vicinity of Herb Elliot Avenue, which would potentially avoid or minimise direct impacts to the heritage item.</p> <p>Direct impact: Moderate</p> <p>Part of the State Abattoirs complex is within the construction site. The gatehouse and the Administration Block building (to the east of the construction site) is predicted to experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.</p> <p>Potential direct: Minor</p> <p>The removal of trees, landscape elements and garden beds within the former carriage loop adjacent to the gatehouse would result in changes to the aesthetic quality and character of the historic complex. The landscaping considerably enhances the intactness and significance of the former State Abattoirs precinct. The palm grove within the carriage loop in particular, comprising mature palm trees, offers landmark qualities in the surrounding area. Removal of this portion of landscaping would represent a permanent visual impact. The demolition of existing modern buildings on the southern side of Herb Elliott Avenue within the construction site for Stage 1 would</p>

State Abattoirs ¹⁷³

result in visual changes to the surrounding context and setting of the former State Abattoirs, although the modern buildings are not considered to represent a significant visual component of the historic agricultural complex. The context of this heritage item has been previously altered by the Sydney Olympic Park redevelopment and existing commercial development within the construction site, and the setting is identified in the CMP as being of 'neutral/low' significance. The nearby acoustic shed located opposite on the southern side of Herb Elliott Avenue would be around 15 metres in height and would be visually discernible from views looking out from the former State Abattoirs including the principal multi-storey historic buildings and gardens. The additional visual impact associated with the acoustic shed would be temporary in nature.

Indirect impact: Moderate

6.6.4 Assessment against conservation management policies

6.6.4.1 State Abattoirs

The conservation policies provided in the Conservation Management Plan (CMP) prepared for the Abattoir Heritage Precinct have been reviewed. Policies provided in the CMP relevant to assessing the impacts of the project have been extracted and provided below for reference.

Table 39: Relevant conservation policies – Abattoir Heritage Precinct Conservation Management Plan¹⁷⁵

Policy	Assessment of impacts against recommendations
	<i>Though the setting of the precinct does not contribute particularly to its significance, assess the impact of any near-by large-scale development upon the heritage significance of the site.</i>
7	Stage 1 involves demolition of existing development and construction activities in the direct vicinity of the State Abattoirs heritage curtilage, which would change the existing visual context and setting of the site. As identified in the above policy, the setting is not considered to contribute to the significance of the item and is graded as being of 'low/neutral' significance in the CMP. Any associated visual changes in the vicinity of the heritage item are not considered to be major in nature. The acoustic sheds, which would exceed the height of existing development on the construction site, would result in additional visual impact to the setting of the State Abattoirs although this would be temporary in nature. Nearby modern development adjacent to the construction site exceeds the height of the proposed acoustic shed.

¹⁷⁵ Graham Brooks and Associates Pty Ltd, 2003. 'Abattoir Heritage Precinct, Sydney Olympic Park: Conservation Management Plan'

Policy	Assessment of impacts against recommendations
	<i>Any proposed new large-scale development in the vicinity should not overshadow the open spaces in the Abattoir Heritage Precinct.</i>
8	<p>The acoustic sheds, which would be around 15 metres in height, would exceed the height of the existing development within the construction site. The acoustic shed located directly opposite the State Abattoirs on the southern side of Herb Elliot Avenue would potentially visually dominate the State Abattoirs, although this indirect impact would be temporary in nature. The nearby modern development adjacent to the construction site exceeds the height of the acoustic shed. There would be additional development within the heritage curtilage of the State Abattoirs which would change the nature and quality of open spaces within the heritage precinct during construction, until the vegetation is re-established.</p>
	<i>Significant building and landscape fabric, both internally and externally should be retained and conserved, in accordance with the levels of significance identified in Part 7 Summary of Elements</i>
11	<p>Stage 1 has been developed to retain the former gatehouse structure, which is identified as an element of Exceptional significance in the CMP. The Stage 1 and associated construction activities would result in removal of significant landscaping elements adjacent to the gatehouse and former carriage loop. This includes removal of mature plantings including the palm grove, garden beds, kerbing and other landscaping elements and furniture. These elements are identified in the CMP as being of 'high/medium' significance, and their removal is considered to represent a permanent adverse heritage impact. This impact could be mitigated and reduced with reinstatement of appropriate similar species and plantings in keeping with the provisions of the CMP.</p>
	<i>Where landscape elements require replacement due to growth or senescence, replant with species to match existing, in the existing layout, or one determined by further research.</i>
16	<p>This recommendation would be considered as part of detailed design in accordance with the design principles and heritage strategy. The removal of significant landscaping fabric and plantings could be offset and overall impact reduced by adherence to this policy.</p>
	<i>Make decisions requiring change to the Abattoir Heritage Precinct with a clear understanding of the implications on its heritage values and seek to minimise negative heritage impacts.</i>
17	<p>Decisions regarding the potential impacts to the Abattoir Heritage Precinct have considered the heritage values of different elements and heritage values and with the aim of minimising heritage impacts. This has included the avoidance of direct impacts and retention of the former gatehouse structure. This would maintain the overall integrity and heritage value of the historic precinct. Removal of trees and landscaping would be a negative heritage impact.</p>
	<i>Undertake formal archival recording of the Abattoir Heritage Precinct prior to undertaking works, including conservation works, to significant elements. Keep ongoing records of changes.</i>
19	<p>Archival recording would be undertaken in accordance with the mitigation measures identified in this assessment (refer to Section 9)</p>

6.6.5 Potential unlisted heritage items

This assessment has not identified any potential unlisted heritage items within this Stage 1 construction site.

6.6.6 Overview of heritage impacts

The following table provides an overview of the Stage 1 heritage impacts associated with Sydney Olympic Park metro station construction site.

Table 40: Heritage impacts for Sydney Olympic Park metro station construction site

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
State Abattoirs	State Environmental Planning Policy 2005 Listing No. A	State	Moderate	Minor	Moderate

6.7 North Strathfield metro station construction site

6.7.1 Summary of heritage listed items

Table 41 provides a summary of the listed heritage items located within the study area surrounding North Strathfield metro station construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 172.

Table 41: Heritage items within North Strathfield metro station construction site study area

Heritage item	Register listings	Address	Significance	Relationship to the construction site
Street Trees (adjacent to North Strathfield Railway Station)	Canada Bay LEP Item No. I397	Queen Street, North Strathfield, NSW 2137	Local	Partially within buffer zone; 5 metres southeast of the southern construction site
North Strathfield Railway Station Group	Railcorp's 170 4801029	Queen Street, North Strathfield, NSW 2137	Local	Partially within the northern construction site



North Strathfield Metro Station
Heritage Items
18260 Metro West
LGA: City of Canada Bay

SCALE 1:2,000

SIZE A4

DATE 5/12/2019

0 50 100 m



Figure 172: North Strathfield metro station construction site heritage items map

6.7.2 Existing environment

The North Strathfield metro station construction site is alongside the existing North Strathfield Station to the west that is serviced by the Main North Line. The existing environment comprises an open setting located between early 20th century commercial and residential development to the east and the existing rail corridor to the west. A freight line track is located west of the construction site below ground level, beneath the existing track surface. North Strathfield Station is partly surrounded by a variety of trees and landscaping along the western side of Queen Street, including the heritage listed Street Trees and garden features associated with the eastern entry to the station. The eastern side of Queen Street is generally composed of low density single-story residential dwellings and two storey commercial buildings.

The approved North Strathfield Station Transport Access Program upgrade involves works changed the entry to the station off Queen Street within the North Strathfield metro station construction site. This included the introduction of lift shafts and modifications to the existing overbridge and nearby garden beds.



Figure 173: View west towards northern rail yard, including parking area and embankment



Figure 174: View north showing asphalted surface within rail yard at North Strathfield Station



Figure 175: View of freight line underpass within existing rail corridor at North Strathfield Station



Figure 176: View southeast to main station platform building at North Strathfield Station



Figure 177: View of Queen Street entrance garden from top of pedestrian footbridge at North Strathfield Station



Figure 178: View southwest towards Queen Street entrance to North Strathfield Station



Figure 179: View north along Queen Street towards commercial buildings located to the east of North Strathfield Station



Figure 180: View southwest towards street trees located to the south of Queen Street entrance to North Strathfield Station



Figure 181: North Strathfield metro station construction site existing environment photograph location map

6.7.3 Significance and impact assessments for individual items

Table 42 and Table 43 provides a significance assessment of the listed heritage items within the study area surrounding the North Strathfield metro station construction site.

Table 42: Street Trees (adjacent to North Strathfield Railway Station) heritage impact assessment

Street Trees (adjacent to North Strathfield Railway Station) ¹⁷⁶

Image



Figure 182: Street Trees from Queen Street. Artefact 2019

Significance	Local
Description	The Street Trees heritage item comprises a row of mature Brush Box trees that are located along the western side of Queen Street, fronting North Strathfield Station. The Brush Box trees were planted around the 1940s.
Statement of significance	<i>The Street Trees are characteristic street planting of a row of Brush Box from c1940s forming a significant element within the streetscape.</i>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. As site clearing works are not required at the southern construction site, impact by way of disturbance to the root systems is not anticipated. Direct impact: Neutral</p> <p>Construction works for Stage 1 would occur within and adjacent to the Street Trees heritage item. The southern construction site for the North Strathfield metro station would be near the Street Trees heritage item and would involve utilisation of an existing hardstand carpark for construction site activities. The use of this site for construction, including site parking, site office and amenities, would not substantially alter the existing visual amenity of the locality and as such any associated visual impact on the setting and context of the nearby Street Trees heritage item would be negligible in nature. Indirect impact: Negligible</p>

¹⁷⁶ OEHL, 2009. 'Street Trees – Adj. To North Strathfield Railway Station'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2890363>

Table 43: North Strathfield Railway Station Group heritage impact assessment

North Strathfield Railway Station Group¹⁷⁷

Image



Figure 183: North Strathfield Station Group. Artefact 2019

Significance Local

Description

North Strathfield Station was developed from 1918 onwards. The station building is a single-storey brick structure with corrugated iron roof, featuring corrugated metal awnings on curved cast iron brackets, four-panelled doors, coloured glass, fanlights and several double-hung sash windows. The station island platforms are constructed with curving face-brick and feature a modern asphalt surface, furniture, bins, and fencing. The station footbridge, constructed c1990, is built with reinforced concrete. Contributing landscaping features within the station complex include the landscaped park/ ornamental garden fronting Queen Street, which includes pathways, garden furniture, small shrubbery and two rows of Brush Box.

Statement of significance

North Strathfield Railway Station has a local heritage significance as the establishment of the station in 1918 encouraged the rapid subdivision and development of the area, particularly to the east of the train line. The station is a highly intact, good example of the standard type railway station that was installed along the Short North line during the late nineteenth and twentieth centuries. The station building contains some significant internal early fabric including a pair of ticket windows with original timber architraves and copper coin trays which are rare as the only known examples of their type extant on the Short North line.

The fan-shaped garden and pathways fronting the Queen Street entrance, and double row of Box Brush trees also along Queen Street, date to the establishment of the station. The form and layout of the garden and tree plantings are also highly intact and area good example of station landscape in the early twentieth century. The landscape also contributes to the overall context setting of the station.

Impact type

Direct impact: Partial demolition
Indirect impact: Views and vistas

¹⁷⁷ OEH, n.d. 'North Strathfield Railway Station Group'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801029>

North Strathfield Railway Station Group¹⁷⁷

Heritage impact assessment Stage 1 would involve direct impacts within the s170 heritage curtilage of the North Strathfield Railway Station Group. This includes cut and cover excavation works, potential removal and reconfiguration of a portion of the gardens at the eastern entry to the station off Queen Street for the establishment of temporary plant and acoustic shed at the northern construction site. There would be no impacts to the pedestrian overbridge, stairs or the lift providing access to the existing North Strathfield Station. The pedestrian overbridge and stairs are identified as being components of 'Little' significance within the North Strathfield Railway Station Group.¹⁷⁸ The entry gardens and associated plantings off Queen Street are considered significant for their aesthetic and intactness qualities, in addition to being a contributory element in the overall station complex and are mentioned in the SHI listing description of the s170 item. Impact to this element would represent an adverse heritage impact. In the overall context of the North Strathfield Railway Station Group, the impacts would be relatively localised. Elements of high significance, including the station buildings and platforms, would not be directly impacted by construction of Stage 1.

Direct impact: Minor

Vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

Construction activities for Stage 1 would occur within and adjacent to the North Strathfield Railway Station Group heritage item. Removal of fabric including a portion of the gardens at the station entry off Queen Street would visually alter the presentation and aesthetic character of this part of the station. Stage 1 works would involve cut and cover excavation to a depth of about 18 metres, resulting in heritage impact to the existing visual amenity of the heritage item, although this visual impact would be minor in nature.

Indirect impact: Minor

6.7.4 Potential unlisted heritage items

This assessment has not identified any potential unlisted heritage items within this Stage 1 construction site.

6.7.5 Overview of heritage impacts

The following table provides an overview of the Stage 1 heritage impacts associated with North Strathfield metro station construction site.

Table 44: Heritage impacts for North Strathfield metro station construction site

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
Street Trees (adjacent to North Strathfield Railway Station)	Canada Bay LEP Item No. I397	Local	Neutral	N/A	Negligible
North Strathfield Railway Station Group	Railcorp's170 4801029	Local	Minor	Neutral	Minor

¹⁷⁸ Artefact Heritage 2018. 'TAP 2.5 North Strathfield Railway Station Statement of Heritage Impact'

6.8 Burwood North Station construction site

6.8.1 Summary of heritage listed items

Table 45 provides a summary of the listed heritage items located within the study area surrounding Burwood North Station construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 184.

Table 45: Heritage items within Burwood North Station construction site study area

Heritage item	Register listings	Address	Significance	Relationship to the construction site
St Luke's Park gateway / entrance – gates and trees only	Canada Bay LEP Item No. I308	Loftus Street, Concord, NSW 2137	Local	Partially within buffer zone; 20 metres east of the northern construction site
St Luke's Anglican Church and grounds	Canada Bay LEP Item No. I40	19 Burton Street, Concord, NSW 2137	Local	Partially within buffer zone; 20 metres north of the northern construction site
Bath Arms Hotel	Burwood LEP Item No. I94	352-354 Parramatta Road, Burwood, NSW 2134	Local	Partially within buffer zone; 20 metres west of the southern construction site



Burwood North Station
Heritage Items
18260 Metro West
LGA: City of Canada Bay and Burwood

SCALE 1:2,000
SIZE A4
DATE 5/12/2019

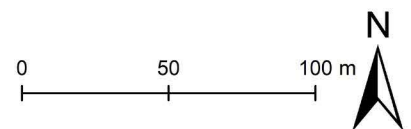


Figure 184: Burwood North Station construction site heritage items map

6.8.2 Existing environment

The existing environment around the proposed Burwood North Station construction site differs between the northern and southern sites, on either side of Parramatta Road.

Northern site

The urban context surrounding the northern construction site comprises a combination of low to medium density early to mid-20th century commercial development alongside Parramatta Road and Burwood Road; low density mid to late-20th century suburban residential development along Burton Street to the north; and low density mid to late-20th century residential and commercial development along Loftus Street. Existing development within the Burwood North Station northern construction site is generally between one to two-storeys in height. The northern construction site is in the vicinity of the historic and heritage listed St Luke's Anglican Church; and St Luke's Park, also known as Concord Oval.

Southern site

The southern construction site comprises a corner block bounded by Parramatta Road, Burwood Road and Esher Lane, with low density early to mid-twentieth century commercial development that is one and two-storeys in height. The southern construction site is in the vicinity of the historic and heritage listed Bath Arms Hotel.



Figure 185: View east across Loftus Street near Parramatta Road showing southwest corner of Concord Oval



Figure 186: View southeast from Burton Street and Burwood Road showing intersection



Figure 187: View west along northern footpath on Parramatta Road within study area of Burwood North Station construction site, showing St Luke's Park and existing development in distance

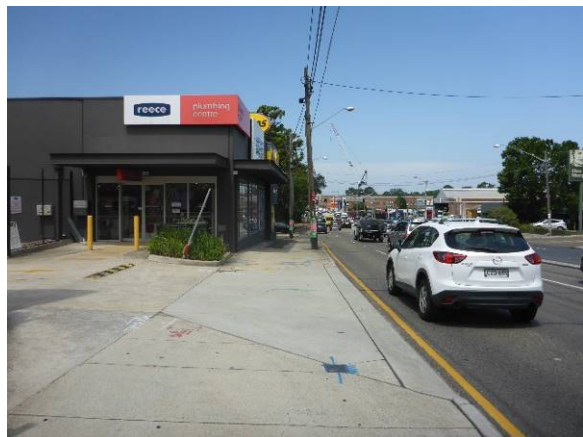


Figure 188: View east along northern footpath on Parramatta Road within study area of Burwood North Station construction site showing existing development



Figure 189: View north along Neichs Lane showing existing commercial development within the Burwood North Station northern construction site



Figure 190: View northeast across Parramatta Road towards existing development within the Burwood North Station northern construction site



Figure 191: View northeast across intersection of Burwood Road and Parramatta Road towards existing development within the Burwood North Station northern construction site



Figure 192: View south along Burwood Road towards Burwood North Station southern construction site, showing surrounding streetscape



Figure 193: View southwest across Loftus Street at the intersection with Burton Street showing wider suburban context of Burwood North Station northern construction site



Figure 194: View southeast across intersection of Burwood Road and Parramatta Road towards existing commercial development within Burwood North Station southern construction site

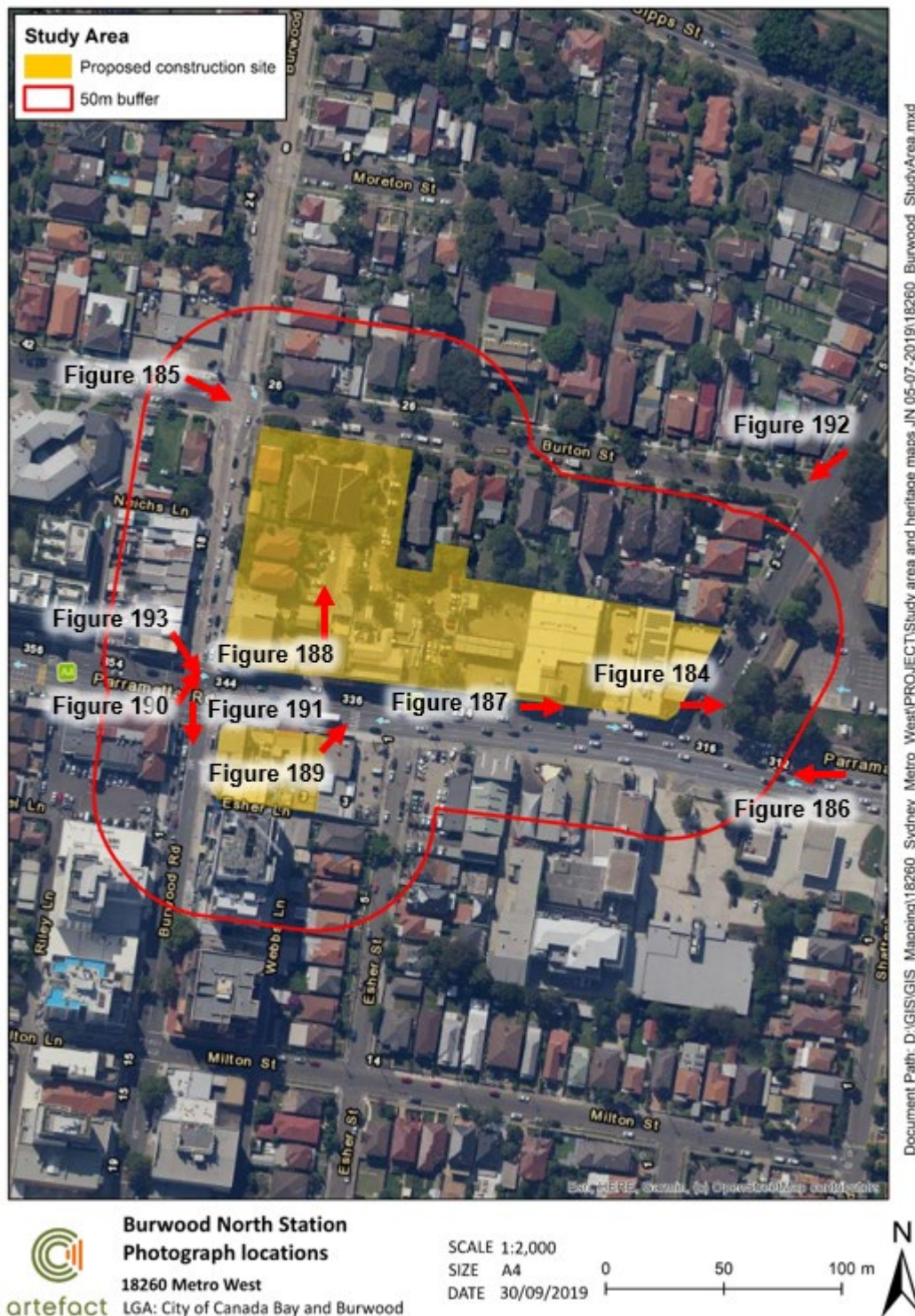


Figure 195: Burwood North Station construction site existing environment photograph location map

6.8.3 Significance and impact assessments for individual items

Table 46 to Table 48 provides a significance assessment of the listed heritage items within the study area surrounding the Burwood North Station construction site.

Table 46: St Luke's Park gateway / entrance – gates and trees only heritage impact assessment

St Luke's Park gateway / entrance – gates and trees only¹⁷⁹

Image



Figure 196: St Luke's Park Gateway from Parramatta Road. Artefact 2019

Significance	Local
Description	The St Luke's Park entrance gates were first erected in 1913, being reconstructed in 1932 using rendered masonry and inscribed with 'concord Oval by B.S.B Stevens-Premier of NSW'. The gates are flanked by five mature fig trees in an historic row planation. The species include Morton Bay Fig (c1890s to 1900s) and Brush Box trees (c1930s). In addition, a row of Broadleaf Paperbarks are located along the northern boundary and two mature Camphor Laurels are located along the Parramatta Road verge.
Statement of significance	<i>St Luke's Park Entrance and row of five mature fig trees from 1890-1920 period form a notable element within the streetscape. The entry gates are an important memorial to former Major of Concord, Daniel Zoeller. In addition, the site is known for the Longbottom Stockade and potential Aboriginal archaeological heritage.</i>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>While no visual changes would occur within the item's heritage curtilage, Stage 1 would result in demolition of existing development, construction activities and establishment of an acoustic shed approximately 150 metres west of St Luke's Park gateway and entrance, directly adjacent to Burwood Road. This would potentially detract from the landmark qualities of the plantings within and adjacent to the entrance of the park. Construction activities and the establishment of an acoustic shed at the Burwood North Station northern construction site would be temporary in nature. Views towards the heritage item would not be affected by Stage 1. Indirect impact: Negligible</p>

¹⁷⁹ OEH, 2013. 'St Luke's Park Entrance'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2890351>

Table 47: St Luke's Anglican Church and grounds heritage impact assessment

St Luke's Anglican Church and grounds ¹⁸⁰

Image



Figure 197: St Luke's Anglican Church from Burton Street. Artefact 2019

Significance Local

Description

The St Luke's Anglican Church was constructed in the Gothic style between 1859 and 1861. Constructed of rendered brickwork, the church comprises a steep pitched slate roof. Other features of the church include lancet windows with gables and decorative finials, decorative stone quoins, stone window sills, a belfry above the western wall apex and two entryways. The church grounds include a former rectory, lawn areas, garden beds, several large trees and a face brickwork wall.

Statement of significance

St Luke's Anglican church is the oldest surviving church in the Concord Municipality. The church is a key element in the establishment of the village of Longbottom near the Parramatta Road. St Luke's Church is a fine example of the Victorian Gothic Style, rare in Concord. The Church is an important example of the work of the prominent Victorian architect Edmund Blackett. The Church has major social and historical significance as the focus of Anglican worship since 1861 and along association with the Walker family. The Church grounds conserve the historic entrance and mature trees (including the large Oak tree) and provide an appropriate setting for the Church. St Luke's Church and grounds (include Oak tree) are notable and attractive features in the streetscape and form part of a small group of buildings that together illustrate the Village of Longbottom.

Impact type No impact

¹⁸⁰ OEH, 2017. 'St Luke's Anglican Church and grounds'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2890027>

St Luke's Anglican Church and grounds ¹⁸⁰

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

While no visual changes would occur within the item's heritage curtilage, the Stage 1 would result in demolition of existing development, construction activities and establishment of an acoustic shed directly south west of St Luke's Anglican Church and grounds. This would detract from the setting and existing residential context of the heritage item. Sightlines towards the Burwood North Station northern construction site from the church would be largely obstructed by the retained residential development on the southern side of Burton Street. This would reduce associated visual impact. Construction activities and the establishment of an acoustic shed would be temporary in nature. Views towards the heritage item would not be affected by Stage 1.

Indirect impact: Negligible

Table 48: Bath Arms Hotel heritage impact assessment

Bath Arms Hotel ¹⁸¹

Image



Figure 198: Bath Arms Hotel from Parramatta Road. Artefact 2019

Significance Local

Description

The original Bath Arms Inn was established at the Parramatta Road site in 1834. The current Bath Arms Hotel structure that remains extant was built around 1920. The Bath Arms Hotel occupies a prominent corner position at the intersection of Burwood Road and Parramatta Road, and is a two-storey brick building featuring decorative mouldings, parapet and a tile ground floor façade.

Statement of significance

The site of the Bath Arms Inn is of local significance as a historic site, on a prominent corner that represents development from the early nineteenth century.

¹⁸¹ OEH, 2001. 'Site of the Bath Arms Inn'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=1250049>

Bath Arms Hotel ¹⁸¹

Impact type Indirect impact: Views and vistas

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

Stage 1 would result in demolition of existing development, construction activities and establishment of acoustic sheds across two sites that are adjacent to the Bath Arms Hotel. This would change views looking out from the pub, and would potentially detract from the landmark qualities of the historic pub, which occupies a prominent corner position in the surrounding streetscape. Construction activities and the establishment of acoustic sheds at the Burwood North Station construction site would be temporary in nature. Views towards the heritage item would not be affected by Stage 1.

Indirect impact: Minor

6.8.4 Potential unlisted heritage items

This section provides a preliminary assessment of significance and impact assessment for potential unlisted heritage items that are located within the Burwood North Station construction site.

6.8.4.1 19 Parramatta Road, Concord (Pine Inn)

The Pine Inn, located at 19 Parramatta Road is within the Burwood North Station northern construction site. The building is a mid 20th century Inter-War Art Deco style hotel building, constructed on the site of the former Oriental Hotel. The hotel is a two-storey building of painted brick construction with decorative mouldings and linear features. The building's current use is as a commercial pub.



Figure 199: View across Parramatta Road to Pine Inn¹⁸²

¹⁸² Google Maps 2019



Figure 200: View along Parramatta Road in 1939 showing Pine Inn (former Oriental Hotel) ¹⁸³



Figure 201: View of Pine Inn (former Oriental Hotel) in 1930¹⁸⁴

Assessment of significance

The following table provides an assessment of significance for the mid 20th century Inter-War Deco style Pine Inn hotel building located at 19 Parramatta Road, Concord.

¹⁸³ Australian National University. Accessed online at: <http://hdl.handle.net/1885/102390>

¹⁸⁴ Australian National University. Accessed online at: <http://hdl.handle.net/1885/102390>

Table 49: Significance assessment for the building at 19 Parramatta Road (Pine Inn)

Criterion	Explanation
A – Historical Significance	<p>Established in 1917 as the Oriental Hotel and reconstructed during the 1930s, the hotel building at 19 Parramatta Road demonstrates the consolidated commercial and development activities along Parramatta Road during the time of its construction. The Oriental Hotel was renamed Pine Inn during the 1980s. It is noted there are other historic hotels in the vicinity which provide a more robust demonstration of the commercial development along this arterial road during the 19th century.</p> <p>The item may meet the local significance threshold under this criterion.</p>
B – Associative Significance	<p>The Pine Inn building at 19 Parramatta Road does not appear to have any direct connections with prominent members of the local community or any ongoing historic associations.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
C – Aesthetic or Technical Significance	<p>The Pine Inn is an Inter-War Art Deco style building, and exhibits several features that are typical of its type. The building retains its bold rendered brick façade with restrained decorative mouldings and linear features, which reinforce the horizontality of the building. The building has been relatively altered, with modifications to the ground floor openings, replacement of original windows and removal of the original awning. The interior of the building was not accessed. These modifications have diminished the contribution of the hotel to its surrounding streetscape setting.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
D – Social Significance	<p>Whilst the Pine Inn building at 19 Parramatta Road has some associations with the commercial development along Parramatta Road during the 20th century, and likely has some associations with members of the local community and staff, it does not appear to retain any substantial social significance from a heritage standpoint.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
E – Research Potential	<p>Although the building at 19 Parramatta Road, as the site of the former Oriental Hotel, 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>
F – Rarity	<p>There are several historic hotel buildings in the nearby streetscape around the Pine Inn. This includes the adjacent heritage listed Bath Arms Hotel at the intersection of Burwood Road and Parramatta Road. The Bath Arms Hotel has stronger historical associations and values, and is a more intact example of an Inter-War hotel type, and provides a strong contribution to the surrounding area. As such, the Pine Inn 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	Explanation
G – Representativeness	<p>The Pine Inn building has been substantially modified externally (interiors were not accessed) and such the building is not considered a representative example of its type.</p> <p>The item does not meet the local significance threshold under this criterion.</p>

Summary of significance

The Pine Inn, located at 19 Parramatta Road, is an Inter-War hotel building that is demonstrative of the development that occurred along the Parramatta Road during the mid-20th century. The building, which was formerly known as the Oriental Hotel, does not appear to retain any historic associations. The building contributes to the character of the surrounding streetscape of the area, although there are other Inter-War buildings in the vicinity that are finer examples of their type, including the locally listed Bath Arms Hotel. While the Pine Inn building retains several elements that are typical of its style including a rendered brick façade with decorative linear features, the building has been substantially modified. Based on its historical significance, the Pine Inn could reach the threshold of local heritage significance.

Heritage impact assessment

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. The overall impact on this potential unlisted heritage item would be **major**.

6.8.4.2 338-340 Parramatta Road, Burwood

The building at 338-340 Parramatta Road is within the Burwood North Station southern construction site. The two-storey building is a late 19th century Victorian era building of painted brick construction with projecting parapet, tiled gabled roof and original windows with moulded sills. The current use of the building is commercial.



Figure 202: View to building at 338-340 Parramatta Road, Burwood¹⁸⁵

Assessment of significance

The following table provides an assessment of significance for the late 19th century commercial building located at 338-340 Parramatta Road, Burwood.

Table 50: Significance assessment for the building at 338-340 Parramatta Road, Burwood

Criterion	Explanation
A – Historical Significance	<p>The building at 338-340 Parramatta Road is demonstrative of the commercial role of Parramatta Road, and growth commercial development and subdivisions along its alignment during the later decades of the 19th century. The building is believed to have been built around c1880s, and may possibly be the ‘Camden House’ that appears in historical records in 1884. In subsequent years the building appears to have been used as a shop. The building does not appear to retain any historic connections with companies or uses.</p> <p>The item does not meet the local significance threshold under this criterion.</p>
B – Associative Significance	<p>The building at 338-340 Parramatta Road 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.</p> <p>The item does not meet the local significance threshold under this criterion.</p>

¹⁸⁵ Google Maps 2019

Criterion	Explanation
C – Aesthetic or Technical Significance	<p>The building at 338-340 Parramatta Road is designed as a modest Victorian era commercial building, potentially an inn 'Camden house'. The building's main façade retains elements that are typical of Victorian era commercial architecture, including face brickwork, original multipaned timber framed windows and moulded sills. The building features an extended gable roof eave that is supported by brackets, and is framed with projecting parapets. While relatively intact, the ground floor of the building has been altered and an intrusive awning added. The interior of the building was not accessed. The building provides a historic contribution to the surrounding streetscape. It is noted that 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.</p> <p>The item potentially meets the local significance threshold under this criterion.</p>
D – Social Significance	<p>Whilst the building at 338-340 Parramatta Road has some associations with the commercial development of Burwood Road and along Parramatta Road 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>
E – Research Potential	<p>Although the building at 338-340 Parramatta Road 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>
F – Rarity	<p>The building at 338-340 Parramatta Road remains as one of several late 19th century commercial buildings in the area. While there are other buildings of a similar building stock in the vicinity, it is noted these are less intact than the building at 338-340 Parramatta Road and have been subject to additional alterations. This increases the rarity of the building at 338-340 Parramatta Road, 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>
G – Representativeness	<p>The building at 338-340 Parramatta Road is considered a somewhat representative example of its type. The building retains the principal features of its façade above ground level, including face brickwork, projecting parapets, projecting eaves with supporting brackets, and multi-paned timber framed windows with decorate moulded sills. These design features are typical of the Victorian era buildings that were constructed at the time.</p> <p>The item potentially meets the local significance threshold under this criterion.</p>

Summary of significance

The building at 338-340 Parramatta Road is a two-storey Victorian era building that is demonstrative of the commercial role of Parramatta Road and the development of Burwood during the late 19th century following subdivision of the original 750-acre Rowley grant. Constructed of painted brickwork with projecting parapets framing a projecting gabled roof eave, the building provides a modest contribution to the surrounding historic streetscape setting. An inspection of the building's interior

would be required to confirm its aesthetic significance and degree of intactness and integrity. The building at 338-340 Parramatta Road could reach the threshold of local heritage significance.

Heritage impact assessment

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. The overall impact on this potential unlisted heritage item would be **major**.

6.8.5 Overview of heritage impacts

6.8.5.1 Listed heritage items

The following table provides an overview of the Stage 1 impacts on listed heritage items, associated with Burwood North Station construction site.

Table 51: Heritage impacts for Burwood North Station construction site

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
St Luke's Park gateway / entrance – gates and trees only	Canada Bay LEP Item No. I308	Local	Neutral	Neutral	Negligible
St Luke's Anglican Church and grounds	Canada Bay LEP Item No. I40	Local	Neutral	Neutral	Negligible
Bath Arms Hotel	Burwood LEP Item No. I94	Local	Neutral	Neutral	Minor

6.8.5.2 Potential unlisted heritage items

The following table provides an overview of the Stage 1 impacts on potential unlisted heritage items, associated with the Burwood North Station construction site.

Table 52: Heritage impacts for Burwood North Station construction site on potential unlisted items

Heritage item	Significance	Direct impact	Potential direct impact	Indirect impact
Pine Inn (19 Parramatta Road, Concord)	Local	Major	N/A	N/A
338-340 Parramatta Road, Burwood	Local	Major	N/A	N/A

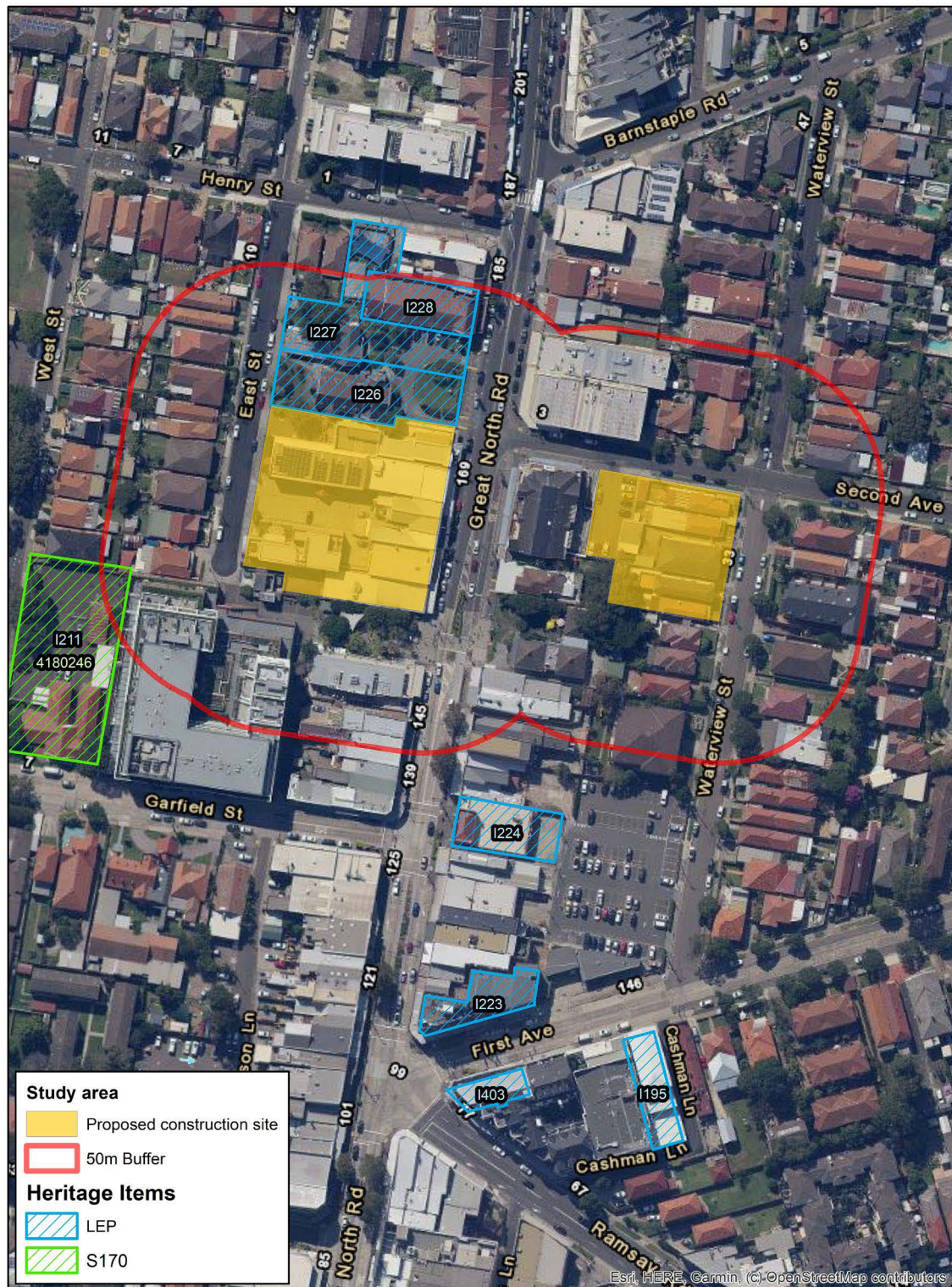
6.9 Five Dock Station construction site

6.9.1 Summary of heritage listed items

Table 53 provides a summary of the listed heritage items located within the study area surrounding Five Dock Station construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 203.

Table 53: Heritage items within Five Dock Station construction site study area

Heritage item	Register listings	Address	Significance	Relationship to the construction site
St Alban's Anglican Church Hall and Shops	Canada Bay LEP Item No. I228	177-179 Great North Road, Five Dock, NSW 2046	Local	Partially within buffer zone; 30 metres north of the western construction site
St Alban's Anglican Church Rectory	Canada Bay LEP Item No. I227	175 Great North Road, Five Dock, NSW 2046	Local	Within buffer zone; 20 metres north of the western construction site
St Alban's Anglican Church	Canada Bay LEP Item No. I226	171-173 Great North Road, Five Dock, NSW 2046	Local	Within buffer zone; directly north of the western construction site
Police Station	Canada Bay LEP Item No. I211 NSW Police Services s170 4180246	14 Garfield Street, Five Dock, NSW 2046	Local	Partially within buffer zone; 40 metres southwest of the western construction site



Five Dock Station
Heritage Items
18260 Metro West
LGA: City of Canada Bay

SCALE 1:1,800
SIZE A4
DATE 5/12/2019

0 30 60 m



Figure 203: Five Dock Station construction site heritage items map

6.9.2 Existing environment

The existing environment around the proposed Five Dock Station construction site differs between the western and eastern sites, on either side of the Great North Road.

Western construction site

The existing environment within the Five Dock Station western construction site mainly comprises mid to late twentieth century low to medium density commercial development along the Great North Road, within the town centre of the suburb. This includes a variety of Inter-War or otherwise modern commercial buildings. The streetscape surrounding the western construction site comprises one to three-storey commercial buildings, with Fred Kelly Place located to the south and the historic and heritage listed St Alban's church precinct to the north of the western construction site.

Eastern construction site

The Five Dock Station eastern construction site, at the corner of Second Avenue and Waterview Street, comprises the Second Avenue Car Park, with low density residential buildings, including low-rise Federation style cottages and two-storey apartment blocks to the east facing Waterview Street.



Figure 204: View northwest within Fred Kelly Place, adjacent to the Five Dock Station western construction site



Figure 205: View northwest across Great North Road towards existing commercial development within the Five Dock Station western construction site



Figure 206: View west across Great North Road towards existing commercial development within the Five Dock Station western construction site



Figure 207: View north along eastern footpath of Great North Road showing existing streetscape within the Five Dock Station construction site study area, adjacent to western construction site



Figure 208: View southwest across Great North Road towards existing commercial development within the Five Dock Station western construction site



Figure 209: View east across East Street towards existing commercial development within the Five Dock Station western construction site



Figure 210: View north along Waterview Street towards the Five Dock Station eastern construction site



Figure 211: View south across existing carpark within the Five Dock Station eastern construction site



Figure 212: Five Dock Station construction site existing environment photograph location map

6.9.3 Significance and impact assessments for individual items

Table 54 to Table 57 provides a significance assessment of the listed heritage items within the study area surrounding the Five Dock Station construction site.

Table 54: St Alban's Anglican Church Hall and Shops heritage impact assessment

St Alban's Anglican Church Hall and Shops ¹⁸⁶

Image



Figure 213: St Alban's Anglican Church Hall and Shops from within church yard. Artefact 2019

Significance	Local
Description	The St Alban's Anglican Church Hall was constructed in 1933. The Inter-War building fronts the Great North Road, and is flanked by shops and a central entrance. Built to match the architectural style of the Church, the two-storey structure comprises a large hall, two shops, an entry foyer and a mezzanine.
Statement of significance	<i>St Alban's Anglican Church Hall is an excellent part of the Church group and an interesting addition to the streetscape with its well-proportioned form, intact original awning and symmetrical design. It retains early shopfronts and detailing. A very unusual example of a Church Hall combined with commercial premises.</i>
Impact type	Indirect impact: Views and vistas
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Stage 1 would result in demolition of development within the block bound by the Great North Road, East Street, Fred Kelly Place and St Alban's Anglican Church. This includes buildings to the south of the St Alban's Anglican Church Hall and Shops heritage item, which would change the wider context of the church precinct. There are direct sightlines between the church hall and western construction site. The existing adjacent buildings within the western construction site are not considered to represent a significant visual element in the surrounding setting of the heritage item. Establishment of an acoustic shed on the Five Dock Station western construction site that is around 15 metres in height would be located adjacent to the heritage item and would result in additional visual impact, although this would be temporary in nature. Indirect impact: Minor</p>

¹⁸⁶ OEH, 2008. 'St Alban's Anglican Church Hall and Shops'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2891062>

Table 55: St Alban's Anglican Church Rectory heritage impact assessment

St Alban's Anglican Church Rectory ¹⁸⁷

Image



Figure 214: St Alban's Anglican Church Rectory from within Church yard. Artefact 2019

Significance	Local
Description	The historic Rectory located adjacent to St Alban's Anglican Church was constructed in 1885 in the Victorian Gothic style. The Rectory is a distinctive two-storey brick building with gabled slate roof, and features outstanding decorative stonework around its windows.
Statement of significance	<i>St Alban's Anglican Church Rectory is a very unusual and rare building with stylistic influences from a range of sources. The Rectory bears no stylistic relationship to the other buildings on the site, has a unique decoration and is a rare building in the area.</i>
Impact type	Indirect impact: Views and vistas
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The heritage item is not located immediately adjacent to the construction site and vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct: Neutral</p> <p>Buildings within the Five Dock Station western construction site would be demolished as part of Stage 1. This includes buildings to the south of the St Alban's Anglican Church Rectory, which would change the wider context of the church precinct. There are limited sightlines between the two-storey Rectory and the western construction site, which is relatively obstructed by the adjacent St Alban's Anglican Church. The existing buildings within the western construction site are not considered to represent a significant visual element in the surrounding setting of the heritage item. Establishment of an acoustic shed on the western construction site that is around 15 metres in height would be located adjacent to the heritage item and would result in additional visual impact to the setting of the item, although this would be temporary in nature. Indirect impact: Minor</p>

¹⁸⁷ OEH, 2009. 'St Alban's Anglican Church Rectory'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2891061>

Table 56: St Alban's Anglican Church heritage impact assessment

St Alban's Anglican Church¹⁸⁸

Image



Figure 215: St Alban's Anglican Church from within Church yard. Artefact 2019

Significance	Local
Description	St Alban's Anglican Church was constructed in 1923 in the ecclesiastical Gothic style. The church is set back from the Great North Road to incorporate an attractive lawn and rose garden, which considerably enhance the setting of the church precinct. The church was built using brick in a cruciform plan, with a complex slate roof including parapet gables. Additional features include stone and dark brick bands used for decoration, and stained-glass windows throughout.
Statement of significance	<i>St Alban's Anglican Church is the site of Five Dock's first church, one of the area's first substantial buildings. The present church is an impressive 1920s example of ecclesiastical Gothic style, little altered. Set in attractive grounds, reminiscent of English village churches, and located in the middle of the Five Dock commercial centre. The structure is complemented by the adjoining rectory.</i>
Impact type	Potential direct: Vibration Indirect impact: Views and vistas

¹⁸⁸ OEH, 2009. 'St Alban's Anglican Church'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2891060>

St Alban's Anglican Church¹⁸⁸

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.

Direct impact: Neutral

The heritage item is located adjacent to the construction site and is predicted to experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.

Potential direct: Minor

Buildings within the Five Dock Station western construction site would be demolished as part of Stage 1. This includes buildings immediately to the south of St Alban's Anglican Church, which would change the immediate setting of the church and surrounding precinct. There are direct sightlines between the church and adjoining western construction site. The existing buildings within the western construction site are not considered to represent a significant visual element in the surrounding setting of the church. Establishment of an acoustic shed on the western construction site that is around 15 metres in height would be located adjacent to the heritage item and would result in additional visual impact to the setting of the item, although this would be temporary in nature.

Indirect impact: Moderate

Table 57: Police Station heritage impact assessment

Police Station¹⁸⁹

Image



Figure 216: Police Station from Garfield Street. Artefact 2019

Significance Local

Description

The Five Dock Police Station was constructed around 1920 as a single-storey building designed in the Inter-War Arts and Crafts style. The building is of face brick construction with rough cast render. The building comprises a terracotta tiled roof with projecting central gable roofed wing and pilasters.

¹⁸⁹ OEHL, 2006. 'Five Dock Police Station'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4180246>

Police Station ¹⁸⁹

Statement of significance *The Five Dock Police Station is an attractive Interwar Arts and Crafts Police Station which has a high degree of aesthetic significance for its former character, materials, detailing and contribution to the streetscape. The Police Station contains many typical decorative features of the Arts and Crafts movement including the use of face bricks and rough cast render dominated by the gable roof massing. The building is historically and socially important for its continuous association with the provision of police services in the local area.*

Impact type No impact

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

As the Five Dock Police Station building is located over 50 metres from the construction site, there would be no potential direct impact from vibration.
Potential direct: Neutral

The Five Dock Police Station building is located over 50 metres to the southwest of the Five Dock Station western construction site. Views towards the construction site from the police station building itself within the heritage item are obstructed by existing largescale development in the vicinity, including the adjacent five-storey mixed commercial and residential apartment building on the northern side of Garfield Street. As such, there would be no visual impact.
Indirect impact: Neutral

6.9.4 Potential unlisted heritage items

This assessment has not identified any potential unlisted heritage items within this Stage 1 construction site.

6.9.5 Overview of heritage impacts

The following table provides an overview of the Stage 1 heritage impacts associated with Five Dock Station construction site.

Table 58: Heritage impacts for Five Dock Station construction site

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
St Alban's Anglican Church Hall and Shops	Canada Bay LEP Item No. I228	Local	Neutral	Neutral	Minor
St Alban's Anglican Church Rectory	Canada Bay LEP Item No. I227	Local	Neutral	Neutral	Minor
St Alban's Anglican Church	Canada Bay LEP Item No. I226	Local	Neutral	Minor	Moderate
Police Station	Canada Bay LEP Item No. I211 NSW Police Services 170 4180246	Local	Neutral	Neutral	Neutral

6.10 The Bays Station construction site

6.10.1 Summary of heritage listed items

Table 59 provides a summary of the listed heritage items located within the study area surrounding The Bays Station construction site. The heritage curtilages of these listed heritage items are illustrated on the following Figure 217.

Table 59: Heritage items within The Bays Station construction site study area

Heritage item	Register listings	Address	Significance	Relationship to construction site
White Bay Power Station	SHR Listing No. 01015 Urban Growth NSW Development Corporation's170 4500460 SREP No. 26 – City West Part 3 No. 11	Victoria Road, Rozelle, NSW 2039	State	Partially within construction site
The Valley Heritage Conservation Area	Leichhardt LEP Item No. C7	Balmain, NSW 2041	Local	Partially within buffer zone; 10 metres north of construction site
White Bay Power Station (outlet) Canal	Port Authority of NSW s170 4560026	Victoria Road, Leichhardt, NSW 2136	Local	Partially within buffer zone; 10 metres west of construction site
White Bay Power Station (inlet) canal	Port Authority of NSW s170 4560062	Glebe Island, NSW 2040	Local	Partially within construction site
Beattie Street Stormwater Channel No. 15	Sydney Water's170 4570329	Robert Street to Beattie Street, Rozelle / Balmain, NSW	Local	Partially within construction site
Glebe Island Silos	Port Authority of NSW s170 4560016 SREP No. 26 – City West Part 3 No. 1	Victoria Road, Glebe Island, NSW 2040	Local	Partially within buffer zone; 10 metres east of construction site



**The Bays Station
Heritage Items**
18260 Metro west
LGA: Leichhardt

Scale: 1:3950
Size: A4
Date: 31-03-2020



Figure 217: The Bays Station construction site heritage items map

6.10.2 Existing environment

The existing environment surrounding The Bays Station construction site comprises a combination of industrial and maritime development within a harbourside setting near the historic suburbs of Balmain and Rozelle beyond. The site is generally bound by Robert Street and nearby warehouse development to the north, Johnston Bay to the northeast, the Glebe Island Silos to the east, the Anzac Bridge to the southeast, A4 Western Distributor Freeway to the south, Victoria Road to the southwest, and the landmark White Bay Power Station to the west. The construction site itself is situated between the White Bay Power Station and Glebe Island Silos, both of which are listed heritage items. Much of the land within the construction site of The Bays Station comprises reclaimed foreshore.



Figure 218: View southwest across Robert Street to The Bays Station construction site study area, White Bay Power Station seen right



Figure 219: View south showing existing landscape and development within The Bays Station construction site



Figure 220: View southeast showing existing landscape and development within The Bays Station construction site



Figure 221: View southwest along Robert Street within The Bays Station construction site study area, adjacent to construction site, White Bay Power Station seen left



Figure 222: View southeast showing existing landscape and development within The Bays Station construction site, Silos seen in distance



Figure 223: View south from Batty Street within The Valley Heritage Conservation Area towards The Bays Station construction site study area, White Bay Power Station seen right



Figure 224: View east from Batty Street within The Valley Heritage Conservation Area towards Johnstons Bay



Figure 225: View south showing existing landscape and development within The Bays Station construction site



Figure 226: The Bays construction site existing environment photograph location map

6.10.3 Significance and impact assessments for individual items

Table 60 to Table 65 provides a significance assessment of the listed heritage items within the study area surrounding The Bays Station construction site.

Table 60: White Bay Power Station heritage impact assessment

White Bay Power Station ¹⁹⁰

Image



Figure 227: White Bay Power Station from Robert Street. Artefact 2019

Significance	State
Description	<p>White Bay Power Station, developed between 1912 and 1948, is bounded by Victoria Road and Robert Street on the Balmain Peninsula. The power station comprises two steel stacks; a coal handling unit serviced by a spur rail line; a turbine hall; building incorporating administration offices; the old laboratory and a workshop; a boiler house; a switch house and substation; and an ancillary structure including coal loading wharf and coal handling system. The White Bay Power Station is a local landmark, and is visible from many vantage points in the surrounding urban and harbour setting.</p>
Statement of significance	<p><i>White Bay Power Station was the longest serving Sydney power Station and is the only one to retain a representative set of machinery and items associated with the generation of electricity in the early and mid-twentieth century. It retains within its fabric, and in the body of associated pictorial, written archives and reports and oral history recordings, evidence for the development of technology and work practices for the generation of electrical power from coal and water. This development of power generation at White Bay contributed to the expansion of the economy of Sydney and NSW.</i></p> <p><i>As a result of its remarkably intact survival, it retains the unique ability to demonstrate, by its location, massing, design, machinery and associated archives, the influence and dominance that early power-generating technology exerted on the lives and urban fabric of inner cities in the first half of the twentieth century. The extant items within the surviving operation systems are of an impressive scale and exhibit a high degree of creative and technical achievement in their design and configuration. They encompass all aspects of the generation of electrical power and represent all phases from the inter-war period through to the more sophisticated technologies of the mid-twentieth century. They are of exceptional technical significance with research potential to yield</i></p>

¹⁹⁰ OEH, 2004. 'White Bay Power Station'. Accessed 17 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5001335>

White Bay Power Station ¹⁹⁰

information not available from any other source.

Aesthetically, White Bay Power Station contains internal and external spaces of exceptional significance. These spaces include raw industrial spaces of a scale, quality and configuration which is becoming increasingly rare and which inspires visitors and users alike. Externally, it is a widely recognised and highly visible landmark, marking the head of White Bay and the southern entry to the Balmain Peninsula and its industrial waterfront. It retains a powerful physical presence and industrial aesthetic and is the most important surviving industrial building in the area.

White Bay Power Station has strong and special associations and meanings for the local community, for former power station workers and for others who have used the site and is of high social significance. It is a potent symbol of the area's industrial origins and working traditions, aspects of community identity that are strongly valued today by both older and new residents. It is one of the few surviving features in the area that provide this symbolic connection.

It is the only coal based industrial structure, dependent on a waterside location to survive adjacent to the harbour in the Sydney Region. It also forms part of a closely related group of large-scale industrial structures and spaces (White Bay Container Terminal, Glebe Island Silos, Container Terminal and Anzac Bridge) which along with the White Bay Hotel, define a major entry point to the city from the west.

It is of exceptional structural significance to the State of NSW.

Impact type	<p>Direct impact: Partial demolition</p> <p>Potential direct: Vibration</p> <p>Indirect impact: Views and vistas</p>
Heritage impact assessment	<p>The Bays Station construction site would involve direct impacts within the SHR curtilage of the White Bay Power Station. The construction site would encroach upon around 0.7 hectares of the SHR curtilage of the White Bay Power Station, involving cut and cover excavation along the foreshore of White Bay, near to the White Bay Power Station and the demolition of all existing structures (several small industrial buildings) within the construction site in preparation for excavation work. The total heritage curtilage of the White Bay Power Station covers an area of around 3.9 hectares, and impacts would therefore occur within around 17 per cent of the item's curtilage. No significant buildings or structures in the White Bay Power Station SHR curtilage are located within the construction site, which mainly comprises open areas of hardstand and port. This land associated with the former coal yard is not considered to be of exceptional or high significance, and does not have designated policies within the White Bay Power Station Conservation Management Plan (CMP). However, section 5.1.12 of the CMP indicates that landscaping elements including yards should be conserved and adapted. Although no heritage structures would be impacted, the 0.54 hectare encroachment upon the 3.9 hectare curtilage is considered a moderate direct impact.</p> <p>Direct impact: Moderate</p> <p>The White Bay Power Station site and associated SHR curtilage is located within the construction site. Vibration is predicted to exceed the cosmetic damage criterion at one structure within the heritage curtilage. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.</p> <p>Potential direct: Minor</p> <p>Stage 1 would result in demolition of structures, site establishment and the excavation for the station within a portion of the White Bay Power Station SHR heritage curtilage.</p>

White Bay Power Station ¹⁹⁰

This would result in visual changes within the heritage item and changes to the arrangement and configuration of the land surrounding the significant industrial structures. These external spaces have identified spatial significance for their contribution to the scale and industrial quality of the item and its built components, and excavation and redevelopment of this land would result in an adverse visual impact. The construction site covers land beyond the curtilage of the White Bay Power Station and extends to the foreshore at Johnstons Bay, which would result in further changes to the wider industrial setting and context of the former power station. The acoustic sheds within the construction site would be around 15 metres in height, although additional visual impact associated with this aspect of Stage 1 would be temporary in nature. In addition, The Bays Precinct project which includes the relocation of the existing Port Access Road to within the White Bay Power Station curtilage is considered a contributing visual impact, proposed a permanent visual change to the State heritage listed item.

Indirect impact: Moderate

Table 61: The Valley Heritage Conservation Area heritage impact assessment

The Valley Heritage Conservation Area ¹⁹¹

Image



Figure 228: View southwest along Mansfield Street within The Valley Heritage Conservation Area. Artefact 2019

Significance	Local
Description	The Valley Heritage Conservation Area comprises a large heritage conservation area covering around 110 hectares within the Balmain Peninsula. The conservation area is roughly bound by Robert Street and Batty Street to the south, Victoria Road, Wellington Street and Darling Street to the west, and Darling Street to the north. The nearby embayment to the southeast of the conservation area is filled and occupied by the White Bay Power Station. The conservation area comprises a diverse assortment of built heritage and architectural styles, and forms a distinctive area in the surrounding suburbs of Balmain and Rozelle.
Statement of	<i>The Valley 'Balmain' Distinctive Neighbourhood consists of an urbanised environment</i>

¹⁹¹ OEH, n.d. 'The Valley Heritage Conservation Area'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5063205>
Note: the 'Statement of significance' for The Valley Heritage Conservation Area is included as the 'Existing Character' statement for the distinctive neighbourhood identified in the Leichardt DCP 2000 (Section 2)

The Valley Heritage Conservation Area¹⁹¹

significance *dating from the 1850s and has layers of later architectural styles throughout the area.*

Due to incremental growth and redevelopment over the last 150 years the area exhibits the diversity and layers of development, building style, form, materials and mixed land use that is characteristic of Balmain, particularly away from the foreshores. While the built form is similar to other slopes around Balmain, particularly the southern slopes to Mort Bay, its character is very different, due to the enclosing landlocked landform, and the industrial reminders. Most of the former industrial sites have been redeveloped with town houses. Long views to the City skyline open up on the slopes above Evans Street.

The built environment consists mainly of housing with some commercial and industrial uses along Beattie Street and Mullens Street. The residential components of the neighbourhood are made up of many single storey mid-Victorian cottages with some late Victorian terraces. The main concentration of commercial activity is around the intersection of Beattie and Mullens Streets. This intersection contains most of the Heritage Items in the neighbourhood, including pubs, shops and a row of intact late Victorian shops with posted verandahs over the footpath.

Throughout the neighbourhood there are numerous former corner shops and other local commercial sites.

The road pattern in the neighbourhood is based around Darling, Mullens and Beattie Streets. All main traffic flows in the neighbourhood involve traffic leaving and entering the neighbourhood via Victoria Road. Mullens and Beattie Streets carry significant amounts of through traffic from other parts of the peninsula. Laneways are located adjacent to Mullens and Beattie Streets as well as around the steeper sites on the eastern side of the neighbourhood. Sandstone kerbing is still in place throughout the neighbourhood.

The Valley 'Balmain' Distinct Neighbourhood retains a varied and rich character reflecting its multilayered pattern of development. With the exception of Beattie and Mullens Streets, there is a predominantly single storey scale and form in the neighbourhood. The original built form was single storey workers cottages interspersed with two storey Victorian terraces (such as the development along Wortley Street, across from Punch Park). Such two storey development is generally along main thoroughfares or where views are available. Additionally, more recent housing development has seen an increase in two storey development (or additions) replacing older timber cottages.

Currently, housing in the Valley consists of a mix of federation era workers cottages and Victorian Italianate dwellings. Dwelling forms are generally free standing with rows of terraced houses interspersed throughout. Houses in this area are characterised by 1m-3m setbacks, painted masonry, corrugated iron roofing and picket fencing. Roof forms tend to be pitched or hipped, with some notable examples of parapets with skillion roofs behind. Roof forms tend to follow the slope of the land and permit access to views for higher sites. Remnant stone buildings dating from the mid-1800s are also a feature of the neighbourhood. Examples of this can be seen on Palmer Street.

Larger, more elaborate houses can be found in prominent locations throughout the neighbourhood such as in Smith Street. Towards the lower slopes, the built form is more modest. Due to the drainage pattern of the valley, larger remnant sites were located in the centre of the valley between Roseberry and Goodsir Streets. These lots had traditionally been difficult to build on due to drainage issues. Later they were developed for industrial uses and some have more recently been redeveloped for multi-unit residential uses.

The Valley Heritage Conservation Area ¹⁹¹

Street trees and trees within front yards play an important part in the streetscape, especially around Llewellyn Street and within the Palmer Street Sub Area where a distinct cluster of large native trees (over 25m) add significantly to the amenity of the area.

There is a great diversity in the architecture and detail in the neighbourhood. A certain unity of built form is achieved by incorporating consistent scale, setbacks, materials and roof forms. Where housing stock has been replaced or houses have been upgraded, the essential scale, siting, materials and form have largely been maintained.

Impact type Indirect impact: Views and vistas

Heritage impact assessment This conservation area is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

Vibration is predicted to be below the cosmetic damage screening criteria at structures within the conservation area. Potential direct impacts associated with vibration are not anticipated.

Potential direct: Neutral

Construction of Stage 1 would result in demolition of existing structures for The Bays Station construction site, located on the southern side of Robert Street opposite the southern extent of The Valley Heritage Conservation Area. This would result in visual changes in the vicinity of the conservation area, which maintains several view lines and view corridors towards The Bays. The construction site comprises predominantly vacant land that is historically associated with industrial use. The Bays Station construction site would change the wider setting of the conservation area, although views towards the conservation area from the surrounding streetscape would be maintained and the aesthetic significance of the item would not be diminished. The acoustic sheds within the construction site would be located over 140 metres to the south of the conservation area. The acoustic sheds would be around 15 metres in height and would be distantly discernible from The Valley Heritage Conservation Area, although this additional visual impact would be temporary in nature.

Indirect impact: Minor

Table 62: White Bay Power Station (Inlet) Canal heritage impact assessment

White Bay Power Station (Inlet) Canal ¹⁹²

Image



Figure 229: White Bay Power Station (Inlet) Canal – White Bay. Artefact Heritage 2019.

Significance Local

Description The inlet canal is not currently visible above ground. The only evidence above ground is a set of metal plates and two sluice gate shafts with a geared collar and square threads which once protruded about two metres above the concrete wharf platform. This assemblage would have formed the remnant floor of the screen house or sluice house that would have existed at the edge of White Bay.

Statement of significance

The White Bay Power Station is listed on the State Heritage Inventory and is of State Significance, and the White Bay Power Station (Outlet) Canal running from the Power Station to Blackwattle Bay is listed on the Sydney Ports Corporation s170 register. Together with the White Bay Power Station (Inlet) Canal they form the critical components of the White Bay Power Station and its cooling system, as the choice of site for the power station depended on the supply of water for cooling of the steam condensers.
The White Bay Power Station (Inlet) Canal has historical significance at a State level, and associational significance at a State level, as an integral element critical to the operation of the White Bay Power Station.
The existence of the canal is rare, especially in the context of the intact qualities of the surviving white Bay Power Station and the White Bay Power Station (Outlet) Canal.
Any potential aesthetic significance of the White Bay Power Station (Inlet) Canal is not known as the structure is not accessible or visible.

Impact type Direct impact: impacts associated with excavation

¹⁹² Sydney Ports Corporation, 2011. 'White Bay Power Station (Inlet) Canal'. *State Heritage Inventory Sheet*.

White Bay Power Station (Inlet) Canal ¹⁹²

Heritage impact assessment

An approximate 140-metre stretch of the s170 heritage-listed White Bay Power Station (Inlet) Canal is located directly within the study area. The inlet canal is located entirely underground, with its visible entry point into White Bay located inside the study area. Little information is available regarding the precise depth of the heritage item. Stage 1, at the location of the canal, may require some works as part of site establishment at The Bays Station construction site. Although direct impact to significant fabric is not proposed, this work has the potential to directly impact the subsurface heritage item depending on the depth of the heritage item as well as the methods and any depth of excavation (if required). The proposal is considered to have a minor direct impact on the s170 heritage listed White Bay Power Station (Inlet) Canal. Following the confirmation of the relative depth of the heritage item, in addition to further excavation detail, the direct impact on the item may be reduced to neutral or increased to moderate.

Direct impact: Minor

The White Bay Power Station (Inlet) Canal is partially located within the construction site. Vibration is predicted to be above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration monitoring (if required) would be completed in accordance with mitigation and management measures detailed in Technical Paper 2.

Potential direct impact: Minor

The White Bay Power Station (Inlet) Canal is partially located within the study area. However, the heritage item is located entirely underground and the proposed works would not impact upon the item visually. The proposal is considered to have a neutral indirect (visual) impact on the locally listed White Bay Power Station (Inlet) Canal.

Indirect impact: Neutral

Table 63: White Bay Power Station (Outlet) Canal heritage impact assessment

White Bay Power Station (Outlet) Canal ¹⁹³

Image



Figure 230: White Bay Power Station Canal – southern end. OEH n.d.

Significance Local

¹⁹³ OEH, 2004. 'White Bay Power Station (Outlet) Canal'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4560026>

White Bay Power Station (Outlet) Canal ¹⁹³

Description	White Bay Power Station (outlet) Canal runs parallel to Roberts Street beneath the White Bay Power Station and Victoria and James Craig Roads.
Statement of significance	<i>The significance of the canal is derived from the significance of the White Bay Power Station Complex. The canal is an integral part of the White Bay power Station and its cooling system. The canal now also forms part of the ecosystem of the White Bay and Blackwattle Bay areas.</i>
Impact type	No impact
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The majority of the White Bay Power Station (outlet) Canal runs at a significant distance (50 metres to 100 metres) from the construction site. Vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct impact: Neutral</p> <p>The White Bay Power Station (Outlet) Canal is located primarily below ground and has a limited visual curtilage. In addition, the item is located outside The Bays construction site. As such, visual impacts associated with Stage 1 are not expected. Indirect impact: Neutral</p>

Table 64: Beattie Street Stormwater Channel No. 15 heritage impact assessment

Beattie Street Stormwater Channel No. 15 ¹⁹⁴

Image



Figure 231: Beattie Street Stormwater Channel No. 15 with White Bay Power Station in background. OEH n.d.

Significance	Local
Description	The Beattie Street Stormwater Channel No. 15 spans an approximate area of 72 ha within the municipality of Leichhardt. Its outlet is located at White Bay, extending from this point, west to Roberts Road, crossing Mansfield Road, Goodsir and Reynolds Streets to Beattie Street. Constructed in 1893, the channel ranges in size from 18'2" x 4'6" - 3'3" x 2'4".

¹⁹⁴ OEH, 2001. 'Beattie Street Stormwater Channel No. 15'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=4570329>

Beattie Street Stormwater Channel No. 15 ¹⁹⁴

Statement of significance

Beattie Street Stormwater Channel No. 15 is one of a group of the first nine purpose built stormwater drains to be constructed in Sydney in the 1890s. Prior to his period, the water courses which served to carry stormwater, were entirely in their natural state and were receptacles of sewage from the large population which had settled in the suburbs. In 1890, the then secretary (minister) for Public Works, the Hon. Bruce Smith, MLA, appalled at the extremely unhealthy conditions prevailing at the time, proposed a separate system of stormwater drains to be built to help alleviate the problem. By 1897 nine had been built, including Beattie Street, which was completed in 1893.

Beattie Street Stormwater Channel No. 15 includes the channel bed, walls and coping. The visual curtilage of the channel would vary along the channel length depending on surrounding land uses. The visual curtilage is limited by the fact that the stormwater channel is located predominantly below ground. A small section of the channel is open between Robert Road and Parson Street. The open section of the channel can only be observed from the roadway and is flanked by industrial properties.

Impact type No impact

Heritage impact assessment This heritage item is not located within the construction site, therefore there would be no direct impact.
Direct impact: Neutral

Vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated.

Potential direct impact: Neutral

The section of the channel that is open between Robert Street and Parsons Street is outside the construction site, therefore no visual impact is anticipated.

Indirect impact: Neutral

Table 65: Glebe Island Silos heritage impact assessment

Glebe Island Silos ¹⁹⁵

Image



Figure 232: Glebe Island Silos. OEH n.d.

Significance Local

¹⁹⁵ OEH, 2004. 'Glebe Island Silos'. Accessed 11 April 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4560016>

Glebe Island Silos ¹⁹⁵

Description	<p>The Glebe Island Silos were progressively developed between 1917 and 1975. The current site contains 30 cylindrical concrete silos that were established on the site in 1975. The silos are 38.4 metres in height, and each have a 2,400 tonne capacity. In addition, there are 14 star shaped interspaced bind each with a capacity of 550 tonnes.</p>
Statement of significance	<p><i>The extant c1970s silos have local heritage significance for their historic, aesthetic and representative values and for their rarity. The site is significant historically for the development of the bulk wheat storage and export industry in Australia. The former 1917-1925 silo complex (demolished 1999) was the first of its kind in the country and purpose built for the industry. The site was a principal port terminal for the NSW wheat (and other bulk cargoes) trade throughout the twentieth century. The silos are of historical and representative significance for their previous and ongoing operational use. They form part of the larger industrial context of Glebe Island and the Bays Precinct. Although the silos comprise a standard typology and their c1970s fabric is of no significance, their impressive scale, coupled with the consistent rhythmic typology and their prominent location, establishes the site as a prominent Sydney landmark of aesthetic significance. The site makes a significant contribution to Glebe Island and the harbourscape and provides a strong visual link to the history of the site, as the industrial port and storage facilities for Sydney which are now rare. The silos are likely to be valued as a landmark which contributes particularly to the local community's sense of identity; however, this is not readily defined and should be further tested. The Olympic paint scheme murals are associated with a significant event. However, it is recognised that the relevance of retaining a historical advertisement when there are a number of structures built for the Olympics; which equally stand in memorial for the event, is not of such significance to warrant retention in perpetuity. The advertising billboard is considered intrusive to the overall heritage value of the silos and should be removed. It is also noted that the signage structure is not in good condition. The Silos do not reach the requisite threshold for State heritage listing on the NSW State Heritage Register.</i></p>
Impact type	Indirect impact: Views and vistas
Heritage impact assessment	<p>This heritage item is not located within the construction site, therefore there would be no direct impact. Direct impact: Neutral</p> <p>The Glebe Island Silos are located adjacent to the construction site. Vibration is predicted to be below the cosmetic damage screening criteria. Potential direct impacts associated with vibration are not anticipated. Potential direct impact: Neutral</p> <p>Construction of Stage 1 would result in demolition of existing structures for The Bays Station construction site, located on the southern side of Robert Street directly west (20 metres) from the Glebe Island Silos. This would result in visual changes in the immediate vicinity of the heritage item, which maintains several view lines and view corridors towards The Bays. The construction site comprises predominantly vacant land that is historically associated with industrial use. The Bays Station construction site would change the wider setting of the heritage item, although views towards the heritage item from the surrounding streetscape would be maintained and the aesthetic significance of the item would not be diminished. The acoustic sheds within the construction site would be located approximately 100 metres to the west of the heritage item. The acoustic sheds would be around 15 metres in height and would be discernible from the Glebe Island Silos, although this additional visual impact would be temporary in nature. This has been assessed as having a minor impact on the heritage structure. Indirect impact: Minor</p>

6.10.4 Assessment against conservation management policies

6.10.4.1 White Bay Power Station

The conservation policies provided in the Conservation Management Plan (CMP) 2011 prepared for the White Bay Power Station have been reviewed. Policies provided in the CMP relevant to assessing the impacts of Stage 1 have been extracted and provided below for reference.

Table 66: Relevant conservation policies – White Bay Power Station Conservation Management Plan¹⁹⁶

Policy	Assessment of impacts against recommendations
1.1.1	<p><i>White Bay Power Station retains considerable cultural significance and must be retained and conserved. In order to ensure its long term maintenance and survival it must be adapted for an appropriate new use or uses. Such uses must retain and respect the significant elements and attributes of the place.</i></p> <p>Stage 1 does not involve the demolition of structures considered significant.</p>
1.1.6	<p><i>White Bay Power Station must retain a use or uses, which allow reasonable public access to, and interpretation of, those significance spaces, elements and machinery that represent the component parts of the power generation process. Such access should not place significant fabric or qualities of these areas at risk of alteration, damage or removal.</i></p> <p>Stage 1 does not involve the demolition of structures considered significant. In addition, Stage 1 works are not expected to significantly reduce areas of public access further than presently accessible, or require the need for interpretation.</p>
1.1.7	<p><i>The aesthetic (including the sensory aspects of visual, aural and tactile) qualities of the internal and external spaces and elements of exceptional and high significance must be retained and respected, viz. the visual and special qualities of the Turbine Hall.</i></p> <p>Stage 1 involves the demolition of all structures, ground works and excavations within a portion of the SHR curtilage of the White Bay Power Station. No significant buildings or structures in the heritage curtilage are located within the construction site, which mainly comprises vacant land.</p>
1.2.1	<p><i>Any development being proposed in the vicinity of the White Bay Power Station must carefully consider its bulk, scale and placement in order to respect the visibility and prominence of the power station as a harbourside landmark.</i></p> <p>Stage 1 would result in demolition of development, site establishment and the excavation for the station within a portion of the White Bay Power Station SHR heritage curtilage. This would result in visual changes within the heritage item and changes to the arrangement and configuration of the land surrounding the significant industrial structures. These external spaces have identified spatial significance for their contribution to the scale and industrial quality of the item and its built components, and excavation and redevelopment of this land would result in an adverse visual impact. The construction site covers land beyond the curtilage of the White Bay Power Station and extends to the foreshore at Johnstons Bay, which would result in further changes to the wider industrial setting and context of the former power station. The acoustic sheds within the construction site would be around 15 metres in height, although additional visual impact associated within this aspect of Stage 1 would be temporary.</p>

¹⁹⁶ Design 5 Architects 2011. White Bay Power Station: Conservation Management Plan.

Policy	Assessment of impacts against recommendations
1.2.2	<p><i>Those views from major axial approaches such as Anzac Bridge, Glebe Point Road, Johnston Street Annandale, City West Link, Victoria Road (from north west), Mullens Street and Robert Street must be maintained as substantially unobstructed views. Any new structures in the vicinity of the White Bay Power Station must not substantially mask the visibility of the power station or threaten its landmark qualities as the major focal element in these views.</i></p> <p>The proposed acoustic sheds, at 15 metres in height, would not exceed the height of the existing structure and the visual impact associated within this aspect of Stage 1 would be temporary.</p>
1.2.3	<p><i>General and changing views towards White Bay Power Station from the harbour, major parks and public areas of the southern edge of Balmain and Rozelle, Glebe Point, Pyrmont Point, Observatory Hill and Darling Harbour, as well as from the Harbour Bridge, Anzac Bridge, City West Link road, The Crescent and Victoria Road, should be retained substantially unobstructed by other large elements, existing or future. Such elements should be sited, so as to be seen as part of its industrial context, framing the power station and strengthening its maritime related industrial character.</i></p> <p>The proposed acoustic sheds, at 15 metres in height, would not exceed the height of the existing structure and the visual impact associated within this aspect of Stage 1 would be temporary.</p>
1.2.5	<p><i>Lower level structures between the Anzac Bridge (western approaches) and the White Bay lower Station could be constructed as long as they do not substantially obscure the major view of the east front of the power station. The full height of the glass curtain wall to the 1958 boiler house should be visible from the western approaches to the Bridge.</i></p> <p>Stage 1 would result in demolition of structures, site establishment and the excavation for the station within a portion of the White Bay Power Station SHR heritage curtilage. This would result in visual changes within the heritage item and changes to the arrangement and configuration of the land surrounding the significant industrial structures. These external spaces have identified spatial significance for their contribution to the scale and industrial quality of the item and its built components, and excavation and redevelopment of this land would result in an adverse visual impact. The construction site covers land beyond the curtilage of the White Bay Power Station and extends to the foreshore at Johnstons Bay, which would result in further changes to the wider industrial setting and context of the former power station. The acoustic sheds within the construction site would be around 15 metres in height, although additional visual impact associated within this aspect of Stage 1 would be temporary.</p>

6.10.5 Potential unlisted heritage items

This section provides a preliminary assessment of significance and impact assessment for potential unlisted heritage items that are located within The Bays Station construction site.

6.10.5.1 Former warehouse shed – Glebe Island

Background research undertaken by Urban Growth in 2018 for The Bays Urban Transformation program identified a potential unlisted heritage item that is located in The Bays Station construction site. This item is identified as a 'Former warehouse shed east side of Glebe Island at the head of White Bay'. The heritage study provides the following description of the potential unlisted heritage item:

"The building is the southern-most and last remaining portion of a warehouse building that originally extended north-east along the north-western edge of Glebe Island. The building appears to be a combination of timber and steel post and beam construction clad externally with corrugated metal. The south (end) elevation includes a small section of external brick walling. The south-east elevation consists of an overhanging steel framed canopy, likely related to earlier functions of loading and unloading on land-side."



Figure 233: Former warehouse shed¹⁹⁷

Summary of significance

The heritage study concludes the building is likely a remnant of a warehouse shed constructed in 1925, and identifies that the building could be locally significant for its technological and research potential. The following conservation and management policies are contained in the heritage study:

-
- *"Further fabric analysis and recording of the building needs to occur to understand changes and identify significant fabric and any research potential.*
 - *The building should be retained and conserved as part of any reuse of the island and urban transformation.*
 - *Alterations to the exterior of the building should not detract from or confuse its distinctive form and character, particularly the south and north elevations. Openings within the facades are acceptable for new uses, but should consider the industrial character.*
 - *The buildings relationship to the bay and wharf edge should be retained, respected and strengthened.*
 - *The building can be integrated with other buildings; however, the form, scale, material and character of the building should be legible within any additions.*

¹⁹⁷ Urban Growth 2018

- *The opportunity to interpret the demolished north-east section of the shed is encouraged.*
- *If the subject building cannot be retained, it should be recorded and any documents lodged with the State Library of NSW. Archival recording should be carried out by measured drawing and photographically in accordance with NSW Heritage Council guidelines: 'How to Prepare Archival Records of Heritage items' and 'Photographic Recording of Heritage Items Using Film or Digital Capture'."*

Heritage impact assessment

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. The overall impact on this potential unlisted heritage item would be **major**.

6.10.6 Overview of heritage impacts

6.10.6.1 Listed heritage items

The following table provides an overview of the Stage 1 impacts on listed heritage items, associated with The Bays Station construction site.

Table 67: Heritage impacts for The Bays Station construction site on listed items

Heritage item	Register listings	Significance	Direct impact	Potential direct impact	Indirect impact
White Bay Power Station	SHR Listing No. 01015	State	Moderate	Minor	Moderate
White Bay Power Station	Urban Growth NSW Development Corporation s170 4500460	State	Moderate	Minor	Moderate
The Valley Heritage Conservation Area	Leichhardt LEP Item No. C7	Local	Neutral	Neutral	Minor
White Bay Power Station (inlet) Canal	Port Authority of NSW s170 4560062	Local	Minor	Minor	Neutral
White Bay Power Station (outlet) Canal	Port Authority of NSW s170 4560026	Local	Neutral	Neutral	Neutral
Beattie Street Stormwater Channel No. 15	Sydney Water s170 4570329	Local	Neutral	Neutral	Neutral
Glebe Island Silos	Port Authority of NSW s170 4560016	Local	Neutral	Neutral	Minor

6.10.6.2 Potential unlisted heritage items

The following table provides an overview of the Stage 1 impacts on potential unlisted heritage items, associated with The Bays Station construction site.

Table 68: Heritage impacts for The Bays Station construction site on potential unlisted items

Heritage item	Significance	Direct impact	Potential direct impact	Indirect impact
Former warehouse shed – Glebe Island	Local	Major	N/A	N/A

6.11 Power supply routes

The majority of the power supply routes would be constructed by trenching within the existing road reserve. Where major roads are crossed by the route, alternative construction methods would be used such as under boring in order to avoid impacts to the road network. Alternative construction methods such as under boring may also be used to avoid other constraints such as services or areas of environmental sensitivity.

Trenches are expected to be around one metre wide and 1.5 to two metres deep. It is therefore likely any subsurface archaeological remains to this depth below the road treatment and pavement would be impacted. Where previous disturbance, such as utilities installation, has occurred the archaeological potential would be low.

The following review includes only those listed items which the power supply route would pass directly through heritage curtilage or may be impacted by the power supply route work. It is assumed that the power supply routes would be located within the road corridor.

Assessments of archaeological significance provided in Table 69 are preliminary and are based on assessments of station sites prepared for this project and the results of other investigations. More detailed consideration of impacts would be included in the relevant archaeological research designs for the project.

Table 69: Power supply routes – potential impacts on heritage items and archaeological remains

Description	Listing	Heritage significance	Potential Heritage impact and magnitude
Westmead metro station construction site			
Parramatta Park and Old Government House	WHL Place ID 106209 SHR 00596 Parramatta LEP I00596	State – World	<ul style="list-style-type: none"> Potential for locally significant and State significant archaeology in undisturbed sections of the road corridor. Impacts to fabric and visual impacts are likely to be temporary and minor.
Archaeological resources	N/A	Local – State	<ul style="list-style-type: none"> Late 18th and early 19th century archaeological resources of local to State significance including convict accommodation and workshops, early agricultural holdings, residential and commercial holdings

Description	Listing	Heritage significance	Potential Heritage impact and magnitude
Parramatta metro station construction site			
Parramatta Park and Old Government House	WHL Place ID 106209 SHR 00596 Parramatta LEP I00596	State – World	<ul style="list-style-type: none"> Potential for locally significant and State significant archaeology in undisturbed sections of the road corridor. Impacts to fabric and visual impacts are likely to be temporary and minor.
Archaeological resources	N/A	Local – State	<ul style="list-style-type: none"> Late 18th and early 19th century archaeological resources of local to State significance including convict accommodation and workshops, early agricultural holdings, residential and commercial holdings.
Clyde stabling and maintenance facility construction site			
Archaeological resources	N/A		<ul style="list-style-type: none"> No known non-Aboriginal archaeological remains predicted within this area
The Bays Station construction site			
The Valley Heritage Conservation Area	Leichhardt LEP C7	Local	<ul style="list-style-type: none"> Within conservation area. Impacts to fabric and visual impacts are likely to be temporary and minor.
Archaeological resources	N/A	Local	<ul style="list-style-type: none"> Power supply route traverse's outlet canal for White Bay Power Station and may result in adverse direct impacts; remainder of power supply route would not impact any known non-Aboriginal archaeological resources

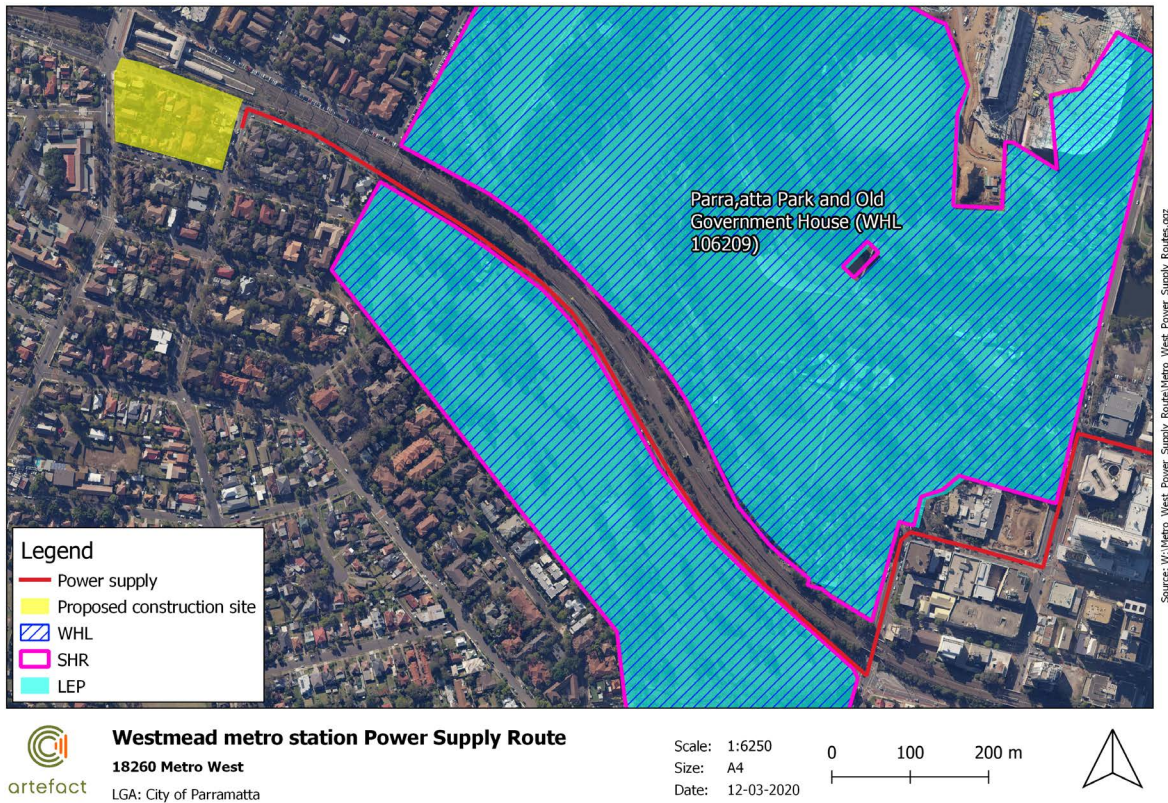


Figure 234: Westmead metro station power supply route



Figure 235: Parramatta metro station power supply route



Figure 236: Clyde stabling and maintenance facility power supply route

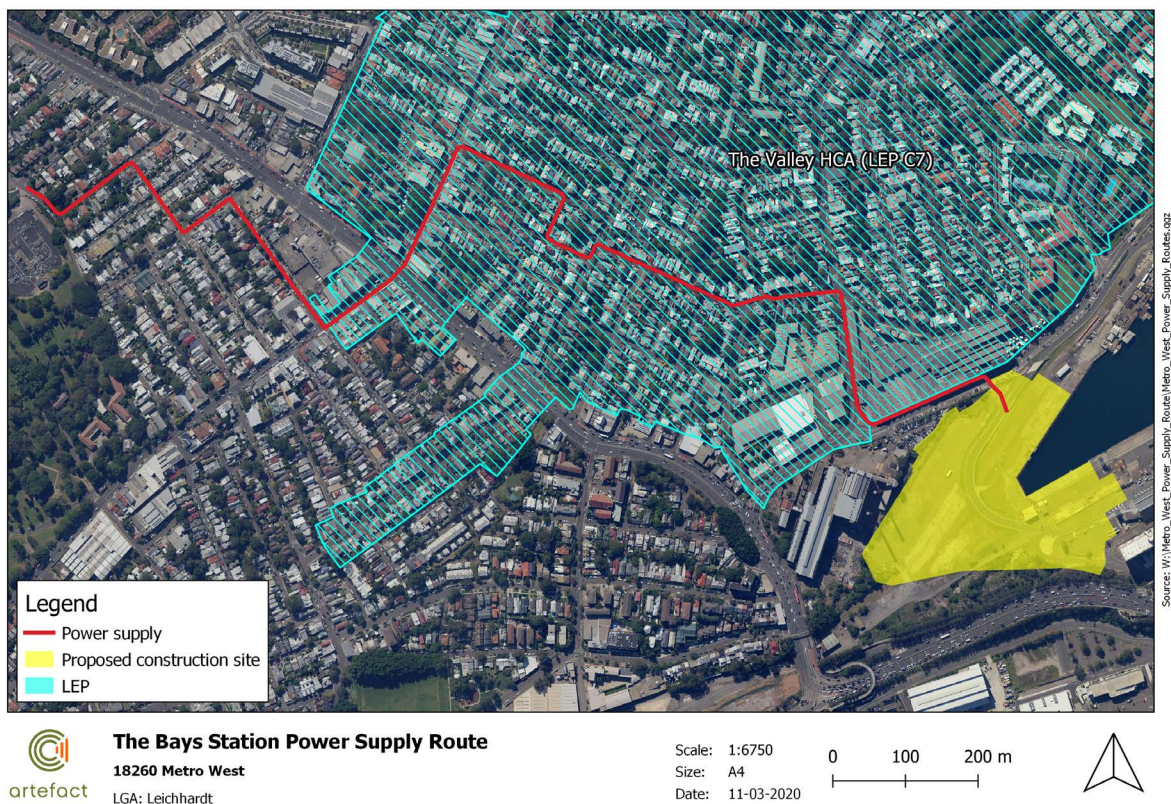


Figure 237: The Bays Station power supply route

6.12 Settlement

Ground excavation for Stage 1 has the potential to cause ground movement caused by the redistribution of the stresses within the ground or groundwater drawdown. Table 71 provides the potential heritage impact and magnitude of settlement to heritage items within or within close proximity to the proposed construction sites. This assessment has excluded heritage items which have been assessed as having a settlement risk of below Risk Level 2 (slight).

Table 70: Risk classifications¹⁹⁸

Risk	Description
1	Negligible: superficial damage unlikely
2	Slight: possible superficial damage which is unlikely to have structural significance
3	Moderate: expected superficial damage and possible structural damage to buildings, possible damage to relatively rigid pipelines
4	High: Expected structural damage to buildings. Expected damage to rigid pipelines, possible damage to other pipelines

Table 71: Settlement – potential impacts on heritage items

Heritage item	Listing	Heritage significance	Potential Heritage impact and magnitude
Parramatta metro station construction site			
Roxy Theatre	SHR 00711	State	<ul style="list-style-type: none"> • Possible superficial damage which is unlikely to have structural significance • Risk level: 2 (slight) • Settlement: 25mm
North Strathfield metro station			
North Strathfield Railway Station Group	Railcorp's 170 4801029	Local	<ul style="list-style-type: none"> • Possible superficial damage which is unlikely to have structural significance • Risk level: 2 (slight) • Settlement: 18mm

¹⁹⁸ Transport for NSW, 2019. *Sydney Metro West – Ground Movement and Existing Infrastructure*.

Heritage item	Listing	Heritage significance	Potential Heritage impact and magnitude
Five Dock Station			
Sta Alban's Anglican Church Rectory	Canada Bay LEP I227	Local	<ul style="list-style-type: none"> • Possible superficial damage which is unlikely to have structural significance • Risk level: 2 (slight) • Settlement: 17mm
St Alban's Anglican Church	Canada Bay LEP I226	Local	<ul style="list-style-type: none"> • Possible superficial damage which is unlikely to have structural significance • Risk level: 2 (slight) • Settlement: 30mm
The Bays Station construction site			
Anzac Bridge	RMS s170 4305018	Local	<ul style="list-style-type: none"> • Possible superficial damage which is unlikely to have structural significance • Risk level: 2 (slight) • Settlement: 10mm
Glebe Island Silos	Port Authority of NSW s170 4560016	Local	<ul style="list-style-type: none"> • Possible superficial damage which is unlikely to have structural significance • Risk level: 2 (slight) • Settlement: 20mm

7.0 NON-ABORIGINAL ARCHAEOLOGICAL IMPACT ASSESSMENT

7.1 Methodology

7.1.1 Archaeological potential

Historical archaeological potential is defined as the potential of a site to contain historical archaeological relics, as classified under the NSW *Heritage Act 1977*. The assessment of historical archaeological potential is based on the identification of former land uses and evaluating whether subsequent actions (either natural or human) may have impacted on archaeological evidence for these former land uses. Knowledge of previous archaeological investigations, understanding of the types of archaeological remains likely to be associated with various land uses, and the results of site inspections are also taken into consideration when evaluating the potential of an area to contain archaeological remains.

The assessment of archaeological potential contained in this report is based on analysis of historical plans and readily available secondary sources and archaeological investigations undertaken in the vicinity of the construction sites.

The assessment is informed by the NSW Heritage Division's 2009 guidelines *Assessing Significance for Historical Archaeological Sites and Relics*. Archaeological assessments have been prepared for only those areas which are located within the proposed construction site footprints for the works.

7.1.2 Regional archaeological studies

A number of archaeological assessments and excavations have been conducted within the vicinity of several of the construction sites, as well as archaeological assessments and excavations which have been conducted on similar types of subsurface remains as to those predicted within specific construction sites. Each construction site archaeological assessment provides a short overview of pertinent archaeological work for that construction site.

However, one regional archaeological landscape study is described here, which applies for several of the construction sites within the Parramatta LGA, and an overview of this study is provided below.

7.1.2.1 Parramatta Historical Archaeological Landscape Study (PHALMS)

Godden Mackay and Logan prepared an overarching assessment of historical archaeological potential and significance for the Parramatta area in 2000. The Parramatta area was divided into a number of discrete areas of land, with short histories and assessments of archaeological potential provided for each area. Each of these areas was designated as an Archaeological Management Unit (AMU).

For those Stage 1 sites located within the Parramatta LGA (Westmead, Parramatta, Clyde and Rosehill), the AMUs which are located in the construction site are discussed in their respective subsections below. The PHALMS listings are used as a guide for archaeological research and are not considered binding determinations on archaeological potential and significance for the Parramatta area.

7.2 Westmead metro station construction site

7.2.1 Land use summary

The historical development of the Westmead metro station construction site has been divided into the following historical phases of activity for this assessment:

- Phase 1 (1788 – 1860): Government Farm and Government Domain. The Westmead metro station construction site was part of the wider Government Farm and Domain, although there is no clear evidence that crops or orchards were planted in this specific area during this time.
- Phase 2 (1860 – 1943): Railway line and subdivision. The Great Western Railway Line was extended to the north of the construction site in 1860 with the first Westmead Station constructed at the current station location in 1883. The Westmead metro station construction site was advertised for subdivision in 1903.
- Phase 3 (1943 – Present): Late twentieth century development. Residential housing was present within the Westmead metro station construction site in 1943, with minor replacement of single-storey housing with medium density apartment buildings during the 1970s and 1980s.

7.2.2 Previous impacts

The ongoing development of the Westmead metro station study area for residential and commercial growth would have resulted in localised impacts to any subsurface remains. The construction and later modification of the Western Railway line, as well as the construction and renovation of Westmead Station would have also caused severe localised subsurface impacts in the vicinity of the station and rail corridor. The abutment on the southern side of the existing Westmead Station has been largely ground disturbed due to the development and modification to the railway station over time.

The Westmead metro station construction site demonstrates a reasonable degree of continuity of residences from before the 1940s and is likely not heavily ground disturbed beyond existing building footprints. The Westmead metro station construction site has significant modern landscaping and gardens which would have likely shallowly disturbed any remnant earlier natural soil profile.

Localised ground disturbance has likely been caused by the installation of utility services within the Westmead metro station construction site, as well as road construction and road resurfacing during the later twentieth century. Widespread localised ground disturbance would result in any buried subsurface remains being likely horizontally and stratigraphically truncated throughout the Westmead metro station construction site, reducing their potential to remain archaeological legible.

7.2.3 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within the Westmead construction sites, the potential for the identification of archaeological remains is predicted in Table 72.

Table 72: Predicted archaeological remains and potential at Westmead metro station construction site

Phase	Site feature	Potential archaeological remains	Potential
Phase 1 (1788 – 1860)	Grazing land, informal agricultural use	Archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Subsequent development in the construction site has likely removed legible and intact remains.	Nil
Phase 2 (1860 – 1943)	Late 19 th and early 20 th c. residences	Residential development of the site included Federation and Inter-War housing construction commencing from at least 1903. Archaeological remains relating to former houses would include brick footings, ceramic and copper pipes and services, residential refuse and isolated artefact deposits. Later development on the site would have likely removed the majority of these archaeological remains.	Low
Phase 3 (1943 – Present)	Mid- to late 20 th c. residences	Archaeological remains associated with former residential structures, road and utility upgrades.	Moderate

7.2.4 Assessment of archaeological significance

Table 73 provides a discussion of the potential significance of archaeological remains that may be located within the Westmead metro station construction site. This significance assessment has been prepared based on the guidelines and methodology outlined in section 7.1 of this report.

Only archaeological remains which have been predicted to be present (i.e. low potential or higher) are discussed in the following table.

Table 73: Assessment of significance for archaeological remains at the Westmead metro station construction site

Criteria	Discussion
Research potential	Potential archaeological remains associated with late 19 th and 20 th century residential structures would not contribute additional research information that is not available from historical and archival sources.
Association with individuals, events or groups of historical importance	The potential archaeological remains are not associated with any particular individual, historical event or social group considered of historical importance.
Aesthetic or technical significance	Potential archaeological remains associated with late 19 th and 20 th century residential structures are not likely to demonstrate aesthetic or technical value.
Ability to demonstrate the past through archaeological remains	Potential archaeological remains associated with late 19 th and 20 th century residential structures are not likely to demonstrate the historical development of the Westmead area which do not exist in other historical or archival sources.

Criteria	Discussion
Statement of Significance	Archaeological remains related to the former use of the Westmead site would consist of structural remnants of late 19th and 20th century residences. These remains would be broadly demonstrative of common architectural styles from this period and would not be expected to be artefact-rich. Archaeological remains for late 19th and 20th century residences would not reach the threshold of local significance.

7.2.5 PHALMS listings and discussion

7.2.5.1 PAMU 2983

The northern portion of the Westmead metro station construction site is located within Parramatta Archaeological Management Unit 2983, which has the following provided description of the AMU: ¹⁹⁹

This AMU has no current archaeological research potential.

The railway line was extended through Parramatta in the 1850s. The construction of this section of the railway resumed part of the former Government Domain.

The physical archaeological evidence within this area is unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

The archaeological resources of this AMU are likely to have been totally removed.

This AMU has no archaeological significance.

The construction and expansion of the Great Western Railway Line over time has removed all former ground surfaces in this area of the Westmead metro station construction site. This assessment supports the statement of significance provided in PAMU 2983.

7.2.5.2 PAMU 2903

The majority of the Westmead metro station construction site is located within Parramatta Archaeological Management Unit 2903, which has the following provided description of the AMU: ²⁰⁰

This AMU has no current archaeological research potential.

This residential area was once part of the Government Domain. This area was reserved as a burial ground when the Domain was subdivided for the creation of Parramatta Park but was never used as such.

The physical archaeological evidence within this area is unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

¹⁹⁹ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2983*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242983>

²⁰⁰ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2903*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242903>

Archaeological evidence at this site is likely to be subject to major disturbance.

This AMU has no archaeological significance.

This archaeological assessment also confirms that this portion of the Westmead metro station construction site would not contain any significant archaeological remains.

7.2.6 Archaeological impact assessment

Significant archaeological remains have not been predicted to be located within the Westmead metro station construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

7.2.7 Mitigation and management measures

This archaeological assessment has concluded that there is no potential for intact and significant archaeological remains within the Westmead metro station construction site. Ground disturbing works at the Westmead metro station construction site would adhere to Sydney Metro's Unexpected Heritage Finds Procedure.

7.3 Parramatta metro station construction site

7.3.1 Previous archaeological studies

Archaeological investigations have taken place within the Parramatta CBD area since the 1980s, with a large amount of archaeological investigation and reporting conducted since that time. This section does not discuss all archaeological programs conducted in the Parramatta CBD area, but instead focusses on those excavations which are either proximate to the proposed construction site, or that have identified archaeological remains similar to those which are predicted to be located in this current assessment.

7.3.1.1 Archaeological Zoning Plan of Parramatta (AZP)

Historical and archival research conducted in the 1990s was used to prepare a zoning plan of Parramatta to guide future archaeological assessment and investigation. As part of this zoning plan, early historical plans were redrawn for clarity and inventory numbers assigned for much of Parramatta where former structures were suspected to be located.

The AZP provides six archaeological inventory listings within the current construction site. All but one of these inventory listings indicate that convict huts were present on the site from the 1790s until at least the 1820s (and possibly longer). These inventory listings are all considered of high significance; however, a detailed understanding of modern ground disturbance is not provided in the AZP.

7.3.1.2 Convict Hut excavation, Parramatta, 1985

In 1985, an excavation was undertaken in response to the intended construction of the Commonwealth Offices by Leighton Contractors Pty Ltd and the Construction of the Law courts building by the Department of Housing. Historical research and trial testing indicated that one of the four convict huts originally constructed on this large site was likely to have survived. This was confirmed during excavation which revealed a convict hut on sandstock brick footings with a large rectangular structure situated directly behind it, believed to have added between 1790 and 1820. In addition, there was evidence of repairs made.

7.3.1.3 “The Babes in the Wood” site, Parramatta, 1989 ²⁰¹

‘The Babes in the Woods’ archaeological excavation was undertaken in 1989 at the site of the former Prospect Electricity Staff Car Park, prior to the site’s redevelopment. The site is located on the south-eastern corner of Smith and George Streets, Parramatta.

The archaeological excavation resulted in many archaeological findings, including the site of the Babes in the Wood Hotel (c1810s-1880s); the site of a convict hut (c1790s), the second to be excavated within Parramatta; and evidence of later subdivision and development. In addition, the excavation revealed that the alignment of George Street has remained the same since 1790 and positioning of convict huts can be plotted using a method of extrapolation from historical measurements of the town layout and allotments. Lastly, one of the most significant findings was the recognition of an introduced soil type (c1840-onwards); either deposited by wind or water, indicating the degradation of the local environment as a result of clearance, agriculture and human settlement.

The excavation of the convict hut showed evidence of structural modification, barrel pits and a cellar, in addition to an artefact assemblage which revealed insight into the living conditions of convicts and the early development of Parramatta, which was very dense from the c1810s onwards. The barrel pits and cellar provided evidence of a dairy, and other horticultural activity were expected from pollen analysis and the artefact assemblage.

7.3.1.4 Telephone Exchange, 21A George Street, Parramatta²⁰²

Excavations were undertaken at 21a George Street, Parramatta in 1992 to reveal the historic settlement of the site prior to the excavation of the site prior to the excavation of the cable trench between George Street and the new Telephone Exchange, fronting Marsden Street, Parramatta.

Archaeological features included post holes and pits interpreted as forming the walls of a convict hut; shallow pits, most likely rubbish pits; presence of outbuildings; a well and associated backfill; remains of a cottage constructed between 1836-1844 and associated demolition remains; and a large artefact assemblage.

7.3.1.5 The Former ‘Red Cow’ Inn, Parramatta, 1990 ²⁰³

In 1990, Edward Higginbotham was commissioned by Parramatta City Council to prepare a historical and archaeological potential assessment for the proposed site of a multi-storey car park in Erby Place, Parramatta. The site is located within the block bounded by Phillip, George, Church and Smith Streets, Parramatta.

The site was assessed as being relevant to themes of social mobility, relations between convict and free persons, development of the town by free persons. However, Higginbotham recommends that these themes would be best explored through historical documentation rather than archaeological evidence. The remains of the Red Cow Inn are located on the edge of the site, or potentially outside its boundaries. However, these remains have the potential to reveal information concerning cottage industries and small-scale manufacturing, service function, the standard and hygiene of the establishment, public health and sanitation, water supply and sewerage. In addition, the artefact assemblage may contribute to knowledge of manufacturing techniques, trading and marketing networks and the socio-economic status of owners, occupiers, staff and guests of the hotel. Lastly, soil and pollen analysis may provide insight into the soil erosion, agricultural clearance and settlement practices within Parramatta.

²⁰¹ Edward Higginbotham, 1990. *The Babes in the Wood, Parramatta: Report on the archaeological excavation of the former Prospect Electricity Staff Car Park*. Prospect County Council, Haberfield.

²⁰² Edward Higginbotham, 1992. *Report on the Archaeological Excavations in advance of cable laying on the site of the Telephone Exchange, 21A George Street, Parramatta, NSW, 1992*. Telecom Australia, Sydney.

²⁰³ Edward Higginbotham, 1990. *Historical and Archaeological Analysis of the former ‘Red Cow’ Inn: Proposed site of multi-storey car park, Erby Place, Parramatta*. Parramatta City Council, Parramatta.

7.3.1.6 The New Blood Bank, Parramatta Hospital, George Street, Parramatta, 1993 ²⁰⁴

Excavations were undertaken in 1993 as part of the redevelopment of part of Parramatta Hospital for a New Blood Bank. These excavations made a significant contribution to the knowledge of the eighteenth and early nineteenth century development of Parramatta. Archaeological features included the remains of a convict hut and an archaeological assemblage including table-ware such as fine earthenware and Chinese porcelain, glass tableware and stemware. In addition, the site revealed that the convict hut underwent at least four stages of repair, rebuilding or reconstruction, illustrating a slow adaption to building techniques and styles more suitable to the climate and local environment.

7.3.1.7 Parramatta Hospital, Parramatta, 1990 ²⁰⁵

An archaeological assessment was undertaken of the Parramatta Hospital site to determine archaeological potential prior to redevelopment of the site. The site was noted for its ability to contribute to a large number of the current research themes in historical archaeology. Archaeological remains have the potential to demonstrate the historic sequence of development of this part of Parramatta and give insight into life within the early town.

Potential archaeological remains include remains of the hospital site, which is the oldest continuously occupied for its purpose in Australia; remains of town allotments associated with early convict and emancipist occupation; remains of Brislington town house; remains of the Emu Brewery which is the earliest privately owned brewery in Parramatta; and remains associated with the Aboriginal occupation of the area.

7.3.1.8 153 Macquarie Street, Parramatta, 2015-2016 ²⁰⁶

Excavations were undertaken at the corner of 153 Macquarie Street and Leigh Place, the former Australia Post Office site, from 2015-2016. These excavations revealed a series of historical construction phases including the remains of three brick houses built in the 1880s fronting Macquarie Street with associated cesspits and out buildings; stables with brick drainage system associated with the White Horse Inn; the remains of a house thought to have been in place from 1810, which included fireplaces, occupation deposits, a large timber base-plate, postholes and sandstone footings, with associated yard deposits and a brick-lined well and brick sump draining towards the 'Town Drain'; the Town Drain in the form of a large sandstone box drain running across Civic Place; and evidence for early agricultural use of the site in the form of hoe marks and extensive plough lines crossing historic lot boundaries which probably date to the late eighteenth century to the nineteenth century.

7.3.1.9 Parramatta Children's Court, corner of George & O'Connell Streets, Parramatta, 2004²⁰⁷

Excavations were undertaken in 2004 at the Parramatta Children's Court. These excavations included the in-situ conservation of the archaeological remains of two convict huts within a Conservation Zone extending east-west across the site and into the O'Connell Street footpath.

The excavations revealed extensive occupation of the site, with remains including: a storage cellar with artefacts believed to be linked to emancipated convict Samuel Larkin including early locally-made pottery, early clay roofing tiles, gun flint, French or American cowboy style spur, Chinese export porcelain; a series of pits containing artefacts contemporary to the storage cellar; remains of an 1830s timber masonry house; remains of the Emu Brewery and associated cellar backfilled with demolition material and quantities of artefacts, a drain/sump from the floor of the cellar which emptied into the eastern creek line; and a mortar bedding and robbed walls outlined the layout of the brewery.

²⁰⁴ Edward Higginbotham, 1994. *Report on the Archaeological Excavation of the site of the new Blood Bank, Parramatta Hospital, George Street, Parramatta*. NSW Public Works, Health Development, Sydney.

²⁰⁵ Edward Higginbotham, 1990. *Historical and Archaeological Analysis of Parramatta Hospital, Parramatta*. The Department of Public Works, NSW.

²⁰⁶ Casey & Lowe, 2016. *153 Macquarie Street, Parramatta*. Parramatta City Council, Sydney.

²⁰⁷ Casey & Lowe, 2006. *Archaeological Investigation: Parramatta Children's Court cnr George & O'Connell Streets, Parramatta*. NSW Department of Commerce, Sydney.

Additional features included: a well with quantities of artefacts; and the remains of an 1880s terrace house built with re-used sandstock bricks.

The excavation provided an insight into emancipated convict life; from convict existence to government employment. In addition, it was revealed that Parramatta's convict period was fleeting, disappearing soon after Governor Phillip's departure.

7.3.1.10 95-101 George Street, Parramatta, 2005 ²⁰⁸

An archaeological assessment of 95-101 George Street Parramatta was undertaken in 2005 prior to the commercial development of the site. At time of assessment, the site was vacant, however a number of later nineteenth century and twentieth century buildings and yard spaces had occupied the site shortly prior to assessment.

The assessment found that the site had the potential to contain soil profiles containing pollens and micro-flora associated with settlement landscape and the impact of European settlement; evidence of Aboriginal occupation; insight into the original form and width of George Street from 1790-1823; two convict huts and their associated garden allotments, wells and cesspits; evidence of the expansion of one of the huts into a public house or hotel and associated outbuildings; information regarding the hotel's demolition and replacement with a residential building; construction of a timber store or warehouse; evidence of c1884 'Hampstead' House and associated outbuildings; construction of commercial buildings constructed during the latter part of the nineteenth century; evidence of extensive modification and structure erection at 101 George Street during the 1930s including outbuildings behind Hampstead House; information regarding the impact of the NRMA Building constructed during the 1950s on previous structures and stratigraphy; services including early-nineteenth century timber or brick drains and wells, later nineteenth century ceramic piped services and twentieth century cables in addition to hard landscape components such as paths and fence lines. Lastly, there is high potential for an extensive artefact assemblage deriving from all periods of European occupation.

7.3.1.11 143-169 Macquarie Street (One Parramatta Square), Parramatta, 2014-2015 ²⁰⁹

Archaeological monitoring and salvage excavation were undertaken at 143 and 169 Macquarie Street (One PSQ) between 2014-2015. One PSQ is part of Parramatta Square, formerly known as Civic Place, Parramatta.

The excavations identified several phases of European site occupation, as well as evidence of an Aboriginal presence through the discovery of Aboriginal artefacts. Archaeological remains included: structural remains of the pre-1850s White Horse Inn stables; an early nineteenth century brick and sandstone well and drain, possibly associated with William Mahon, an emancipist who first settled on the site in 1823; a number of late nineteenth and early twentieth century buildings that once stood along the Smith Street frontage, notably 9-17 Smith Street; and a large artefact assemblage including 2795 pieces.

7.3.1.12 25 Smith Street and 76-78 Macquarie Street, Parramatta, 2003 ²¹⁰

Archaeological excavation was undertaken at 25 Smith Street and 76-78 Macquarie Street in 2003. The excavation revealed a number of features including an 1840 sandstone box drain with information found regarding construction methods and subsequent modifications. Secondly, evidence of a house on allotment 74 (76 Macquarie Street) was uncovered, revealed information regarding land

²⁰⁸ Wendy Thorpe, 2005. *Archaeological Assessment: 95-101 George Street, Parramatta*. Leighton Properties, Sydney.

²⁰⁹ GML Heritage, 2015. *143-169 Macquarie Street (One PSQ), Parramatta: Historical Archaeological Excavation Report*. Leighton Properties Ltd, Sydney.

²¹⁰ Edward Higginbotham, 2004. *Report of the Archaeological Excavations, 25 Smith and 76-78 Macquarie Street, Parramatta*. Kann Finch Architects, Haberfield.

ownership by Robert Bateman, a greater understanding of career paths and lifestyles of the nineteenth century, later occupation and the reasoning for the eventual vacation of the site. In addition, an artefact assemblage was uncovered from this allotment dated from c1830-1880. Lastly, a house on allotment 72 (northern portion of 78 Macquarie Street) was revealed which allowed for detailed dating, functional and spatial analysis of the structure.

7.3.1.13 41 – 59 George Street, Parramatta, 1996 ²¹¹

41-59 George Street was identified as having archaeological potential in 1991 within the AZP. Excavations were undertaken within 1996 to identify the extent and location of archaeological remains within the site. These excavations revealed underfloor deposits within existing buildings (43-47 George Street) had been formerly disturbed or destroyed during previous works during the 1920s; there is potential for archaeological features and deposits to remain cut into the B soil horizon; the rear yard at 41 George Street has been horizontally truncated to an extent which has removed the nineteenth century deposits; there is potential for the earliest archaeological remains of European activity to be present at the site; at 49-53 George Street, a strip along the street frontage has been truncated most likely during the construction of the Walton's Building during the 1950s; archaeological deposits relating to 53 George Street have been cut in half by the construction of the Parramall; and later stormwater drains would have also impaired the archaeological potential of the site. It was concluded that the construction of the Officeworks Superstore at the site in 1996 would have removed any further archaeological potential.

7.3.1.14 Brick Barrel Drain, 126 – 138 George Street Parramatta, 1981 ²¹²

Excavations were undertaken in June 1981 at 126-138 George Street, Parramatta, revealing sections of a brick barrel drain constructed between 1822-1828. The drain system was revealed to have had at least a two-period construction and served to disperse stormwater from part of Parramatta, which was otherwise poorly drained at the time. The drain commences its route near the junction of Church and Darcey Streets, proceeding in a north-easterly direction, crossing Macquarie Street before taking an easterly direction across Smith Street and Barrack Lane, then turning north across George Street, emptying into the Parramatta River.

The drain was constructed of a cylinder of sandstock brickwork with lime mortar, two courses of 200mm brick with an internal diameter ranging from 1200-1300mm. The drain has undergone a number of modifications, particularly during the c1930s which saw the introduction of concrete capping to sections of the drain. As such, the full of the drain is modern and excavations only revealed silt deposits which had not been removed by stormwater in restricted areas.

The excavation has provided insight into an aspect of early town planning often overlooked; drainage. The purpose of the drainage system is closely linked to the topography and street plan of Parramatta, which is located within a shallow river valley between low rounded hills. Stormwater from Church Street would have been rapidly carried away, improving the neighbouring land; the swamps and ponds within the area would have been drained or flow minimised; and Lower George Street would have seen improved drainage.

²¹¹ Office of Environment and Heritage, 2000. 'Parramatta Archaeological Management Unit 2873'. Accessed 29 May 2019, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242873>

²¹² Edward Higginbotham, 1983. *The Excavation of a Brick Barrel-drain at Parramatta*. Higginbotham, Haberfield.

7.3.2 Land use summary

The historical development of the Parramatta metro station construction site has been divided into the following historical phases of activity for this assessment:

- Phase 1 (1788 – 1821) – Founding of Parramatta and early convict accommodation. The Parramatta construction site overlies an area where Governor Phillip laid out ordered rows of early timber housing, initially for convict accommodation for Rosehill colony. Small gardens were described in historical records as having been located in the yards of these huts which were used to supplement food supplies for individual convict families
- Phase 2 (1821 – 1850) – Growth of the Parramatta township. The increase in free settlement in Parramatta leads to the replacement of early timber and itinerant structures with brick and sandstone residences and workshops in the construction site as the township develops
- Phase 3 (1850 – 1900) – Late nineteenth century commercial development. The construction site develops into a commercial precinct at the centre of the city of Parramatta
- Phase 4 (1900 – Present) – Twentieth century Parramatta. The construction site undergoes frequent development and redevelopment in accordance to commercial and demographic changes in the city.

7.3.3 Previous ground disturbance

The Parramatta metro station construction site has been continuously developed as an urban and commercial centre since the founding of the British colony in 1788. However, sequential phases of building construction in Parramatta would not have entirely removed earlier archaeological resources, with some sites developing over earlier sites with minimal, if any, vertical truncation of earlier deposits.

Typically, twentieth century construction and development have had a more severe subsurface impact than nineteenth century construction, largely due to basement excavation or excavation required for laying deep subgrades for heavier building construction. Utility service installation within the construction site is also present, with a number of electrical substations visibly present within the Horwood Place area, with likely extensive high and low voltage electrical mains in the area. Road construction and resurfacing, with thick concrete and potentially deep subgrades, would also have impacted any remaining archaeological resources.

This assessment did not have access to detailed service or building basement data at the time of its preparation. As such, the following discussion is inferred from historical plans and site inspection of publicly accessible areas and information only.

Several buildings along Church Street are Victorian-era commercial buildings which have been renovated for modern use, and it is expected that any archaeological remains below these structures would be in a relatively good condition. Infill redevelopment on Church Street may have modern basements which would have caused larger localised impacts to any present archaeological resources.

Existing structures on Macquarie Street to the west of Horwood Place include a post-war three storey office building and a late twentieth century single storey shopping strip. No basement structures were immediately visible for these buildings, although this would need to be confirmed during later archaeological investigation.

Structures on Macquarie Street to the east of Horwood Place are twentieth century commercial buildings, with the exception of 'Kia Ora' at 62 – 64 Macquarie Street. Kia Ora was originally constructed in 1841, although earlier structures were noted to be present on the site from 1823. Development for 60 Macquarie Street has encroached over the former rear yards of the Kia Ora property, and this development is likely to have some degree of basement levels which may have impacted shallow archaeological remains in this area.

The two-storey structure at 70 Macquarie Street was originally constructed in the early twentieth century, with a new building on the Macquarie Street frontage built in the 1950s; it is considered unlikely that the original building has significant basement levels. Office buildings at 68, 72 and 74 Macquarie Street may have subfloor levels which would have impacted archaeological remains. Macquarie Lane, directly behind these buildings, does not show evidence of deep ground disturbance beyond service installation and road construction, and a small laneway to the west of 70 Macquarie Street also shows similar signs of low disturbance.

Buildings on George Street include the Victorian-era sandstone building at 45 George Street (which would not be demolished for Stage 1) as well as a two-storey gym complex and single storey shopping mall. Archaeological monitoring of excavation conducted for the construction of the gym complex in the 1990s indicated that earlier construction had removed all previous archaeological remains in this location.²¹³ The single storey shopping mall does not appear to have any significant basements.

The lowest storey of the Horwood Place multi-storey carpark is on the same elevation as the local ground level, with no subsurface parking level apparent. However, construction for the carpark would have likely involved ground excavation for installation of a suitable subgrade as well as for laying concrete foundations and supports. While this construction has likely resulted in a high degree of ground disturbance, it is possible that small areas of undisturbed archaeological remains may remain in localised environments underneath the building footprint. This would need to be confirmed with further archaeological research and ground truthing.

The construction of the modern roadway for Horwood Place and car parking locations in the rear yards of Church and George Streets may not have resulting in widespread subsurface impacts. It is possible that archaeological remains within this area have been preserved, albeit with some truncation from intrusive road laying and utility services within the road corridor.

7.3.4 Assessment of archaeological potential

The historic development of the Parramatta metro station construction site and subsequent material remains is spatially and temporally complex, and the assessment of archaeological potential within the Parramatta metro station construction site has been divided into discrete phases for clarity. As such, each specific land use phase is discussed and individually in the subsections below.

7.3.4.1 Phase 1 (1788 – 1821) – Founding Parramatta and early convict accommodation.

Based on the history of the site and later historical ground disturbance that has occurred within the Parramatta metro station construction site, a summary of predicted archaeological remains during this phase is outlined in Table 74, and the locations of areas of archaeological potential illustrated in Figure 238.

²¹³ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2873*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242873>

Table 74: Predicted archaeological remains for Phase 1 (1788 – 1821) at the Parramatta metro station construction site

Site area	Site feature	Potential archaeological remains	Potential
Church Street properties	Convict huts	Timber, wattle and daub convict hut accommodation was known to have been built along the Church Street frontage of the construction site. Archaeological remains relating to this could include timber posts and postholes, beams and former earthen floor surfaces, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	Low - moderate
		Existing structures on Church Street have been developed and redeveloped since the late 19 th c. with limited apparent basement excavation. This construction and reconstruction on the site has likely partially disturbed any significant deposits.	
	Convict hut yards and gardens	The area surrounding the location of the former convict huts were known to be utilised as small commercial gardens by their residents. Archaeological remains relating to this could include timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits. Historic soil deposits associated with late 18 th c. horticulture may also be present.	Nil to Low
George Street properties		Existing structures on Church Street have been developed and redeveloped since the late 19 th c. with limited apparent basement excavation. This construction and reconstruction on the site has likely partially disturbed any significant deposits.	
	Convict huts	Timber, wattle and daub convict hut accommodation was known to have been built along the George Street frontage of the construction site. Archaeological remains relating to this could include timber posts and postholes, beams and former earthen floor surfaces, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	Low - moderate
		Existing structures on George Street have been developed and redeveloped since the late 19 th c, although archaeological investigation conducted during the construction of the current 41 – 59 George Street building did not identify any archaeological remains due to the degree of historical disturbance. It is likely however that remains situated below the shopping plaza at 61 George Street, and in the northern entrance to Horwood Place, are likely less disturbed, and significant deposits may be preserved in these locations.	
		The area surrounding the location of the former convict huts were known to be utilised as small commercial gardens by their residents. Archaeological remains relating to this could include timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits. Historic soil deposits associated with late 18 th c. horticulture may also be present.	
	Convict hut yards and gardens	Existing structures on George Street have been developed and redeveloped since the late 19 th c, although archaeological investigation conducted during the construction of the current 41 – 59 George Street building did not identify any archaeological remains due to the degree of historical disturbance. It is likely however that remains situated below the shopping plaza at 61 George Street, and in the northern entrance to Horwood Place, are likely less disturbed, and significant deposits may be preserved in these locations.	Low

Site area	Site feature	Potential archaeological remains	Potential
Macquarie Street properties	Convict hut yards and gardens	Historic plans from the late 18 th and early 19 th c. do not record any discrete convict huts located on the Macquarie Street frontage of the construction site. The area may have been in use as a garden or yard to other huts in the area during this time. Archaeological remains relating to this could include timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits. Historic soil deposits associated with late 18 th c. horticulture may also be present.	Low
		Structures were known to have been constructed and redeveloped in this area from the mid-19 th c. through to the 1960s. Construction in this area has likely heavily impacted archaeological remains relating to this phase, with any remaining resources likely fragmentary or truncated if present at all.	
Horwood Place road and carpark	Convict huts	A single convict hut is recorded in the 1804 plan, situated on the northern side of the Horwood Place multistorey carpark. Archaeological remains relating to this could include timber posts and postholes, beams and former earthen floor surfaces, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	Low - moderate
		This area was predominantly used as rear yards throughout most of the 19 th and 20 th c., and with the exception of the Horwood Place multistorey carpark this portion of the construction site is mostly hardstand road today. Previous ground excavation has likely truncated or disturbed earlier archaeological deposits although it is likely that more robust structural elements may remain intact below ground.	
	Convict hut yards and gardens	The area surrounding the location of the former convict huts were known to be utilised as small commercial gardens by their residents. Archaeological remains relating to this could include timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits. Historic soil deposits associated with late 18 th c. horticulture may also be present.	Low
		This area was predominantly used as rear yards throughout most of the 19 th and 20 th c., and with the exception of the Horwood Place multistorey carpark this portion of the construction site is mostly hardstand road today. Previous ground excavation has likely truncated or disturbed earlier archaeological deposits although it is likely that buried soil deposits are intact below ground.	

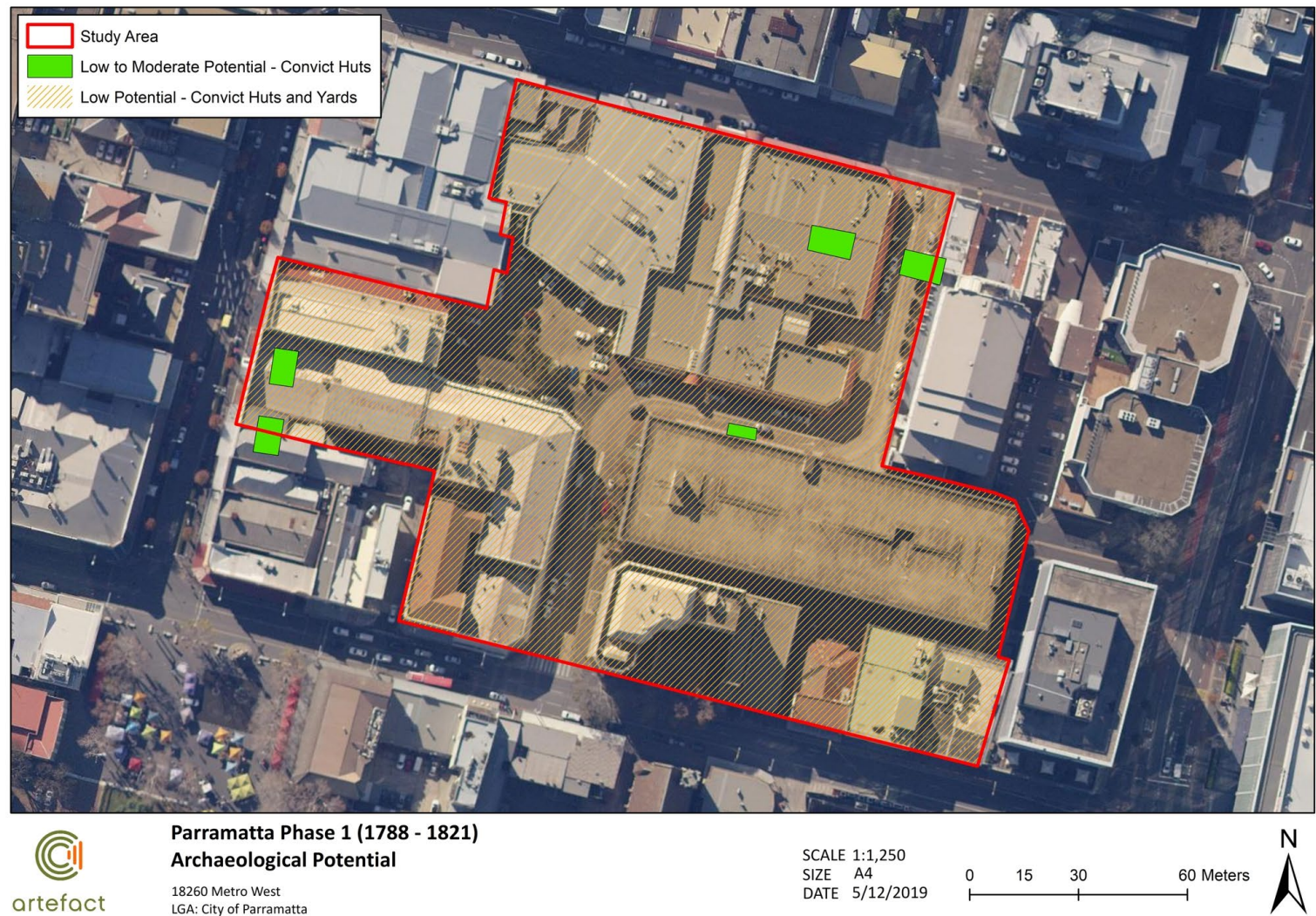


Figure 238: Areas of archaeological potential for Phase 1 (1788 – 1821) at the Parramatta metro station construction site. Convict hut locations determined from Archaeological Zoning Plan figures for 1792

7.3.4.2 Phase 2 (1821 – 1850) – Growth of the Parramatta township

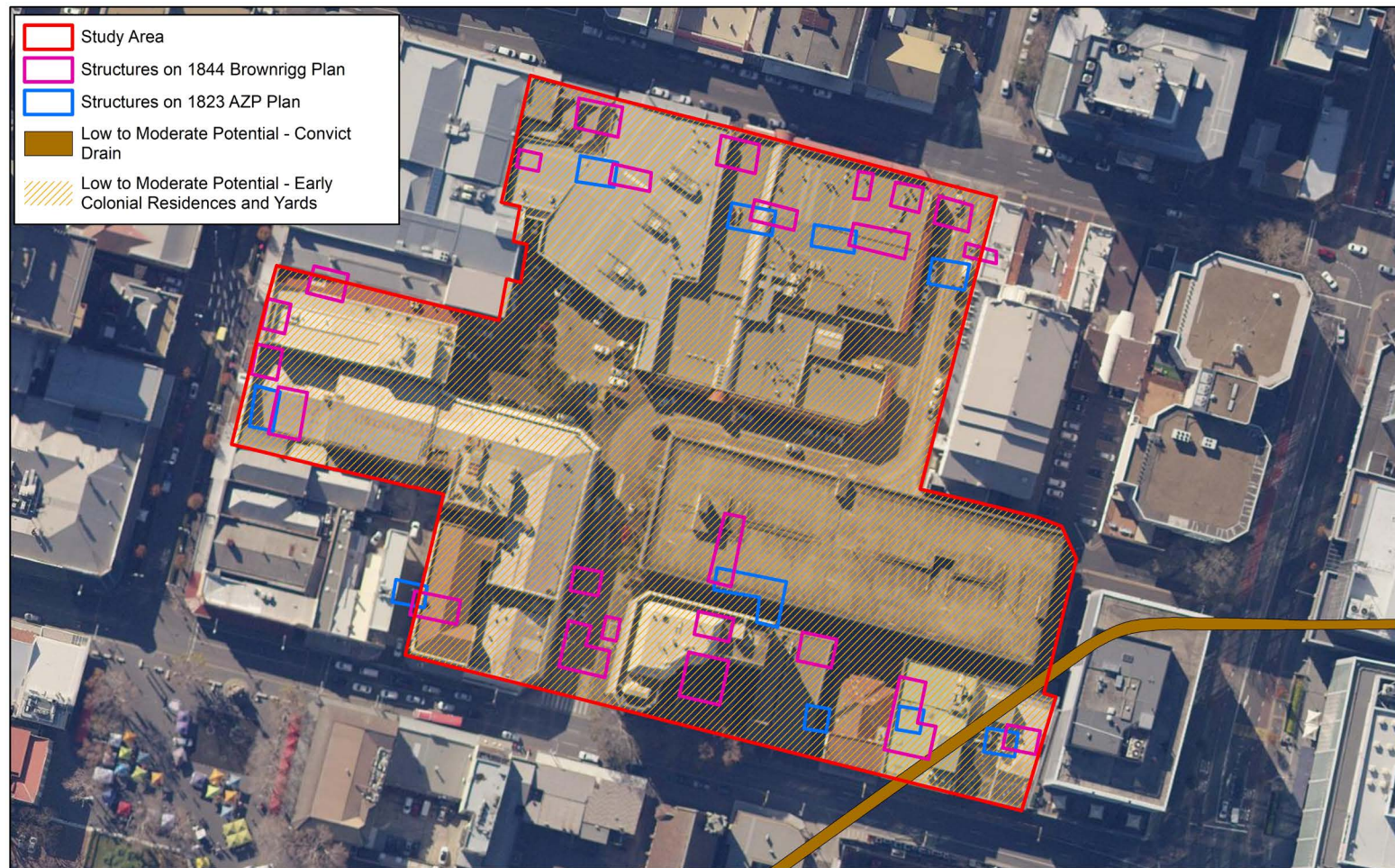
Based on the history of the site and later historical ground disturbance that has occurred within the Parramatta metro station construction site, a summary of predicted archaeological remains during this phase is outlined in Table 75, and the locations of areas of archaeological potential illustrated in Figure 239.

Table 75: Predicted archaeological remains for Phase 2 (1821 – 1850) at the Parramatta metro station construction site

Site area	Site feature	Potential archaeological remains	Potential
Church Street properties	Convict huts and early residences	The replacement of former timber convict huts within the construction site occurred at some point from the 1820s onward. The 1844 survey of Parramatta indicates at least three structures, likely brick, were located within this portion of the construction site. Archaeological remains relating to these deposits could include timber posts and postholes, sandstock brick or stone footings, timber boards and intact underfloor deposits, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	Low-moderate
		Existing structures on Church Street have been developed and redeveloped since the late 19 th c. with limited apparent basement excavation. This construction and reconstruction on the site has likely at least partially disturbed any significant deposits.	
	Residential yards	The small horticultural plots which surrounded the convict huts in the late 18 th c. developed into residential and trades yards in the rear of the properties by the 1840s if not earlier. Archaeological remains relating to residential and possible trades yards could include yard surfaces, timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	
George Street properties		Cisterns, wells and privies are not noted on the 1844 Brownrigg plan however it is likely that outhouses would have been present at that time somewhere in the rear yards. Archaeological remains relating to former wells or privies could include stone or brick lined pits, containing deep artefactual (glass, ceramic, bone) occupation and refuse deposits as well as soil and faecal remains of archaeological interest. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.	Low
	Convict huts and early residences	The replacement of former timber convict huts within the construction site occurred at some point from the 1820s onward. The 1844 survey of Parramatta indicates at least three structures, likely brick, were located within this portion of the construction site. Archaeological remains relating to these deposits could include timber posts and postholes, sandstock brick or stone footings, timber boards and intact underfloor deposits, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	Low-moderate
		Existing structures on George Street have been developed and redeveloped since the late 19 th c, although archaeological investigation conducted during the construction of the current 41 – 59 George Street building did not identify any archaeological remains due to the degree of historical disturbance. It is likely however that remains situated below the shopping plaza at 61 George Street, and in the northern entrance to Horwood Place, are likely less disturbed, and significant deposits may be preserved in these locations.	

Site area	Site feature	Potential archaeological remains	Potential
Macquarie Street properties		The small horticultural plots which surrounded the convict huts in the late 18 th c. developed into residential and trades yards in the rear of the properties by the 1840s if not earlier. Archaeological remains relating to residential and possible trades yards could include yard surfaces, timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	
	Residential yards	Cisterns, wells and privies are not noted on the 1844 Brownrigg plan however it is likely that outhouses would have been present at that time somewhere in the rear yards. Archaeological remains relating to former wells or privies could include stone or brick lined pits, containing deep artefactual (glass, ceramic, bone) occupation and refuse deposits as well as soil and faecal remains of archaeological interest. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.	Low
	Early residences	Historic plans indicate that structures were developed within this area by 1823 and are likely private residences. Archaeological remains relating to these deposits could include timber posts and postholes, sandstock brick or stone footings, timber boards and intact underfloor deposits, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits. Structures were known to have been constructed and redeveloped in this area from the mid-19 th c. through to the 1960s. Construction in this area has likely heavily impacted archaeological remains relating to this phase, with any remaining resources likely fragmentary or truncated if present at all.	Low-moderate
		Rear residential yards, which may have been used for informal trades, would have likely been located surrounding the structure identified in the 1823 plan, as well as structures identified in the 1844 plan. Archaeological remains relating to residential and possible trades yards could include yard surfaces, timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.	
	Residential yards	Cisterns, wells and privies are not noted on the 1844 Brownrigg plan however it is likely that outhouses would have been present at that time somewhere in the rear yards. Archaeological remains relating to former wells or privies could include stone or brick lined pits, containing deep artefactual (glass, ceramic, bone) occupation and refuse deposits as well as soil and faecal remains of archaeological interest. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.	Low
	1820s Drain	A sandstock brick lined drain is known to have been constructed through the far south-eastern corner of the construction site. This item is listed on the Parramatta LEP 2011 as item no. I647 'Convict drain'. A fragment of this drain may be located beneath properties on Macquarie Street. Archaeological remains relating to this drain could include a barrel-vaulted sandstock brick tunnel lining, with accrued artefactual (glass, ceramic, bone) and soil deposits. The degree of intactness of the drain in this location is not known. Remnants of the former convict drain elsewhere in Parramatta have previously been replaced with machine-made brick tunnel lining where the drain has previously failed. Excavation work for construction and renovation of existing buildings along Macquarie Street may have impacted this resource.	Low to Moderate

Site area	Site feature	Potential archaeological remains	Potential
Horwood Place road and carpark	Convict huts and early residences	<p>The replacement of former timber convict huts within the construction site occurred at some point from the 1820s onward. The 1844 survey of Parramatta indicates at a number of structures, likely brick, were located within this portion of the construction site. Archaeological remains relating to these deposits could include timber posts and postholes, sandstock brick or stone footings, timber boards and intact underfloor deposits, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.</p> <p>This area was predominantly used as rear yards throughout most of the 19th and 20th c., and with the exception of the Horwood Place multistorey carpark this portion of the construction site is mostly hardstand road today. Previous ground excavation has likely truncated or disturbed earlier archaeological deposits although it is likely that more robust structural elements may remain intact below ground.</p>	Low-moderate
	Residential yards	<p>The small horticultural plots which surrounded the convict huts in the late 18th c. developed into residential and trades yards in the rear of the properties by the 1840s if not earlier. Archaeological remains relating to residential and possible trades yards could include yard surfaces, timber posts and postholes, fence and informal earthen or stone drains, isolated ceramic, glass, bone, or metal deposits.</p> <p>Cisterns, wells and privies are not noted on the 1844 Brownrigg plan however it is likely that outhouses would have been present at that time somewhere in the rear yards. Archaeological remains relating to former wells or privies could include stone or brick lined pits, containing deep artefactual (glass, ceramic, bone) occupation and refuse deposits as well as soil and faecal remains of archaeological interest. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.</p>	Low
	1820s Drain	<p>A sandstock brick lined drain is known to have been constructed through the far south-eastern corner of the construction site. This item is listed on the Parramatta LEP 2011 as item no. 1647 'Convict drain'. A small fragment of this drain may be located beneath Macquarie Lane. Archaeological remains relating to this drain could include a barrel-vaulted sandstock brick tunnel lining, with accrued artefactual (glass, ceramic, bone) and soil deposits.</p> <p>The degree of intactness of the drain in this location is not known. Remnants of the former convict drain elsewhere in Parramatta have previously been replaced with machine-made brick tunnel lining where the drain has previously failed. Excavation work for road construction in Macquarie Lane, as well as construction work to create the current 25 Smith Street Parramatta building, may have impacted the resource.</p>	Low to Moderate



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Parramatta Phase 2 (1821 - 1850)
Archaeological Potential

18260 Metro West
LGA: Parramatta

SCALE 1:1,250
SIZE A4
DATE 5/12/2019

0 15 30 60 Meters



Figure 239: Areas of archaeological potential for Phase 2 (1821 – 1850) at the Parramatta metro station construction site

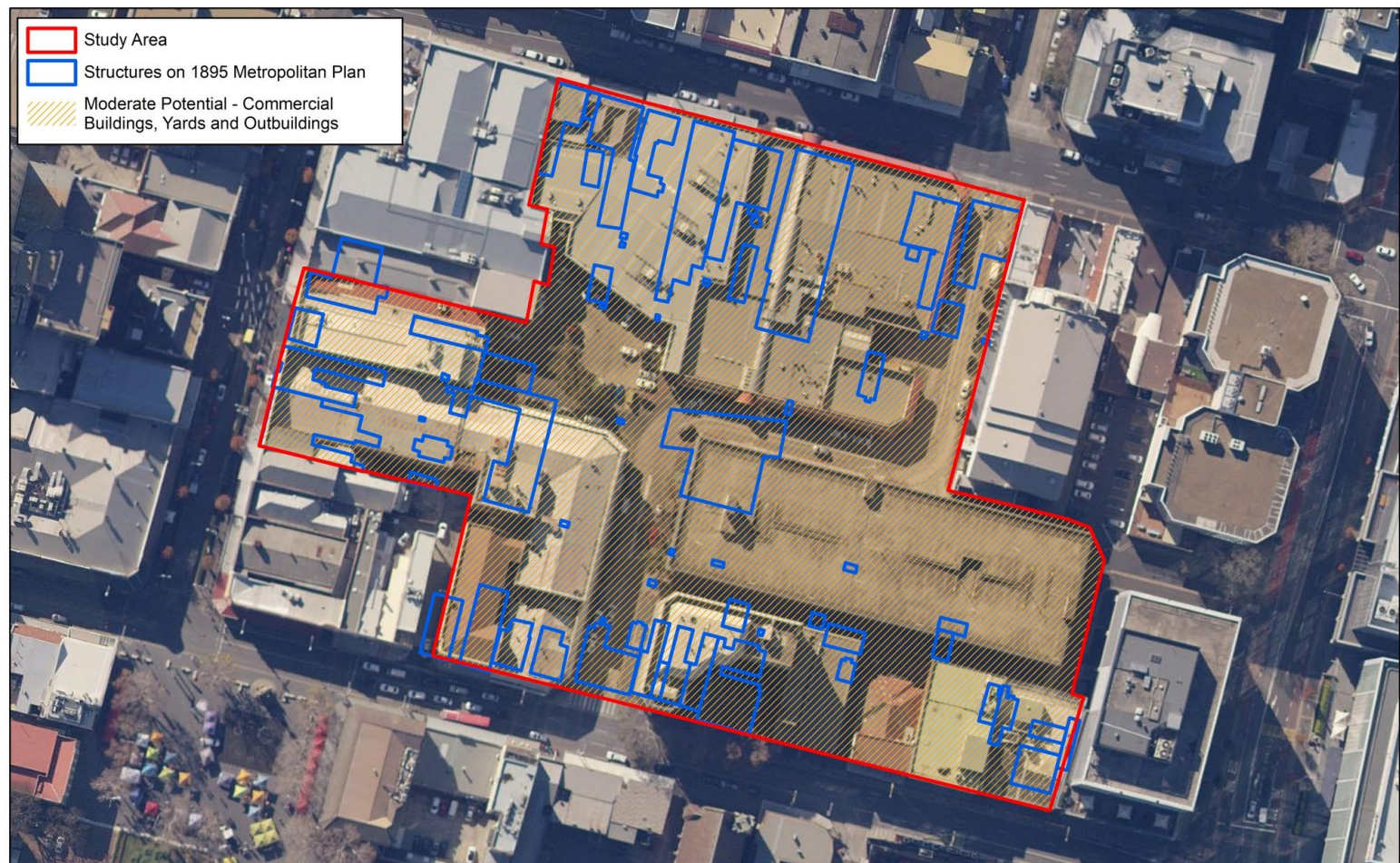
7.3.4.3 Phase 3 (1850 – 1900) – Late nineteenth century commercial development.

Based on the history of the site and later historical ground disturbance that has occurred within the Parramatta metro station construction site, a summary of predicted archaeological remains during this phase is outlined in Table 76, and the locations of areas of archaeological potential illustrated in Figure 240.

Table 76: Predicted archaeological remains for Phase 3 (1850 – 1900) at the Parramatta metro station construction site

Site area	Site feature	Potential archaeological remains	Potential
Church Street properties	Commercial structures	Brick one- and two-storey commercial premises were incrementally developed over the course of the late 19 th c. Archaeological remains related to these former commercial buildings could include brick and stone footings, timber boards and intact underfloor deposits, ceramic pipes, brick or stone lined drains, isolated ceramic, glass, bone, or metal deposits.	
		Existing structures on Church Street have been developed and redeveloped since this phase, however the current building at 220 Church Street is likely the same structure present in the 1895 plan. Even those buildings which have been removed for later development are likely to be materially more robust than preceding timber and itinerant structures and the preservation of archaeological remains related to these structures is considered likely.	Moderate
	Commercial rear yards and outbuildings	Commercial premises on Church Street in the late-19 th c. were predominantly mercantile and not industrial in nature (tailors, chemists, drapers, tobacconists) and working yards are not expected to be located behind the buildings on this site. However, a number of smaller sheds, storehouses and outhouses are visible on 1890s plans of the area. Reticulated sewerage services were only provided to the Parramatta area after 1898. Archaeological remains relating to these structures could include brick footings, timber postholes and posts, ceramic drains, and isolated artefact deposits. Former privies or wells could contain deep stone or brick lined cesspits or wells containing occupation or discarded artefactual (glass, ceramic, bone) material and soil deposits. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.	Moderate
George Street properties	Commercial structures	Brick one- and two-storey commercial premises were incrementally developed over the course of the late 19 th c. A theatre (the Victoria Theatre) was in operation by at least 1884. Archaeological remains related to these former commercial buildings could include brick and stone footings, timber boards and intact underfloor deposits, ceramic pipes, brick or stone lined drains, isolated ceramic, glass, bone, or metal deposits.	Moderate
		With the exception of remains that would have underlain the 41 – 59 George Street property, it is likely that at least truncated structural remains associated with these former buildings would remain in the construction site.	

Site area	Site feature	Potential archaeological remains	Potential
Macquarie Street properties	Commercial and industrial rear yards and outbuildings	<p>Commercial premises on George Street in the late-19th c. were mercantile and industrial (Victoria Theatre, blacksmiths, pawnbrokers) with some remnants of industrial yards potentially present on the site. In addition, a number of smaller sheds, storehouses and outhouses are visible on 1890s plans of the area. Reticulated sewerage services were only provided to the Parramatta area from the 1880s onward.</p> <p>Archaeological remains relating to these structures could include brick footings, timber postholes and posts, ceramic drains, and isolated artefact deposits. Industrial yards could leave archaeological remains including metal and timber machines and equipment, metal and industrial slag and former yard surfaces. Former privies or wells could contain deep stone or brick lined cesspits or wells containing occupation or discarded artefactual (glass, ceramic, bone) material and soil deposits. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.</p>	Moderate
	Commercial structures	<p>Brick one- and two-storey commercial premises were incrementally developed over the course of the late 19th c. Archaeological remains related to these former commercial buildings could include brick and stone footings, timber boards and intact underfloor deposits, ceramic pipes, brick or stone lined drains, isolated ceramic, glass, bone, or metal deposits.</p> <p>Extant buildings located on the Macquarie Street frontage may not have significant basements and archaeological evidence from the former late-Victorian buildings in this area may be significantly preserved.</p>	Moderate
	Commercial rear yards and outbuildings	<p>Commercial premises on Macquarie Street in the late-19th c. were predominantly mercantile and not industrial in nature (auctioneers, surgeons, dressmakers, bootmakers) and working yards are not expected to be located behind the buildings on this site. However, a number of smaller sheds, storehouses and outhouses are visible on 1890s plans of the area. Reticulated sewerage services were only provided to the Parramatta area from the 1880s onward.</p> <p>Archaeological remains relating to these structures could include brick footings, timber postholes and posts, ceramic drains, and isolated artefact deposits. Former privies or wells could contain deep stone or brick lined cesspits or wells containing occupation or discarded artefactual (glass, ceramic, bone) material and soil deposits. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.</p>	Moderate
Horwood Place Road and carpark	Commercial rear yards and outbuildings	<p>This portion of the construction site was located in the rear yards of commercial properties on George Street and Macquarie Street, and several large sheds and structures are apparent on the 1895 plan. Outhouses and privies are also visible on this plan. Reticulated sewerage services were only provided to the Parramatta area from the 1880s onward.</p> <p>Archaeological remains relating to these structures could include brick footings, timber postholes and posts, ceramic drains, and isolated artefact deposits. Former privies or wells could contain deep stone or brick lined cesspits or wells containing occupation or discarded artefactual (glass, ceramic, bone) material and soil deposits. The depth of these potential deposits also suggest that they could be preserved below later building and basement construction.</p>	Moderate



Parramatta Phase 3 (1850 - 1900)
Archaeological Potential

18260 Metro West
LGA: Parramatta

SCALE 1:1,250
SIZE A4
DATE 5/12/2019

0 15 30 60 Meters



Figure 240: Areas of archaeological potential for Phase 3 (1850 – 1900) at the Parramatta metro station construction site

7.3.4.4 Phase 4 (1900 – Present) – Twentieth century Parramatta.

Based on the history of the site and later historical ground disturbance that has occurred within the Parramatta metro station construction site, a summary of predicted subsurface remains during this phase is outlined in Table 77.

Archaeological remains related to this phase of occupation are unlikely to reach the threshold for local heritage significance and this prediction of subsurface material from this phase is provided as a summary of past ground disturbing events in the construction site.

Table 77: Predicted archaeological remains for Phase 4 (1900 – Present) at the Parramatta metro station construction site

Site Feature	Potential archaeological remains	Potential
Early twentieth century structures	A number of commercial buildings present on the 1895 plan are still present in the construction site in 1930. However, aerial imagery from 1961 and 1970 indicates that several new buildings are constructed on consolidated lots within the construction site, several buildings of which are still present today. Archaeological remains related to former structures from this phase within the construction site is likely to persist below modern structures which do not have basements. Archaeological remains relating to this phase could include: brick and concrete footings and subfloor walls; ceramic pipes and services; demolition waste, rubble and fill; twentieth century discarded artefact deposits (glass, ceramic, plastic, metal).	Moderate to High
Mid-twentieth century rear yards	Many of the rear yards of commercial properties throughout the twentieth century remained open up until the laying of Horwood Place in the 1950s and the construction of the Horwood Place carpark in the 1980s. Yard areas were predominantly used for storing material, out sheds, carparks and loading bays. Archaeological remains related to this phase could include former asphalt, bitumen and concrete surfaces, concrete and brick footings and kerbs, garden plantings, isolated artefact deposits.	Moderate
Road surfacing	Horwood Place was constructed through the centre of the construction site in the 1950s, and the rear yards of the properties were expanded into open carparks from this time onwards. Subsurface remains relating to this phase could include asphalt, bitumen and concrete surfaces, trachyte and concrete kerbing, road base and gravel subgrades, redeposited local soil and clean sand, isolated modern artefact deposits (plastic, glass, ceramic, metal).	High
Utility installation	Subsurface utility services are common throughout the construction site. Archaeological remains related to these would include metal, ceramic and plastic pipes, protective brick structures, redeposited local soil and clean sand, isolated modern artefact deposits (plastic, glass, ceramic, metal).	High

7.3.5 Assessment of archaeological significance

Assessments of archaeological significance for the Parramatta metro station construction site have been divided by historical phase, for clarity of discussion, in the subsections below. Significance assessments have been prepared according to the methodology outlined in section 7.1 of this report.

7.3.5.1 Significance of predicted archaeological remains for Parramatta site Phase 1 (1788 – 1821)

Table 78 provides a discussion of the potential significance of archaeological remains that may be located within the Parramatta metro station construction site for Phase 1 of the European history of the site.

Table 78: Assessment of significance for Phase 1 (1788 – 1821) archaeological remains at the Parramatta construction site

Criteria	Discussion
Research potential	<p>The material conditions and lifeways of the first European inhabitants of Parramatta are not comprehensively documented in historical records of the early colony. While documentary evidence suggests the location of former convict hut structures and gardens, their exact spatial location is not precisely known. Intact archaeological remains relating to these structures and the surrounding gardens could answer a wide array of research questions associated with domestic and industrial practices of convicts, material conditions of life in the early colony, questions of diet and subsistence, interactions between new settlers and the original Aboriginal inhabitants, palaeoecological questions in regard to floral regimes in Parramatta, evidence of hierarchy and social change within the early penal structure of the colony. This list of potential research interests from the archaeological remains is not exhaustive and would be further developed during later archaeological investigative stages.</p> <p>Intact archaeological remains relating to the first settlement of Parramatta are of exceptional research potential and are a unique source of information which is not available from other documentary sources of evidence.</p>
Association with individuals, events or groups of historical importance	<p>Archaeological remains relating to this phase of occupation in Parramatta are strongly associated with the founding of the Parramatta colony, the development of the first viable agricultural farms in Australia, convict settlement in New South Wales, and with specific emancipists and free settlers who lived there.</p>
Aesthetic or technical significance	<p>Intact archaeological remains relating to this phase of occupation in Parramatta could provide information on the early and ad hoc construction techniques of architecture during the first settlement of Parramatta. Artefactual domestic material would be of technical value in providing evidence of adaptation to the materially poor environment of the early colony.</p>
Ability to demonstrate the past through archaeological remains	<p>Structural, artefactual and paleoenvironmental remains from this phase of occupation would be strongly demonstrative of the first convict settlement of Parramatta and can show the ways in which the incarcerated settlers adapted to the new Australian environment within the institutional confines of the transportation system.</p>
Statement of Significance	<p>Archaeological remains relating to the convict accommodation and horticulture in Parramatta is of State significance. Intact archaeological resources would be of exceptional research value, strongly demonstrative of past practices, of technical and demonstrative value. Intact archaeological resources relating to this phase of occupation are a highly rare and unique resource.</p>

7.3.5.2 Significance of predicted archaeological remains for Parramatta site Phase 2 (1821 – 1850)

Table 79 provides a discussion of the potential significance of archaeological remains that may be located within the Parramatta metro station construction site for Phase 2 of the European history of the site.

Table 79: Assessment of significance for Phase 2 (1821 - 1850) archaeological remains at the Parramatta metro station construction site

Criteria	Discussion
Research potential	<p>The redevelopment of residential accommodation and the first commercial developments in Parramatta, prior to 1850, are not well understood. The continuation of lease-holding in the construction site led to a relatively slow development in the improvement of structures in the area. Due to inconsistencies with lease-holding arrangements, the identity of individuals residing at premises within the construction site during this time is not well known.</p> <p>Archaeological remains relating to this phase within the construction site would be of high research value in providing information on the identity of settlers who occupied Parramatta, information on their material domestic practices and lifeways, and evidence of trades and industrial practices.</p>
Association with individuals, events or groups of historical importance	<p>Archaeological remains relating to this phase of occupation in Parramatta are associated with the residences of emancipist settlers and material remains may provide more information on the identity and material culture of these people during this time.</p>
Aesthetic or technical significance	<p>Intact archaeological remains relating to this historical phase in Parramatta could provide technical information on the architectural development of settler housing and land use as the area was incrementally developed.</p>
Ability to demonstrate the past through archaeological remains	<p>Structural, artefactual and paleoenvironmental remains from this phase of occupation would be broadly demonstrative of the early municipal development of Parramatta.</p>
Statement of Significance	<p>Archaeological remains relating to this historical phase would likely be of Local to State significance, depending on the intactness of remains, in their ability to demonstrate the beginning of the free settler / emancipist commercial and residential development of Parramatta.</p>

**7.3.5.3 Significance of predicted archaeological remains for Parramatta metro station
construction site Phase 3 (1850 – 1900)**

Table 76 provides a discussion of the potential significance of archaeological remains that may be located within the Parramatta metro station construction site for Phase 3 of the European history of the site.

Table 80: Assessment of significance for Phase 3 (1850 - 1900) archaeological remains at the Parramatta metro station construction site

Criteria	Discussion
Research potential	Archaeological remains related to this phase of occupation would answer a limited array of research inquiries, due to the profusion of documentary evidentiary sources which are available for Parramatta at this time. Archaeological remains would be considered of low research value from this historical phase.
Association with individuals, events or groups of historical importance	Material remains for this historical phase at the Parramatta metro station construction site are not strongly associated with historically notable social groups or individuals.
Aesthetic or technical significance	Structural and artefactual remains related to this historical phase are considered historically and archeologically common and would not likely reach the threshold for significance under this criterion.
Ability to demonstrate the past through archaeological remains	Archaeological remains related to this phase would be broadly demonstrative of the commercial growth of Parramatta in the late nineteenth century. Substantially intact commercial and industrial remains would also be demonstrative of commercial and industrial practices for the Municipality of Parramatta.
Statement of Significance	Substantial archaeological remains from this historical phase may be of local heritage significance depending on their degree of intactness, for their demonstrative potential to illustrate late-Victorian commercial and industrial practices of the Municipality of Parramatta.

7.3.5.4 Significance of predicted archaeological remains for Parramatta metro station construction site Phase 4 (1900 – Present)

Table 81 provides a discussion of the potential significance of archaeological remains that may be located within the Parramatta metro station construction site for Phase 4 of the European history of the site.

Table 81: Assessment of significance for Phase 4 (1900 – Present) archaeological remains at the Parramatta metro station construction site

Criteria	Discussion
Research potential	Subsurface remains relating to the twentieth century commercial redevelopment of Parramatta are well attested in documentary records and are considered a ubiquitous material resource throughout NSW. As such, subsurface archaeological remains related to this phase are not a unique resource and would not answer substantive historical research inquiries.
Association with individuals, events or groups of historical importance	Material remains for this historical phase at the Parramatta metro station construction site are not strongly associated with historically notable social groups or individuals.
Aesthetic or technical significance	Buried subsurface remains of this phase of occupation would not provide new or unique information on technical or construction practices and is not considered significant against this criterion.
Ability to demonstrate the past through archaeological remains	Archaeological remnants of twentieth century commercial and civic construction and redevelopment would not be strongly demonstrative of past practices or historical events.
Statement of Significance	Subsurface remains relating to this phase of occupation would be demonstrative of twentieth century structural remnants and utility services. These remains are a common subsurface resource and would not satisfy historical research questions. Archaeological remains from this phase would not reach the threshold for local significance.

7.3.6 PHALMS listings and discussion

The Parramatta construction site is located across four listed PAMUs, which are discussed in the subsections below. The location of these PAMUs is illustrated in Figure 241.

7.3.6.1 PAMU 2873

PAMU 2873 is located in the north-western portion of the Parramatta construction site. This PAMU has the following provided description: ²¹⁴

This AMU has no current archaeological research potential.

This area was part of the early Rose Hill settlement and the commercial centre of Parramatta through the convict and colonial periods to the present day.

The physical archaeological evidence within this area is unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

Archaeological evidence at this site is likely to have been totally removed.

This AMU has no archaeological significance.

The PAMU for this area is largely located below the current gym-building located at 41 – 59 George Street, and the designation of no archaeological remains in this area has been based on monitoring excavation conducted during some of the construction of the present building.

This archaeological assessment has not assumed that the degree of disturbance within this building footprint is as widespread across the site as the PAMU has specified. The archaeological potential for remains underneath this building footprint have been categorised as Nil to Low, with the possibility that small localised areas may still be intact. This would be further confirmed during later stages of assessment when accurate basement information is provided.

7.3.6.2 PAMU 3075

PAMU 3075 is located across the majority of the Parramatta construction site, with the exception of the south-eastern portion and a small area on George Street. This PAMU has the following provided description: ²¹⁵

This AMU has exceptional archaeological research potential.

This area was part of the early Rose Hill settlement and the commercial centre of Parramatta through the convict and colonial periods to the present day.

The physical archaeological evidence within this area may include built landforms, structural features, intact subfloor deposits, open deposits and scatters, ecological samples and individual artefacts which have potential to yield information relating to major historic themes including Commerce, Convicts, Cultural Sites, Government and Administration, Housing, Land Tenure, Law and Order, Labour and Townships.

Archaeological evidence at this site is likely to be subject to minor disturbance.

This AMU is of State significance.

²¹⁴ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2873*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242873>

²¹⁵ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 3075*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2243075>

This archaeological assessment corroborates the statement of significance from the PAMU description. The PAMU entry also recommends archaeological excavation associated with any ground disturbing work in this area, which this assessment also corroborates.

7.3.6.3 PAMU 3177

PAMU 3177 is located in the area of ground within the construction site which correlates with the Horwood Place multistorey carpark. This PAMU has the following provided description: ²¹⁶

This AMU has no current archaeological research potential.

This area was part of the early Rose Hill settlement and the commercial centre of Parramatta through the convict and colonial periods to the present day. The Roxy Cinema was constructed within the area in 1930 and the rest of the area was redeveloped as a multi-storey carpark in the 1980s.

The physical archaeological evidence within this area is unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

Archaeological evidence at this site is likely to be totally removed.

This AMU has no archaeological significance.

This archaeological assessment has not assumed that the total degree of disturbance caused by the construction of Horwood Place carpark would have entirely removed potential deep deposits (such as cesspits or wells) and that buried historical soils may still be situated below ground. The archaeological potential for remains underneath this building footprint have been categorised as Nil to Low, with the possibility that small localised areas may still be intact. This would be further confirmed during later stages of assessment when accurate basement information is provided.

7.3.6.4 PAMU 3178

PAMU 3178 is located in an area of ground coinciding with Macquarie Lane and extended south through to Macquarie Street, on the south-eastern edge of the Parramatta metro station construction site. This PAMU has the following provided description: ²¹⁷

This AMU has high archaeological research potential.

This area was part of the early Rose Hill settlement and the commercial centre of Parramatta through the convict and colonial periods to the present day.

The physical archaeological evidence within this area may include built landforms, structural features, intact subfloor deposits, open deposits and scatters, ecological samples and individual artefact which have potential to yield information relating to major historic themes including Commerce, Convicts, Cultural Sites, Government and Administration, Housing, Land Tenure, Law and Order and Persons.

Archaeological evidence at this site is likely to have been subject to minor disturbance.

²¹⁶ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 3177*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2243177>

²¹⁷ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 3178*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2243178>

This AMU is of State significance. Archaeological evidence at this site is likely to be subject to minor disturbance.

This AMU is of State significance.

This archaeological assessment corroborates the statement of significance from the PAMU description. The PAMU entry also recommends archaeological excavation associated with any ground disturbing work in this area, which this assessment also corroborates.

7.3.6.5 PAMU 3180

PAMU 3180 is located in an area correlating with the current building of 58 – 60 Macquarie Street, a multistorey commercial block which has basement levels. This PAMU has the following provided description: ²¹⁸

This AMU has no current archaeological research potential.

This area was part of the early Rose Hill settlement and the commercial centre of Parramatta through the convict and colonial periods to the present day.

The physical archaeological evidence within this area is unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

Archaeological evidence at this site is likely to be totally removed.

This AMU has no archaeological significance.

This archaeological assessment provisionally corroborates the statement of significance from the PAMU description, pending confirmation of final building basement depths which, if shallower than expected, may not have impacted deep archaeological deposits (wells, privies or cisterns) entirely.

7.3.6.6 PAMU 3181

PAMU 3181 is located in an area correlating with the current buildings at 70 Macquarie Street and 72 Macquarie Street, on the southern margin of the Parramatta metro station construction site. The 70 Macquarie Street building consists of two structures, with the street-facing structure a modern multistorey commercial building (with likely basements), however the rear of the property is an early twentieth century two storey building which may not have basement levels. The building at 72 Macquarie Street is a multistorey commercial building with likely basements.

²¹⁸ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 3180*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2243180>

This PAMU has the following provided description:²¹⁹

This AMU has no current archaeological research potential.

This area was part of the early Rose Hill settlement and the commercial centre of Parramatta through the convict and colonial periods to the present day.

The physical archaeological evidence within this area is unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

Archaeological evidence at this site is likely to be totally removed.

This AMU has no archaeological significance.

This archaeological assessment supports the statement of significance from the PAMU description for the property at 72 Macquarie Street and the street-facing building at 70 Macquarie Street. The early twentieth century building behind the street frontage at 70 Macquarie Street is not likely to have had basement excavation, and archaeological features may be preserved below this building. Pending detailed investigation on the depth and extent of basement levels at these properties, it is likely that deeper or isolated archaeological remains are preserved within the boundaries of this PAMU.

²¹⁹ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 3181*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2243181>



Document Path: D:\GIS\GIS_Mapping\18260_Sydney_Metro_West\PROJECT\Parramatta_archmaps\Parramatta_PHALMS.mxd



**PHALMS Archaeological Management Units
Parramatta Study Area**

18260 Metro West
LGA: Parramatta

SCALE 1:1,250
SIZE A4
DATE 5/12/2019

0 15 30 60 Meters



Figure 241: PHALMS AMU within the Parramatta metro station construction site

7.3.7 Summary of archaeological potential and significance

A summary of significant potential archaeological deposits that may remain within the Parramatta metro station construction site is provided in Table 82. Areas of significant archaeological potential are illustrated in Figure 242 and Figure 243.

Table 82: Summary of significant potential archaeological deposits in the Parramatta metro station construction site

Phase	Site feature and potential archaeological remains	Potential	Significance
Phase 1 (1788 – 1821)	Convict huts, yards and gardens – remains include timber posts and postholes, earthen floor surfaces, informal drains, buried historical soil deposits, isolated artefact deposits (bone, glass, metal, ceramic, stone).	Low and Low to Moderate	State
Phase 2 (1821 – 1850)	Early colonial residences and yards – remains included timber posts and postholes, sandstock brick or stone footings, timber boards and underfloor artefact deposits, fence and informal earthen or stone drains and kerbs, former yard surfaces, deep well and privy refuse deposits, buried historical soils, and isolated artefact deposits (bone, glass, metal, ceramic, stone).	Low to Moderate	Local to State
	Convict drain – remains include sandstock brick lined barrel drain or later machine-pressed brick drain repairs, infilled artefact and soil deposits.	Low to Moderate	Local
Phase 3 (1850 – 1900)	Commercial buildings, rear yards and outbuildings - brick footings, timber postholes and posts, ceramic drains, fence and informal earthen or stone drains and kerbs, former yard surfaces, industrial debris and slag, deep well and privy refuse deposits, buried historical soils, and isolated artefact deposits (bone, glass, metal, ceramic, stone).	Moderate	May reach the threshold for local significance depending on intactness



**Parramatta Potential for State
Significant Archaeological Remains**

18260 Metro West
LGA: Parramatta

SCALE 1:1,250
SIZE A4
DATE 5/12/2019

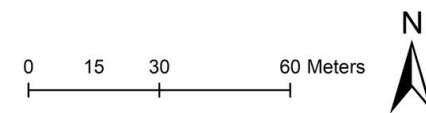


Figure 242: Areas of State significant archaeological potential in the Parramatta metro station construction site

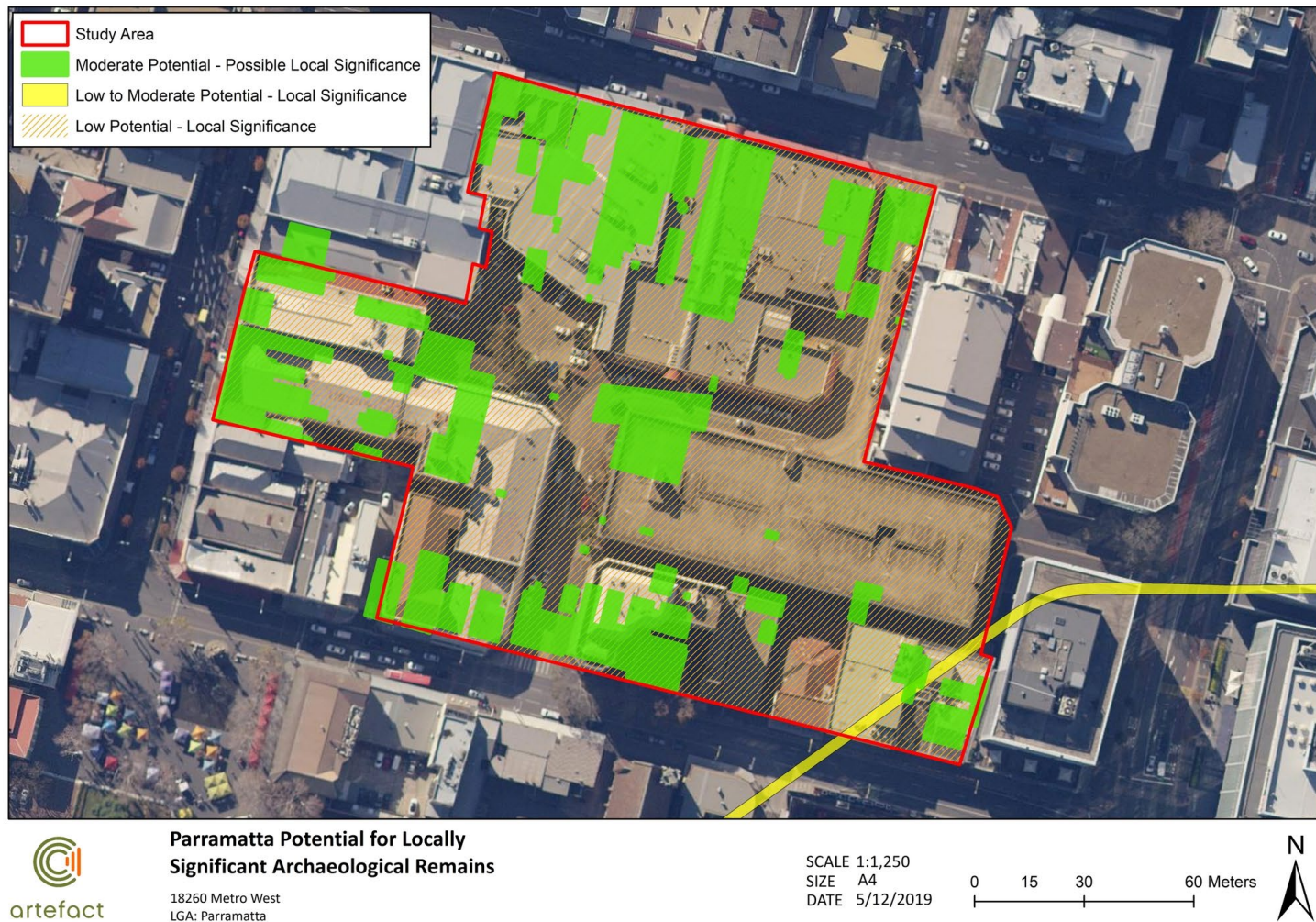


Figure 243: Areas of locally significant archaeological potential in the Parramatta metro station construction site

7.3.8 Comparative analysis of significant archaeological resources in Parramatta

Convict accommodation huts constructed in Parramatta in the 1790s are considered a rare archaeological resource. These former convict structures from this period were only constructed in Parramatta and in the northern section of the Sydney CBD. Of the latter, it is unlikely that any substantially remain intact subsurface due to the robust developmental history of Sydney compared to Parramatta. Regardless, information on the material conditions of convict life during the early colony are historically scarce, and archaeological investigation of subsurface material remains of these huts has yielded valuable research data. Because of this, archaeological remains of convict huts are considered a rare archaeological resource, not likely to be substantially found anywhere in Australia outside of the Parramatta area.

Archaeological investigations have recovered a number of convict huts since development-led archaeology was conducted in Parramatta from the 1980s. These excavations have shown that the archaeological remains of the convict huts are often materially fragile, with limited easily identifiable structural remains and dispersed artefact deposits at these sites. Archaeological investigation revealed that these resources have frequently been impacted by later building development, even where deep basement excavations has not been present on the site.

The 1792 plan of Parramatta records 77 convict huts located within the settlement at that time. Archaeological excavation has indicated that, where convict huts have still been present, the mapping location data has been reasonably accurate compared to their final physical location. A preliminary estimate of archaeological excavations in Parramatta conducted to date indicates that approximately 12 per cent of the convict huts recorded in 1792 have been previously archaeological salvaged.

Based on modern aerial imagery and the locations of major commercial structures, it is estimated that approximately 70 per cent of the convict huts recorded in the 1792 plan have likely been destroyed (not including those which were archaeologically salvaged during construction). Based on these preliminary figures, it is estimated that approximately 18 per cent of the convict huts may remain subsurface, in some degree of intactness.

A number of these preserved convict huts would be located below the likely shallow footings of existing structures in Parramatta which were constructed in the nineteenth century. Many of these buildings are listed on statutory heritage registers, including the State Heritage Register, and it is considered unlikely that these structures would be removed for future development. As such, the number of convict huts which may be materially present in Parramatta, and that may be available for potential archaeological research, is estimated as roughly 10 per cent of the total original resource.

7.3.9 Archaeological impact assessment

Ground disturbance at the Parramatta metro station construction site would be across the construction site, with all existing buildings and street surfaces removed with the exception of the preservation of the heritage-listed structure at 45 George Street and Kia Ora House at 64 Macquarie Street. The area of deep excavation would occur at the station excavation. Elsewhere, the ground surface below the buildings and structures would be stripped following building and surface demolition, involving the removal of all rippable subsurface materials.

This ground disturbance would result in a major impact to all significant archaeological resources across the construction site. Other ground-disturbing enabling works across the site should be archaeologically monitored where possible.

7.3.10 Mitigation and management measures

Archaeological remains located at the Parramatta metro station construction site represent a highly significant and rare deposit of high research value. Further robust archaeological investigation would be conducted prior to the commencement of works. A range of archaeological excavation tasks would be required to effectively manage and understand the resource prior to the bulk levelling and excavation across the site.

An Archaeological Research Design (ARD) for the Parramatta metro station construction site would be prepared. As State significant archaeological resources have been identified at the Parramatta metro station construction site, an Excavation Director (who fulfils the relevant NSW Heritage Council criteria for State significant excavation experience) would prepare this ARD report. The ARD report would require the following tasks and information:

- A detailed non-destructive survey of subsurface utility services and building basements, measured in absolute elevation (RL), across the whole of the site
- Detailed historical and archival research to provide ownership and occupancy histories of all former allotments within the site throughout the eighteenth and nineteenth centuries
- The preparation of a detailed archaeological research agenda, including historically pertinent questions to be interrogated by the archaeological resources
- A detailed archaeological excavation methodology for all ground disturbing works across the whole of the site
- Opportunities for public heritage interpretation of potential archaeological excavation and resources outlined.

Archaeological excavation would be required to investigate all significant potential archaeological resources. This would likely require combined archaeological testing and open area salvage excavation across large portions of the site. Archaeological remains related to the earliest founding of the colony are considered particularly rare, and while the potential for the recovery of intact remains related to early convict huts is considered low, less comprehensive archaeological excavation techniques (such as machine monitoring) would be less likely to identify discrete eighteenth century remains due to the possible fragility and dispersed distribution of these remains.

Archaeological remains related to the British settlement of the Parramatta colony are also likely to directly overlay, or potentially abut, archaeological remains associated with Aboriginal use and occupation of the area. Aboriginal and European interaction in the Parramatta area is historically well-attested and the potential for the recovery of material evidence of this interaction would be considered. In this regard, methodologies in the ARD for the excavation of archaeological remains relating to the British settlement of Parramatta would be considered in conjunction with Aboriginal archaeological investigation and excavation, which is likely to occur concurrently.

While the demolition of existing above-ground structures on the site may not impact archaeological resources directly, the excavation of existing basements and the uplifting of existing concrete and floor slabs would be archaeologically monitored, if not actively incorporated into a wider archaeological excavation program.

7.4 Clyde stabling and maintenance facility

The historical development of the Clyde stabling and maintenance facility construction site has been divided into the following historical phases of activity for this assessment:

- Phase 1 (1796 – 1872): Early agricultural land grants. John Macarthur was granted his first 100 acres of land in the Parramatta area in 1796, which included the area within the Clyde stabling and maintenance facility construction site to the north of Duck Creek. The area to the south of Duck Creek was originally granted to James Smith in 1818 but was later apportioned by William Charles Wentworth. Neither landowner significantly developed this portion of their properties, and the area to the north and south of Duck Creek and A'Becketts Creek, was used largely for pasturage during this time
- Phase 2 (1872 – 1925): Residential subdivision of early estates and railway construction. After Wentworth's death in 1872, the area to the south of Duck Creek and A'Becketts Creek was proposed to be subdivided for residential sale, however apart from unsealed roads, no known development occurred in this area during this time. Macarthur's land, north of Duck Creek, was put up for subdivision in 1883, however the portion of Macarthur's grant within the Clyde stabling and maintenance facility construction site area does not seem to have been developed, with the majority of allotments sold in areas to the west of what is now James Ruse Drive. The T6 Carlingford railway line was constructed through the western portion of the Clyde stabling and maintenance facility construction site in 1885
- Phase 3: (1925 – Present): Clyde Showground and industrial development. A thirty acre area south of Duck Creek was resumed in 1925 for establishment of the Granville Showground. The showground was modified into the Parramatta City Raceway, for motor vehicle events, in 1977. Several residences are present in the construction site to the west of Duck Creek, south of A'Becketts Creek. The Main Roads Board used an area to the north of Duck Creek prior to 1940, with the main depot building constructed in 1944. Industrial development surrounding the depot occurred from the 1960s onward and continues in that use today.

7.4.1 Previous impacts

The Clyde stabling and maintenance facility construction site has been largely developed as an industrial and commercial area since the 1940s. With the exception of areas immediately to the west of the railway line and in the grassed areas surrounding the Sydney Speedway, it is presumed that a moderate degree of ground disturbance would have been caused by industrial development.

7.4.2 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within the Clyde stabling and maintenance facility construction site, the potential for the identification of archaeological remains is predicted in Table 83.

Table 83: Predicted archaeological remains and potential at Clyde stabling and maintenance facility construction site

Phase	Area	Site feature	Potential archaeological remains	Potential
Phase 1 (1796 – 1872)	North of Duck Creek	Land clearing, informal grazing	While part of the wider 'Elizabeth Farm' land grant from the early 19 th c. the construction site was not known to have been utilised for activity beyond animal grazing. Archaeological remains associated with informal animal grazing could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. However, the subsequent ground disturbance caused by the construction and use industrial facilities in the construction site would have likely completed removed any evidence of these relatively ephemeral remains.	Nil
	South of Duck Creek	Land clearing, informal grazing	This area was located within James Smith's and then William Charles Wentworth's land grant, but the construction site was not known to have been utilised for activity beyond animal grazing. Archaeological remains associated with informal animal grazing could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. However, the subsequent ground disturbance caused by the construction and use of industrial facilities and the speedway within the construction site would have likely completed removed any evidence of these relatively ephemeral remains.	Nil
Phase 2 (1872 – 1925)	North of Duck Creek	Informal grazing and farming	While Elizabeth Farm was subdivided in the 1880s, the portion of the estate to the east of what is now James Ruse Drive was not known to have been developed. The land likely continued in use for grazing or farming. Archaeological remains associated with informal animal grazing could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters, although the ephemerality of these remains preclude their likely preservation with the extent of later industrial development in the area.	Nil
	South of Duck Creek	Informal grazing and farming	While this area was subdivided for sale in the 1870s, there is no evidence that any lots were purchased and developed from the sale of Wentworth's Estate to the north of Martha Street. The land likely continued in use for grazing or farming. Archaeological remains associated with informal animal grazing could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters, although the ephemerality of these remains preclude their likely preservation with the extent of later industrial development in the area.	Nil
Phase 3 (1925 – Present)	North of Duck Creek	RTA depot and industrial development	The RTA depot and industrial and commercial development has been continually developed since before 1940. Subsurface remains related to former industrial use of the site could include steel, concrete and brick structure foundations; rail lines, ballast and sleepers; industrial waste and discard deposits.	Low to Moderate

Phase	Area	Site feature	Potential archaeological remains	Potential
	South of Duck Creek	Parramatta Speedway and industrial development	The Granville Showground/Parramatta Speedway and industrial and commercial development has been continually developed since the 1920s in this area. Former unsealed roadways and tracks are not anticipated to be preserved below modern roads within the Sydney Speedway area. Subsurface remains related to former industrial use of the site could include steel, concrete and brick structure foundations; rail lines, ballast and sleepers; industrial waste and discard deposits.	Low to Moderate
	West of Duck Creek, south of A'Becketts Creek	Former residences	Several houses are present in this portion of the Clyde stabling and maintenance facility construction site in the 1940s, although modern industrial development in this area is considerable, and archaeological remains related to these former houses are not expected to remain.	Nil

7.4.3 Assessment of archaeological significance

Table 84 provides a discussion of the potential significance of archaeological remains that may be located within the Clyde stabling and maintenance facility construction sites. This significance assessment has been prepared based on the guidelines and methodology outlined in Section 7.1 of this report.

Only archaeological remains which have been predicted to be present (i.e. low potential or higher) are discussed in the following table.

Table 84: Assessment of significance for archaeological remains at the Clyde stabling and maintenance facility construction site

Criteria	Discussion
Research potential	Twentieth century industrial facilities are not considered a rare or unique material resource, and documentary evidence sources outlining the operation of these facilities are robust. Subsurface remains of the refinery are not considered to possess significant research potential.
Association with individuals, events or groups of historical importance	Former industrial facilities are not materially associated with any group, person or event of historic note. While the RTA depot building is heritage listed in part because of its significance on this criteria, archaeological remains relating to the former operation of the depot are not expected to be intact enough to be significant under this criterion.
Aesthetic or technical significance	Industrial equipment and subsurface remnants of the depot would demonstrate the technical operation of a mid- to late-20 th c. vehicle facility. These material remains are not considered unique and are replicated in existing and currently operational vehicle depots. As such, this resource is not considered aesthetically or technically significant.
Ability to demonstrate the past through archaeological remains	The industrial use of the site has involved significant renovations and redevelopment of the area since the 1920s. It is not anticipated that subsurface industrial remains would be intact enough to broadly demonstrate past practices in a materially legible manner.

Criteria	Discussion
Statement of Significance	Subsurface archaeological remains associated with the 20th c. operation of industrial facilities and the Parramatta Speedway is a resource for which extant operational facilities provide working examples. These remains would not provide information which existing structures and technical records could not provide. The archaeological remains would therefore not reach the threshold for local heritage significance.

7.4.4 PHALMS listings and discussion

The Clyde stabling and maintenance facility construction site is located across seven different AMUs described in the PHALMS listing. These AMUs are discussed below.

7.4.4.1 PAMU 2870

The Clyde stabling and maintenance facility construction site is located partly within Parramatta Archaeological Management Unit 2870, which has the following provided description of the AMU: ²²⁰

This AMU has no current archaeological research potential.

James Ruse Drive was formerly part of early farm grants to the north and south of the river and marked the eastern town boundary in 1844. Aston Street was upgraded to James Ruse Drive in the late twentieth century, creating a main traffic route to the east of the city centre.

The physical archaeological evidence within this area is unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

Archaeological evidence at this site is likely to be subject to major disturbance.

This AMU has no archaeological significance.

This assessment supports the assessment that significant archaeological remains are not likely to be preserved below the current alignment of James Ruse Drive. This assessment supports the statement of significance provided in PAMU 2870.

7.4.4.2 PAMU 2909

The Clyde stabling and maintenance facility construction site is located partly within Parramatta Archaeological Management Unit 2909, which has the following provided description of the AMU: ²²¹

This AMU has moderate archaeological research potential.

This area was part of Macarthur's Elizabeth Farm Estate. Sheather's nursery occupied the northern part of the subject area from 1852. Elizabeth Farm was subdivided in the 1880s and the subject area remained largely undeveloped due to its alienated location between James Ruse Drive and the railway line.

²²⁰ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2870*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242870>

²²¹ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2909*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242909>

The physical archaeological evidence within this area may include open deposits and scatters, ecological samples and individual artefacts which have potential to yield information relating to major historic themes including Agriculture, Land Tenure, Townships, Transport and Industry.

Archaeological evidence at this site is likely to be largely intact, but subject to minor disturbance in some areas.

This AMU is of Local significance.

The extent of PAMU 2909 is situated across an area of ground directly to the east of James Ruse Drive, and directly to the west of the Carlingford Railway Line. This area has not seen significant construction activities and is presently largely hardstand carparking.

This area was potentially a part of Sheather's nursery (a tenant on Macarthur's land grant) in the late nineteenth century it is known that the Camellia nursery buildings were situated in the northern extent of this area of AMU, towards the Parramatta River. The southern extent of this property was not known to have been developed beyond informal farming and horticulture, and it is uncertain whether this land was used by Sheather following the development of the railway line the 1880s. By 1943, aerial imagery indicates that this area was open ground with no significant structures and was clearly not used for agriculture.

It is not anticipated that ephemeral agricultural or horticultural remains would be recognisable with even the minor degree of ground disturbance present in this portion of the site. This assessment therefore does not support the statement of significance provided in PAMU 2909.

7.4.4.3 PAMU 2911

The Clyde stabling and maintenance facility construction site is located partly within Parramatta Archaeological Management Unit 2911, which has the following provided description of the AMU: ²²²

This AMU has no current archaeological research potential.

The route of the railway line runs through a number of early farming grants. The railway line extended north from the main Sydney line from 1886, initially as a private line serving the racecourse and the adjacent industrial area. The line came under government control in 1900.

The physical archaeological evidence within this area are unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

The archaeological resources of this AMU are likely to be largely intact, but subject to minor disturbance in some areas.

This AMU has no archaeological significance.

This area of the AMU is located within the T6 Carlingford Railway Line corridor. The construction and use of the railway line since the 1880s precludes the preservation of archaeological remains in this area. This assessment supports the statement of significance provided in PAMU 2911.

²²² Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2911*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242911>

7.4.4.4 PAMU 2968

The Clyde stabling and maintenance facility construction site is located partly within Parramatta Archaeological Management Unit 2968, which has the following provided description of the AMU: ²²³

This AMU has moderate archaeological research potential.

This area was part of Macarthur's Elizabeth Farm estate that was subdivided in the 1880s and developed as an industrial precinct.

The physical archaeological evidence within this area may include structural features, open deposits and scatters, ecological samples and individual artefacts which have potential to yield information relating to major historic themes including Technology, Townships, Industry, Technology and Transport.

Archaeological evidence at this site is likely to be subject to minor disturbance.

This AMU is of Local significance.

The area of this AMU correlates with the former RTA depot and industrial properties on the northern bank of Duck Creek. While this area was once part of Macarthur's Elizabeth Farm estate, there is no evidence that it was substantially developed beyond grazing. The high degree of ground disturbance caused by twentieth century industrial and infrastructural development would likely have removed any unrecorded structures in this area as well. It is not considered likely that substantial and intact archaeological resources related to early farming and grazing would be preserved.

This assessment therefore does not support the statement of significance provided in PAMU 2968.

7.4.4.5 PAMU 2969

The Clyde stabling and maintenance facility construction site is located partly within Parramatta Archaeological Management Unit 2969, which has the following provided description of the AMU: ²²⁴

This AMU has no current archaeological research potential.

This area was part of William Charles Wentworth's pastoral land that was subdivided c1872, following his death. The area slowly developed as an industrial precinct throughout the twentieth century.

The physical archaeological evidence within this area are unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

The archaeological resources of this AMU are likely to be largely intact, but subject to minor disturbance in some areas.

This AMU has no archaeological significance.

²²³ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2968*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242968>

²²⁴ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2969*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242969>

Similar to the land history in PAMU 2968, while this area was used for nineteenth century grazing, significant industrial and infrastructural development would have likely entirely impacted what would have been ephemeral archaeological remains. This assessment agrees that the AMU has no archaeological significance.

7.4.4.6 PAMU 2970

The Clyde stabling and maintenance facility construction site is located partly within Parramatta Archaeological Management Unit 2970, which has the following provided description of the AMU: ²²⁵

This AMU has no current archaeological research potential.

This area was part of William Charles Wentworth's pastoral land that was subdivided c1872, following his death. The area has been used as a car racetrack and showground since the early twentieth century.

The physical archaeological evidence within this area are unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

The archaeological resources of this AMU are likely to be largely intact, but subject to minor disturbance in some areas.

This AMU has no archaeological significance.

This AMU is located within the area of the Sydney Speedway and a helipad facility. There are significant areas of clear, relatively undisturbed ground on the southern margin of Duck Creek, in the northern portion of this AMU. While there are large areas of this AMU that have likely been minimally ground disturbed, no structures are known to have been developed in this area prior to the construction of Granville Showground in the 1920s. This assessment therefore supports the conclusions that this AMU has no archaeological significance.

7.4.4.7 PAMU 2971

The Clyde stabling and maintenance facility construction site is located partly within Parramatta Archaeological Management Unit 2971, which has the following provided description of the AMU: ²²⁶

This AMU has no current archaeological research potential.

This area was part of William Charles Wentworth's pastoral land that was subdivided c1872, following his death. The area slowly developed as an industrial precinct throughout the twentieth century.

The physical archaeological evidence within this area are unlikely to include features which have potential to yield information relating to major historic themes and current research questions.

The archaeological resources of this AMU are likely to be largely intact, but subject to minor disturbance in some areas.

²²⁵ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2970*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242970>

²²⁶ Godden Mackay Logan, 2001. *Parramatta Archaeological Management Unit 2971*, accessed online at: <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2242971>

This AMU has no archaeological significance.

Similar to the land history in PAMUs 2968 and 2969, while this area was used for nineteenth century grazing, significant industrial and infrastructural development would have likely entirely impacted what would have been ephemeral archaeological remains. This assessment agrees that the AMU has no archaeological significance.

7.4.5 Archaeological impact assessment

Significant archaeological remains have not been predicted to be located within the Clyde stabling and maintenance facility construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

7.4.6 Mitigation and management measures

This archaeological assessment has concluded that there is no potential for intact and significant archaeological remains within the Clyde stabling and maintenance facility construction site. Ground disturbing works at the Clyde stabling and maintenance facility construction site would adhere to Sydney Metro's Unexpected Heritage Finds Procedure.

7.5 Silverwater services facility construction site

7.5.1 Land use summary

The historical development of the Silverwater services facility construction site has been divided into the following historical phases of activity for this assessment:

- Phase 1 (1807 – 1909): Newington Estate. The construction site was part of a land grant consolidated by John Blaxland in 1807, which he ran as a cattle grazing, slaughtering and salting property up until his death in 1845. Following this the property was leased by his family to slaughtering industries. During this time the construction site was not known to have been substantially developed, with salting sheds located on the shore of the Parramatta River and Blaxland's Newington House located north of the construction site. It is likely that the construction site during this time was substantially estuarine and not developed
- Phase 2 (1909 – 1950): Incomplete suburban subdivision. The "Riverside Heights Estate" was advertised for residential subdivision and sale during this period, however plots of land from this subdivision were not significantly taken up by 1943. The Silverwater services facility construction site remained undeveloped by 1943
- Phase 3 (1950 – Present): Commercial and industrial development. The Silverwater area became increasingly industrialised through the late twentieth century. The Silverwater services facility construction site was occupied by a large two-storey warehouse by the mid-2000s. This building was demolished in 2007 and the site has remained unoccupied since.

7.5.2 Previous impacts

The construction of the late-twentieth century warehouse at the Silverwater services facility construction site would have resulted in some degree of ground disturbance.

The construction site has a history of substantial earthworks and infilling of ground, associated with efforts to provide level platforms for industrial construction within a poorly drained estuarine environment. It is likely that substantial deposited overburden has been infilled over earlier soil and historic landscapes in the area.

7.5.3 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within the Silverwater construction site, the potential for the identification of archaeological remains is predicted in Table 85.

Table 85: Predicted archaeological remains and potential at Silverwater services facility construction site

Phase	Site Feature	Potential archaeological remains	Potential
Phase 1 (1807 – 1909):	Land clearing, informal grazing	While part of the Blaxland land grant from the early 19 th c. the construction site was not known to have been utilised for activity beyond land clearing and animal grazing. Archaeological remains associated with informal animal grazing could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of later development of the site.	Nil
Phase 2 (1909 – 1950):	Residential subdivision	While the construction site was subdivided for sale during this time, there is no evidence that residential structures were constructed in this location. As such, there are no archaeological remains relating to this phase.	Nil
Phase 3 (1950 – Present):	Commercial development	The concrete floor and footings of the former late 20 th c. warehouse are clearly visible on the ground surface at the Silverwater services facility construction site.	High

7.5.4 Assessment of archaeological significance

The only predicted archaeological remains identified at the Silverwater services facility construction site are the residual floor and footing structures of the former late-twentieth century commercial warehouse. Structural remains related to a warehouse building from this period are not considered to be heritage significant, and no detailed assessment of archaeological significance has been provided for the Silverwater services facility construction site.

7.5.5 Archaeological impact assessment

Significant archaeological remains have not been predicted to be located within the Silverwater services facility construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

7.5.6 Mitigation and management measures

This archaeological assessment has concluded that there is no potential for intact and significant archaeological remains within the Silverwater services facility construction site. Ground disturbing works at the Silverwater services facility construction site would adhere to Sydney Metro's Unexpected Heritage Finds Procedure.

7.6 Sydney Olympic Park metro station construction site

7.6.1 Land use summary

The historical development of the Sydney Olympic Park metro station construction site has been divided into the following historical phases of activity for this assessment:

- Phase 1 (1810 – 1907): Wentworth's Homebush Estate. D'Arcy Wentworth was granted the Home Bush Estate in 1810, on which he constructed his country residence to the north east of the construction site. The land was cleared and drained for cattle grazing and as a horse stud by the 1820s. The property was managed by Wentworth's son, William Charles Wentworth, after the former's death in 1827, but it was recorded as being leased by 1840 with the house and grounds in disarray. A racecourse was built on the estate to the south-east of the construction site in the 1840s, which closed in the 1870s when Randwick Racecourse was developed. Residential subdivision of the estate was conducted in the late 1800s near Parramatta Road however the majority of the estate never sold. In disuse by the early 1900s, with the original Homebush House a ruin, the land was resumed by the government in 1909
- Phase 2 (1907 – 1988): State Abattoir. Levelling and clearing work of the Homebush property was conducted between 1907 and 1914, with railway branch and loop lines construction commencing from the Main Western Line in 1910. Construction commenced in 1916, with all abattoir facilities completed by 1921. The construction site was outlined in a plan from 1909 as a sheep and pig paddock, adjacent to the branch line which led to the main slaughterhouses. The abattoir was in operation for over 80 years, with the site being decommissioned for use in 1988
- Phase 3 (1988 – Present): Sydney Olympic Park. Following the successful Australian bid to host the 2000 Summer Olympic Games in Sydney, the former Abattoir grounds were selected as the primary Olympic site. Widespread demolition, ground excavation and levelling occurred prior to the construction of the current sporting facilities. The original administration offices for the abattoir were conserved in the northern part of the construction site. Buildings constructed in the central and southern portion of the construction site were built on raised and likely imported ground. Since the 2000 Olympic Games, buildings in the construction site has been utilised for commercial office space.

7.6.2 Previous impacts

Construction work for the development of Sydney Olympic Park in the 1990s involved extremely widespread earthworks in order to remove industrial buildings and to manage and contain hazardous contaminated waste. Significant areas of the Sydney Olympic Park precinct were levelled, infilled or capped with hardstand materials in order to minimise leaching of widespread toxic contaminants on the future worksite.

However, historical photographs and aerial imagery of the Homebush Abattoir building show that the road to the south of the Abattoir is on roughly the same elevation in the 1940s as it is today. The ground to the south of this road then gently rises, similar to the landform today. It is likely that the area immediately surrounding the Abattoir, including Herb Elliott Avenue, has not been substantially

modified. The construction of commercial buildings to the south of Herb Elliott Avenue however has likely involved more extensive ground disturbance.

7.6.3 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within the Sydney Olympic Park metro station construction site, the potential for the identification of archaeological remains is predicted in Table 86.

Table 86: Predicted archaeological remains and potential at the Sydney Olympic Park metro station construction site

Phase	Site feature	Potential archaeological remains	Potential
Phase 1 (1810 – 1907)	Homebush Estate farm	Wentworth's Homebush House was located to the east of the construction site, and the construction site itself during this historic phase would have been cleared and fences grazing ground. Archaeological remains with informal animal grazing could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of later land modification, infill and drainage works.	Nil
	Abattoir branch railway line	The former Abattoir branch line to the slaughterhouses was located in the eastern portion of the construction site. Archaeological remains associated with this could include rail beams, sleepers and ballast, evidence of embankments and earthworks, isolated artefact deposits. The extent to which remediated infilled earth has been deposited over the previously-low elevation railway line is uncertain, and archaeological remains could be situated at depth.	Low
Phase 2 (1907 – 1988)	Grazing paddocks	The majority of the construction site consisted of a penned grazing enclosure for pigs and sheep. Archaeological remains relating to this could include animal grazing could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of later land modification, infill and drainage works.	Nil

7.6.4 Assessment of archaeological significance

Table 87 provides a discussion of the potential significance of archaeological remains that may be located within the Sydney Olympic Park metro station construction site. This significance assessment has been prepared based on the guidelines and methodology outlined in section 7.1 of this report.

Only archaeological remains which have been predicted to be present (i.e. low potential or higher) are discussed in the following table.

Table 87: Assessment of significance for archaeological remains at the Sydney Olympic Park metro station construction site

Criteria	Discussion
Research potential	Twentieth century railway lines are not considered a rare or unique material resource, and documentary evidence sources outlining the operation of the former branch line are considered robust. Subsurface remains of the former abattoir branch line are not considered to possess significant research potential.
Association with individuals, events or groups of historical importance	Material remains of the former abattoir branch line are not demonstrably associated with any group, person or event of historic note.
Aesthetic or technical significance	Archaeological remains related to a single 20 th c. railway line are not considered unique and material remains are replicated across the NSW railway network. This resource is not considered aesthetically or technically significant.
Ability to demonstrate the past through archaeological remains	The likely poor degree of intactness of any subsurface remnants associated with the former abattoir branch line would not likely be demonstrative of past historical or industrial practices.
Statement of Significance	Archaeological remains associated with the former abattoir branch line consist of twentieth century rail infrastructural remains. These remains are not considered unique and are present across substantial portions of the existing railway network of NSW. These remains would not provide information that existing structures and technical documents cannot provide, and the as such, these remains would not reach the threshold for local heritage significance.

7.6.5 Archaeological impact assessment

Significant archaeological remains have not been predicted to be located within the Sydney Olympic Park metro station construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

7.6.6 Mitigation and management measures

This archaeological assessment has concluded that there is no potential for intact and significant archaeological remains within the Sydney Olympic Park metro station construction site. Ground disturbing works at the Sydney Olympic Park metro station construction site would adhere to Sydney Metro's Unexpected Heritage Finds Procedure.

7.7 North Strathfield metro station construction site

7.7.1 Land use summary

The historical development of the North Strathfield metro station construction site has been divided into the following historical phases of activity for this assessment:

- Phase 1 (1798 - 1886): Small landholding grants. The construction site is located across three 25-acre land grants awarded to soldiers Benjamin Urch, Stephen Burr and Isaac Hewin, although there is no evidence that they built on or farmed the land or that they remained in New South Wales. These land grants were consolidated into Thomas Walker's larger Concord grant over time from the 1840s and were known to not have been significantly developed during this historical phase
- Phase 2 (1886 – 1918): Northern railway line. The construction site was included in land which was resumed by the government for the construction of the northern railway line between Strathfield and Hornsby Stations. No station was constructed on the land in this location at that time, with only two new stations constructed south of the Parramatta River at Concord and Rhodes. The construction site to the east of the rail line was not known to have been developed at this time
- Phase 3 (1918 – Present): North Strathfield Station. Subdivision plans from the 1920s indicate that the eastern margin of North Strathfield Station were reserved for an additional rail siding which was never developed. Subdivision and residential construction occurs during this historical phase in the surrounding area, with the southern construction site utilised as a rail access point from Queen Street. A small residential building – possibly a station master's residence – was located directly to the north of the eastern entrance to the station. The remainder of the northern construction site was open public grassland. A tunnelled freight line was constructed in 2014 – 2015 which involved significant ground excavation to the east of the station, including large portions of the construction site.

7.7.2 Previous impacts

The construction of the freight line tunnel through the North Strathfield metro station construction site in 2014 – 2015 involved large scale earthworks through much of the northern construction site. While the freight tunnel excavation was located within the rail corridor (directly to the west of the construction site), historical aerial images indicate that significant ground excavation was conducted through the construction site in order to establish tracking pathways to the tunnel excavation. The original ground surface in this area has likely been entirely removed.

The southern construction site was similarly impacted by the freight tunnel excavation, with underground ventilation equipment constructed below the current hard-stand carpark. The preservation of any portion of the original ground surface is considered unlikely.

7.7.3 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within the North Strathfield metro station construction site, the potential for the identification of archaeological remains is predicted in Table 88.

Table 88: Predicted archaeological remains and potential at the North Strathfield metro station construction site

Phase	Site feature	Potential archaeological remains	Potential
Phase 1 (1798 – 1886)	Land clearance and grazing	The construction sites at North Strathfield were granted to soldiers in 1798 however there is no evidence that these properties were improved or built on during this historical phase. Archaeological remains relating to land clearance and grazing could include tree boles, fence line postholes, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and ground excavation for the construction of the freight tunnel would have removed any subsurface remains associated with former pastoral use of the properties.	Nil
Phase 2 (1886 – 1918)	Northern railway line	The northern railway line was constructed during this historical phase directly to the west of the construction site, although it is uncertain whether the construction site was resumed by the government prior to the construction of North Strathfield Station in 1918. The land may have continued in use for informal grazing. Archaeological remains relating to grazing could include tree boles, fence line postholes, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and ground excavation for the construction of the freight tunnel would have removed any subsurface remains associated with former pastoral use of the properties.	Nil
Phase 3 (1918 – Present)	North Strathfield Station	A small residence was located within the northern construction site by 1943 which may have been a station master's house. This house had been removed prior to 2003. Ground excavation for the construction of the freight tunnel would have removed any subsurface remains associated with this house.	Nil

7.7.4 Assessment of archaeological significance

No predicted subsurface archaeological remains are predicted to be located within the North Strathfield metro station construction site. As there are no archaeological remains located in this area, no assessment of significance has been provided.

7.7.5 Archaeological impact assessment

Significant archaeological remains have not been predicted to be located within the North Strathfield metro station construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

7.7.6 Mitigation and management measures

This archaeological assessment has concluded that there is no potential for intact and significant archaeological remains within the North Strathfield metro station construction site. Ground disturbing

works at the North Strathfield metro station construction site would adhere to Sydney Metro's Unexpected Heritage Finds Procedure.

7.8 Burwood North Station construction site

7.8.1 Land use summary

The Burwood North Station construction site has been divided into two areas – the northern construction site (located to the north of Parramatta Road) and the southern construction site (located to the south of Parramatta Road) for ease of discussion and assessment.

The historical development of the Burwood North Station construction site has been divided into the following historical phases of activity:

- Phase 1 (1792 – 1819) Longbottom Stockade and early land grants.
 - The northern construction site was located near to the first Longbottom Stockade which was originally constructed along the Parramatta Road on the eastern side of the Loftus Street. The first stockade was noted to have a log watch house and up to nine huts for convict accommodation, and up to twenty acres of crop planted by 1793.
 - The southern construction site is located within the land grant of Alexander Riley's Burwood Estate, with the main residence (Burwood Villa) located 350 metres to the south of the Burwood North Station southern construction site
- Phase 2 (1819 – 1850): Longbottom Village and Riley Estate.
 - The northern construction site was located near to the Longbottom stockade, which was enlarged with additional land to the west, forming 700 acres and transformed into an official government farm. Operations at the farm mostly consisted of timber logging, sawing and shingling and charcoal burning in 1820, with buildings for the farm still located to the east of Loftus Street. The area to the west of Loftus Street was removed from the Longbottom farm for private sale in 1837, with a small number of unidentified buildings are present in the northern construction site by the 1840s.
 - Near the southern construction site, Emanuel Neich's Hotel (later the Bath Arms Hotel) is constructed on the south-western corner of the Parramatta Road and Burwood Road intersection, and a small residence is apparent immediately to the east of the Burwood North Station southern construction site in 1843
- Phase 3 (1850 – 1920): Residential development.
 - Northern construction site: the Longbottom stockade is converted into a mounted police station by this time. Property allotments and configurations in the northern construction site undergo minor change between 1850 and 1881. Growth is slight prior to widespread residential subdivisions in the 1920s, although at least once Federation-period residence "Wyreema" identified in the northern portion of the Burwood North Station northern construction site. The "Orient Hotel" is identified along Parramatta Road in 1919 and was likely constructed in the 1870s or 1880s; this hotel is currently in use as the Pine Hotel today.

- Southern construction site: a store is present on the corner of Parramatta Road and Burwood Road in 1919. This store has been modified but is present within the southern construction site area today. No other structures or development is identified in this area during this time, and the land remained part of Riley's estate without significant subdivision until the early twentieth century.
- Phase 4 (1920 – Present): Parramatta Road commercial development.
 - The northern and southern construction sites undergo similar commercial development with larger 2-storey whole-lot commercial structures present by 1943 at both sites. The construction sites are significantly renovated with new commercial structures and carparks between 1943 and the present day. The following properties present in 1943 are however still extant today: commercial buildings on the eastern corners of Burwood Road and Parramatta Road, the western corner of Loftus Street and Parramatta Road, and the Pine Inn.

7.8.2 Previous impacts

The Burwood North Station northern and southern construction sites have undergone several phases of residential and commercial development which would likely have highly impacted ground surfaces during these periods of renovation. However, these redevelopment events are not uniform across the site, with several buildings present at least from 1843 and one (on the south-eastern corner of Parramatta Road and Burwood Road) present from at least 1919. The rear yards and lanes of the construction site are also hardstand concrete and asphalt carparks, which may not have been significantly excavated when they were constructed after 1950. A modern apartment block complex, located within the northern construction site area and accessed from Burton Street, has a large basement carpark which would have likely disturbed any archaeological remains within the building footprint.

7.8.3 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within the Burwood North Station construction site, the potential for the identification of archaeological remains is predicted in Table 89.

Table 89: Predicted archaeological remains and potential at the Burwood North Station construction site

Phase	Site area	Site feature	Potential archaeological remains	Potential
Phase 1 (1792 – 1819)	Northern construction site	First Longbottom Stockade	The first Longbottom Stockade was constructed to the east of the construction site in 1792 and the northern construction site likely cleared of timber with convict labour during this historic phase. It is possible that crops were planted within the northern construction site at this time as well. Archaeological remains relating to land clearing and agriculture could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of residential and commercial development.	Nil

Phase	Site area	Site feature	Potential archaeological remains	Potential
Phase 2 (1819 - 1850)	Southern construction site	Early land grants	The southern construction site was the location of the Alexander Riley land grant, although no known structures were developed in this area during this phase. It is likely that the area was used for agriculture or pasturage. Archaeological remains relating to land clearing and agriculture could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of residential and commercial development.	Nil
	Northern construction site	Longbottom Village	Several buildings are present on an 1843 plan of the northern construction site, in what was then called Longbottom Village. These buildings are likely small timber or brick farm-related structures. Archaeological remains relating to these buildings could include timber posts and postholes, brick or stone footings, fence post line postholes, field drains and isolated artefact scatters. Due to the small building footprints of these structures, and their situation in areas which have been extensively redeveloped since they were constructed, the preservation of any legible remains is not expected in the construction site.	Nil
	Southern construction site	Riley estate	The property in the southern construction site continued in use as agricultural land or as gardens on the Riley estate during this time. Archaeological remains related to this land use (former plantings, plough lines, isolated artefact deposits) have a weak archaeological signature which would not be expected to survive later phases of development within the southern construction site.	Nil
Phase 3 (1850 – 1920)	Northern construction site	Late 19 th c. development	Three buildings are present in the construction site when widespread residential subdivision begins in the 1920s. Of these buildings only one, “Wyreema”, located in the northern extension of the northern construction site, is not present today. This building was a small, likely Federation, house fronting Burton Street which was present until at least 1943. Archaeological remains relating to this structure would include brick footings, timber posts and postholes, evidence of gardening and landscaping, ceramic and metal pipes and services, and isolated artefact deposits. This site is located below hardstand carpark and structural remains are likely to be preserved.	Moderate

Phase	Site area	Site feature	Potential archaeological remains	Potential
	Southern construction site	Riley's estate and subdivision	The southern construction site was subdivided for sale during this phase although no identified construction or sale was conducted in this area apart from the construction of the store in the early 20 th century on the southeast corner of Burwood Road and Parramatta Road. This store has been modified but remains within the southern construction site and subsurface remains related to an existing early 20 th century building are not considered archaeological in nature. The remaining land, if continued in use for gardens or pasturage, would possess a weak archaeological signature (plantings, plough lines, isolated artefact deposits) which would not be expected to survive later phases of development within the southern construction site.	Nil

7.8.4 Assessment of archaeological significance

Table 90 provides a discussion of the potential significance of archaeological remains that may be located within the Burwood North Station construction site. This significance assessment has been prepared based on the guidelines and methodology outlined in section 7.1 of this report.

Only archaeological remains which have been predicted to be present (i.e. low potential or higher) are discussed in the following table. As there are no archaeological remains predicted for the southern construction site at the Burwood North Station construction site, the table only discussed the archaeological significance for potential remains at the Burwood North Station northern construction site.

Table 90: Assessment of significance for archaeological remains at the Burwood North Station northern construction site

Criteria	Discussion
Research potential	In the northern construction site, the house of "Wyreema" is likely a late-19 th or early 20 th century vernacular dwelling which was demolished at some time after 1943. Archaeological remains relating to this former residence are considered common and a research agenda associated with this structure which material remains could provide information on is not likely.
Association with individuals, events or groups of historical importance	The material remains of late 19 th and early 20 th century housing is not demonstrably associated with any group, person or event of historic note.
Aesthetic or technical significance	Archaeological remains related to a late 19 th or early 20 th century housing are not considered unique and material remains are replicated across NSW. This resource is not considered aesthetically or technically significant.
Ability to demonstrate the past through archaeological remains	Artefactual remains associated with late 19 th and early 20 th century housing is not predicted. Structural remains of housing from this period would not likely be demonstrative of past historical or industrial practices.

Criteria	Discussion
Statement of Significance	Archaeological remains related to the former use of the northern Burwood North Station construction site would consist of structural remnants of late 19 th and 20 th century residences and small commercial properties. These remains would be broadly demonstrative of common architectural styles from this period and would not be expected to be artefact rich. Archaeological remains for late 19 th and 20 th century residences would not reach the threshold of local significance.

7.8.5 Archaeological impact assessment

Significant archaeological remains have not been predicted to be located within the Burwood North Station construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

7.8.6 Mitigation and management measures

This archaeological assessment concluded there is no potential for intact and significant archaeological remains within the Burwood North Station construction site. Ground disturbing works at the Burwood North Station construction site would adhere to Sydney Metro's Unexpected Heritage Finds Procedure.

7.9 Five Dock Station construction site

7.9.1 Land use summary

The historical development of the Five Dock Station construction site has been divided into the following historical phases of activity:

- Phase 1 (1794 – 1837): Early grants and John Harris' Five Dock Farm.
 - Both eastern and western construction sites were located in the centre of the 1,500 acre "Five Dock Farm" estate, which was granted to the surgeon John Harris in 1806, incorporating earlier amalgamated land grants which had not been developed by Europeans. John Harris did not reside at his Five Dock Farm, instead remaining at his Ultimo House Estate. Convict gangs constructed the Great North Road through the grant (and between the construction sites) from 1825. The construction sites were not known to have been developed during this time
- Phase 2 (1837 – 1910): Villa subdivision of Five Dock. Harris' estate was subdivided into "villa" estates in excess of 20 acres each. These properties are slowly purchased and built on over this time.
 - The Five Dock Station eastern construction site becomes part of the "Waterview Estate", with the house and grounds of this estate located to the east of Waterview Street (outside the construction site).
 - The Five Dock Station western construction site becomes part of the St Albans Anglican Church, with the first combined church and school building constructed immediately to the north of the construction site in 1859
- Phase 3 (1910 – Present): Residential subdivision and commercial development. Both construction sites are subdivided for residential and commercial sale in the early 1910s, with the newly constructed tram line encouraging demographic growth.
 - The Five Dock Station western construction site features commercial premises facing the Great North Road by 1943, with small Interwar residential buildings present facing East Street; these buildings are largely replaced with expanded commercial premises by the present day.
 - The Five Dock Station eastern construction site during this period consists of residential buildings facing Waterview Street. Some of these have been removed and replaced with hardstand carpark, while Inter-War and post-war infill residences still remain facing Waterview Street.

7.9.2 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within the Five Dock Station construction site, the potential for the identification of archaeological remains is predicted in Table 91.

Table 91: Predicted archaeological remains and potential at the Five Dock Station construction site

Phase	Site location	Site feature	Potential archaeological remains	Potential
Phase 1 (1794 – 1837)	Eastern and western construction sites	Five Dock Farm	Harris' Five Dock Farm was not known to have been substantially developed prior to its subdivision from the 1830s. Land clearing and informal agricultural use occurred in the construction sites during this time. Archaeological remains relating to land clearing and agriculture could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of residential and commercial development	Nil
	Eastern construction site	Waterview Property	The Waterview Property consisted of a small manorial residence with outbuildings, constructed approximately 30 metres to the east of the eastern construction site. The eastern construction site during this time was likely the site of gardens or informal agriculture. Archaeological remains relating to land clearing and agriculture could include tree boles, fence line postholes, plough lines, field drains and isolated artefact scatters. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of residential and commercial development.	Nil
Phase 2 (1837 – 1910)	Western construction site	St Albans Church	The first St Albans Church and School was located to the north of the construction site, built in 1859. During this time the western construction site was not known to have been developed, although gardens may have been present. Archaeological remains associated with landscaping and gardening could include modified soil deposits, tree boles, brick or stone footings or paving. These remains, if present, are considered materially ephemeral, and would be archaeologically invisible considering the degree of residential and commercial development.	Nil

7.9.3 Assessment of archaeological significance

No predicted subsurface archaeological remains are predicted to be located within the Five Dock Station construction site. As there are no archaeological remains located in this area, no assessment of significance has been provided.

7.9.4 Archaeological impact assessment

Significant archaeological remains have not been predicted to be located within the Five Dock Station construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

7.9.5 Mitigation and management measures

This archaeological assessment has concluded that there is no potential for intact and significant archaeological remains within the Five Dock Station construction site. Ground disturbing works at the Five Dock Station construction site would adhere to Sydney Metro's Unexpected Heritage Finds Procedure.

7.10 The Bays Station construction site

7.10.1 Previous archaeological investigation

7.10.1.1 Barangaroo South, 2010-2012²²⁷

Archaeological excavations were undertaken between 2010-2012 for the development of Barangaroo South by Lend Lease. Despite being outside the study area and its vicinity, these excavations reveal information regarding potential archaeological remains associated with land reclamation.

The Barangaroo South excavations revealed quarry marks within natural bedrock as part of later nineteenth-century modifications to the natural landscape; evidence of the reclamation process including the deposition of rubble sandstone to form a platform to the high water level, compacted sands and clays to form a new ground about one metre above the high tide level; the remains of a boat ramp or skid consisting of sloping sandstone pavers at the high tide mark, sandstock brick piers and postholes further up the slope indicating that a timber element had once been present for small vessels; and a thin, timber-rich silt surface with a high frequency of copper nails which overlaid the reclamations fills. The excavation demonstrated that multiple phases of historical occupation are clearly identifiable and preserved below reclamation fills.

7.10.2 Land use summary

The historical development of The Bays Station construction site has been divided into the following historical phases of activity for this assessment:

- Phase 1 (1800 – 1851): William Balmain Estate. The construction site was located on the outer margin of the William Balmain Estate, granted in 1800 over the entirety of Balmain, Birchgrove and most of Rozelle. The construction site during this time consisted of largely estuarine mudflats which were mostly inundated at high tide, with the rocky foreshore of Glebe Island on its southern margin
- Phase 2 (1851 – 1912): Rozelle Subdivisions and Waterfront Industries. The Rozelle and Balmain peninsula was subdivided over this period, with maritime and noxious industries developing along the White Bay and Glebe Island foreshores. No effort was made to reclaim the head of White Bay in the construction site at this time, however some rear yard buildings were constructed in the far western portion of the construction site above the high tide line. In 1890, Mullens Street was extended south from the intersection of Parsons Street to (then) Abattoir Road over the head of White Bay, with new properties constructed facing off from Mullens Street in the western portion of the construction site
- Phase 3 (1912 – 1984): White Bay Power Station and Port Facilities. The Mullens Street resumption area is resumed by the government, cleared and then the current White Bay foreshore jetty is constructed in this space. The White Bay Rail Line is connected through newly reclaimed land to the west of the construction site. The White Bay area operates as a coal loading and goods loading port, with shifting configurations of rail infrastructure and buildings utilised over the course of 70 years

²²⁷ Casey & Lowe, 2012. *Archaeological Excavation: Barangaroo South, preliminary results*. Lend Lease, Sydney.

- Phase 4 (1984 – Present): Decommissioned Site. White Bay Power Station is decommissioned in 1984, with the rail line suspending operations to White Bay jetties in 1996. Former infrastructure in the area sequentially removed.

7.10.3 Previous impacts

The development of White Bay Power Station in 1912 and surrounding construction work to install the connecting rail lines and new jetties, involved considerable land and foreshore modification. Large portions of the sandstone headland on the northern side of Glebe Island were quarried and the ground levelled near to sea level across the site.

However, on the western side of the construction site, successive phases of foreshore reclamation involved significant infilling of ground to construct a level surface over ground which was largely intertidal. Reclamation soil and fill deposits often act as a protective layer for archaeological remains and can aid in their preservation.

As such, while the southern margin of the construction site is expected to be cut down (from the original rocky foreshore of Glebe Island), the western and northern parts of the construction site are likely to demonstrate infilling events which may have preserved archaeological remains. Geotechnical information indicates that natural foreshore and marine sediments are likely to be preserved below fill layers of up to 2.8 metres.

The horizontal and vertical extent of infill deposits across site is not clearly understood. The construction of the rail line and multiple infrastructural remodelling events within the former rail corridor is likely to have required excavation into infilled soil deposits. The degree of disturbance is likely to be quite variable across the whole of the site.

7.10.4 Assessment of archaeological potential

Based on the history of the site and the later historical ground disturbance that has occurred within The Bays Station construction site, the potential for the identification of archaeological remains is predicted in Table 92.

Table 92: Predicted archaeological remains and potential at The Bays Station construction site

Phase	Site Feature	Potential archaeological remains	Potential
Phase 1 (1800 – 1851)	Historic soil deposits	The construction site was not known to have been developed by Europeans during this historical phase, although European settlement along the shores of Port Jackson was occurring at this time. Washed in artefactual material may have accrued on the former intertidal flat which could be buried by later infill. Soil samples may also have been sealed from early reclamation phases and could provide information on the environment of early Sydney.	Nil to Low

Phase	Site Feature	Potential archaeological remains	Potential
Phase 2 (1851 – 1912):	Out sheds, former structures in the western portion of the construction site	The rear yard buildings for the original 1860 White Bay Hotel were located in the far western portion of the construction site. These structures could have included accommodation and stable structures, as well as toilets and wells. Archaeological remains associated with these former buildings could include brick and stone footings, timber boards and intact underfloor deposits, ceramic pipes, brick or stone lined drains, isolated ceramic, glass, bone, or metal deposits. lined cesspits or wells containing occupation or discarded artefactual (glass, ceramic, bone) material and soil deposits. While these buildings were removed during resumption for the White Bay Power Station development, their relative elevation would have involved infilling of the foreshore in the early 20 th c. which would have likely preserved some portion of these remains.	Low to Moderate
	Former Abattoir buildings	The southern portion of the construction site overlaps the north-western portion of the former Glebe Island Abattoir. One historical plan indicates that at least three structures were situated in this area during the late 19 th c. However, the redevelopment of the White Bay precinct involved the removal of the former abattoir followed by extensive quarrying of the natural sandstone to reduce the raised elevation down to the current level of the White Bay foreshore, which was several metres higher than the ground surface is today. This would have removed all potential archaeological remains in this area.	Nil
	Reclamation fills	Soils and sediments used to infill the foreshore at the head of White Bay would be expected to be found throughout the western portion of the construction site from this phase. Reclamation fills are likely to be artefact-rich although geographically dispersed. Archaeological remains relating to this deposit could include discrete stratigraphic historic soil deposits, artefactual (glass, ceramic, bone, timber, brick) materials and infill rubble, and timber retaining or infill structures such as piers, posts, beams or walls.	Moderate
Phase 3 (1912 – 1984)	Reclamation fill deposits	Reclamation fill used to extend the foreshore during the construction of the White Bay Power Station is likely to have been materially more robust than earlier phases of small-scale and informal reclamation. Archaeological remains relating to this infilling event could include brick, stone or concrete rubble, artefactual discard deposits (glass, ceramic, timber), timber retaining structures such as piers, posts or beams, and buried concrete structural elements.	High
	Rail infrastructure and former warehouses and structures	The construction site had numerous rail lines and rail support facilities (including turntables, stabling facilities and roundhouses, switching and loading gears). While many of these facilities have been removed, there are surface remnants of some of this material and it is likely that buried remnants across the site remain. Archaeological remains relating to rail infrastructure from this phase could include rail beams, ballast and timber or concrete sleepers, rail switches, levers and points, concrete, steel and brick building footings, discarded industrial equipment, artefactual refuse deposits (plastic, metal, glass, ceramic). Historical aerial imagery indicates that several ancillary buildings were situated within the construction site. Subsurface remains could include concrete and brick footings, tile and brick rubble, discarded industrial equipment, artefact refuse deposits (plastic, metal, glass, ceramic).	High

7.10.4.1 Significance of predicted archaeological remains for the Bays Phase 1 (1800 – 1851)

Table 93 provides a discussion of the potential significance of archaeological remains that may be located within The Bays Station construction site for Phase 1 of the European history of the site.

Table 93: Assessment of significance for Phase 1 (1800 – 1851) archaeological remains at The Bays Station construction site

Criteria	Discussion
Research potential	Buried historical soil samples, if stratigraphically controlled, would have the potential to provide unique scientific data on the marine and ecological conditions of the Port Jackson area during the early years of the Sydney colony.
Association with individuals, events or groups of historical importance	Isolated artefact samples and buried historic soils are not materially associated with any group, person or event of historic note.
Aesthetic or technical significance	Isolated artefact samples and buried historic soils are unlikely to demonstrate any aesthetic or technical significance.
Ability to demonstrate the past through archaeological remains	Substantial buried soil deposits may be able to broadly demonstrate the environmental past from the time of the early founding of the colony.
Statement of Significance	Isolated artefact deposits and stratigraphically-intact buried historic soils from this phase would be of local heritage significance for their ability to provide ecological information relating to the environment at the time of the early founding of the British colony around Port Jackson.

7.10.4.2 Significance of predicted archaeological remains for The Bays Phase 2 (1851 – 1912)

Table 94 provides a discussion of the potential significance of archaeological remains that may be located within The Bays Station construction site for Phase 2 of the European history of the site.

Table 94: Assessment of significance for Phase 2 (1851 – 1912) archaeological remains at The Bays Station construction site

Criteria	Discussion
Research potential	Archaeological materials related to reclamation fills at White Bay as well as potential privy or well deposits associated with the original White Bay Hotel could provide a palimpsest of artefactual material that would be chronologically stratified. This would be a unique material resource into understanding the domestic practices of the working population of Glebe Island and White Bay.
Association with individuals, events or groups of historical importance	Material remains associated with the original White Bay Hotel are associated with the Glebe Island Abattoirs, as the venue for which many of the workers of that facility were known to have congregated at.

Criteria	Discussion
Aesthetic or technical significance	Archaeological remains relating to the original White Bay Hotel may include significant recreational artefactual collections, although it is not likely that these collections would be considered aesthetically or technically significant in their own right.
Ability to demonstrate the past through archaeological remains	Archaeological remains related to the original White Bay Hotel could be demonstrative of recreational and domestic working class practices and activities from the mid-19 th century. Reclamation fills are also likely to have accrued significant artefactual materials from the period of their deposition would broadly demonstrate material industrial practices in the White Bay area.
Statement of Significance	Archaeological remains associated with the original White Bay Hotel and reclamation fills from this historic phase would be of local significance for their potential to inform research questions on the domestic life of working people of the area, their association with the Glebe Island Abattoirs, and for being demonstrative of the past lifeways and industrial practices of working people in the mid-19 th century.

7.10.4.3 Significance of predicted archaeological remains for The Bays Phase 3 (1912 – 1984)

Table 95 provides a discussion of the potential significance of archaeological remains that may be located within The Bays Station construction site for Phase 3 of the European history of the site.

Table 95: Assessment of significance for Phase 3 (1912 – 1984) archaeological remains at The Bays Station construction site

Criteria	Discussion
Research potential	<p>Information on the former rail infrastructure and surface structures in The Bays Station construction site is archivally available and archaeological remains would not likely respond to specific research agenda if they were investigated.</p> <p>Reclamation fills used for the 1912 White Bay reclamation are more likely to utilise modern infill materials in bulk (concrete, stone) and would have a reduced artefactual signature compared to 19th c. informal and accreted reclamation events. It is unlikely that reclamation fills from this phase would respond to research interrogation.</p>
Association with individuals, events or groups of historical importance	<p>Evidence of former rail infrastructure and working buildings would be associated with the operation of the White Bay Power Station and the working population who toiled there. Rail infrastructure would be associated with the use of White Bay during the war-time industrial and shipping efforts of that period. These remains would also be associated with organised labour movements and labour organisational efforts.</p> <p>Archaeological remains of reclamation fills from post-1912 would not be strongly associated with any specific individuals, groups or events of historic note.</p>
Aesthetic or technical significance	<p>The scale of the rail and port facilities at White Bay was considerable in size and technically complex, and the archaeological remains of a working industrial centre of this kind would be of high aesthetic and technical significance.</p> <p>Archaeological remains of reclamation fills from post-1912 would likely be modern bulk material fill materials and would not likely be of aesthetic or technical significance.</p>

Criteria	Discussion
Ability to demonstrate the past through archaeological remains	<p>Archaeological remains associated with former rail infrastructure and industrial buildings are strongly demonstrative of large-scale 20th c. industrial practices.</p> <p>Archaeological remains of reclamation fills from post-1912 contexts would likely be modern bulk material fill materials and structural elements and would be unlikely to be demonstrative of past events or practices.</p>
Statement of Significance	<p>Remnants of rail infrastructure, particularly larger items such as turntables and roundhouses, as well as former industrial structures, would be locally significant for their association with the State significant White Bay Power Station; that their size and complexity would be aesthetically and technically significant, and that they would be demonstrative of large-scale industrial and organisational practices of the 20th c.</p>

7.10.5 Summary of archaeological potential and significance

A summary of significant potential archaeological deposits that may remain within The Bays Station construction site is provided in Table 96.

Table 96: Summary of significant potential archaeological deposits in The Bays Station construction site

Phase	Site feature and potential archaeological remains	Potential	Significance
Phase 1 (1800 – 1851)	<p>Historic soil deposits and discarded artefacts – Archaeological remains associated with this would include stratigraphically-controlled and sealed soil deposits, <i>ex-situ</i> artefactual material from this period which may have washed into site or been discarded.</p>	Nil to Low	Local
Phase 2 (1851 – 1912)	<p>Outbuildings and structures of the original White Bay Hotel – Archaeological remains associated with these former buildings could include brick and stone footings, timber boards and intact underfloor deposits, ceramic pipes, brick or stone lined drains, isolated ceramic, glass, bone, or metal deposits. Lined cesspits or wells containing occupation or discarded artefactual (glass, ceramic, bone) material and soil deposits.</p>	Low to Moderate	Local
	<p>Reclamation fills – Archaeological remains relating to reclamation fills could include discrete stratigraphic historic soil deposits, artefactual (glass, ceramic, bone, timber, brick) materials and infill rubble, and timber retaining or infill structures such as piers, posts, beams or walls.</p>	Moderate	Local
Phase 3 (1912 – 1984)	<p>Rail Infrastructure and former industrial structures – Archaeological remains could include evidence of turntables, stabling facilities and roundhouses, loading equipment, rail beams, ballast and timber or concrete sleepers, rail switches, levers and points, concrete, steel and brick building footings, tile and brick rubble, discarded industrial equipment, artefactual refuse deposits (metal, glass, ceramic).</p>	High	Local

7.10.6 Archaeological impact assessment

Impacts to significant archaeological resources are likely to occur during demolition and excavation work for the works at The Bays Station construction site. Detailed design information is required prior to ascertaining the precise degree of archaeological impacts.

7.10.7 Mitigation and management measures

Following clarification of ground disturbing design information, it is considered likely that significant archaeological resources would be impacted by the proposed works.

An Archaeological Research Design (ARD) for The Bays Station construction site would be prepared. This ARD would outline the archaeological investigation strategy to manage potential impacts to significant archaeological resources.

Former rail infrastructure within the construction site is present on the ground surface, and historical plans of rail facilities through the twentieth century are archivally available. These archival records would be assessed as part of the preparation of the ARD report, and a program of photographic and drawn archival recording of surface rail industrial remains would be conducted. Based on historic rail plans, those rail elements of particular significance (such as roundhouses and turntables) would be selectively archaeologically exposed and recorded prior to demolition.

Archaeological test excavation would be conducted to ascertain whether reclamation fills have preserved any evidence of pre-1910s structures which may be located in the western portion of the construction site, to the west of the former alignment of Mullens Street. If significant and intact archaeological resources are identified during test excavation, open area archaeological salvage excavation would be required.

Reclamation fills are likely to be artefact-rich deposits with the potential of preserving buried historical soils and sediments. The ARD report would outline a limited archaeological test excavation sampling program to ascertain the character, depth and intactness of reclamation deposits. The ARD would outline further methodologies for investigation that, depending on the nature of tested deposits, may involve small-scale salvage excavation or machine monitoring.

Buried natural and historic sediments and soils would be sampled for palaeoecological analysis and the position of their location recorded in securely controlled stratigraphic contexts.

It is possible that unexpected finds within reclamation fills could be considerably more robust than for those recovered on terrestrial sites, with a small possibility that intact marine vessels, piers or structures were buried in this infill. Archaeological management methodologies would be put in place for unexpected finds of large archaeological deposits which are otherwise unanticipated.

8.0 CUMULATIVE IMPACT ASSESSMENT

8.1 Introduction

Cumulative impacts represent the incremental loss of, or modifications to, a historical or environmental resource over time. These can result from individually minor, but collectively significant, actions and must therefore be considered in the wider developmental context to minimise impacts.²²⁸

The following sections summarise the heritage impacts of major rail and road infrastructure projects and other relevant project in the vicinity of Stage 1 construction sites. Cumulative impacts of these projects and Stage 1 are then described in section 8.2.

8.2 Related projects

The following section summarises the heritage impacts of projects in the vicinity of the construction sites. Projects which would not impact heritage, those outside the curtilage of the construction sites or those which do not have publicly accessible construction information have not been included within this section. Section 3.5.3 outlines methodology for the assessment.

8.2.1 Westmead metro station

A summary of heritage impacts of relevant projects within the vicinity of the Westmead metro station construction site has been provided in Table 97.

Table 97: Summary of major infrastructure and commercial projects within the vicinity of the Westmead metro station construction site

Project	Description	Heritage impacts
Parramatta Light Rail	Transport for New South Wales is developing the Parramatta Light Rail (Stage 1) to deliver a light rail network from Westmead to Carlingford via Parramatta CBD and Camellia	<ul style="list-style-type: none"> The Westmead portion of this project is not expected to result in any significant impacts to the World Heritage values of the 'Parramatta Park and Old Government House' (Australian Convict Sites) (WHL 1306, NHL 105957, SHR 00596, PLEP I00596); the State Heritage values of the 'Cumberland District Hospital Group' (SHR 00820, PLEP I00820); or the Local Heritage values of the 'University of Western Sydney' (PLEP I628) Overall, the proposed activities are unlikely to impact on substantially intact or significant archaeology within the Westmead portion of this project
24-26 Railway Parade Westmead	The proposal involves the demolition of existing structures, tree removal, and the construction of a 16-storey mixed-use development	<ul style="list-style-type: none"> Potential indirect impacts to LEP listed University of Western Sydney

²²⁸ Washington State Department of Transportation 2008. Guidance on Preparing Cumulative Impact Analyses, p. 3.

8.2.1.1 Discussion of cumulative impacts for Westmead metro station construction site

The Westmead metro station construction site would require the demolition of all existing structures within the construction site footprint. Works associated with Stage 1 are not expected to directly impact heritage items or significant archaeology.

The existing environment around the Westmead metro station construction site is predominantly suburban, comprising low density Inter-War residential dwellings and low to medium density modern apartments set on relatively quiet streets off Hawkesbury Road, and nearby the historic Westmead Public School along Hawkesbury Road. The portion of the study area encompassing Alexandra Avenue includes a number of commercial developments and a small portion of the T1 Western Line rail corridor.

The area surrounding the existing Westmead Station is undergoing moderate development, which has the potential to alter the existing character and amenity of the suburb. These developments, as outlined in Table 97 above, include the construction of high-rise multi-purpose buildings, in addition to the introduction of the Parramatta Light Rail (Stage 1); although these projects are not expected to result in direct impact to heritage significant buildings and potential archaeological resources, however there is potential for indirect (visual) impacts to occur.

As no heritage items or significant archaeology would be directly impacted by the works associated with Stage 1, the works are not expected to have a cumulative impact on archaeological resources or significant fabric within the Westmead area. Cumulative visual impacts on heritage items as a result of Stage 1 are not expected to be significant.

8.2.2 Parramatta metro station construction site

A summary of heritage impacts of major infrastructure and commercial projects within the vicinity of the Parramatta metro station construction site has been provided in Table 98.

Table 98: Summary of major infrastructure and commercial projects within the vicinity of the Parramatta metro station construction site

Project	Description	Heritage impacts
Parramatta Light Rail	Transport for New South Wales is developing the Parramatta Light Rail (Stage 1) to deliver a light rail network from Westmead to Carlingford via Parramatta CBD and Camellia	<ul style="list-style-type: none"> The Parramatta North Precinct portion of this project would have moderate direct impact, moderate visual impact and minor indirect impact to the SHR listed 'Cumberland District Hospital Group' (SHR 00820, s170 register, PLEP I00820); minor impacts to cultural landscape elements within the broader setting for the 'Parramatta Female Factory and Institutions Precinct' (NHL Place ID 106234); minor direct, visual and potential indirect impacts to the State significant 'St Patrick's Roman Catholic Cemetery' (SHR 01880, PLEP I388); neutral visual and negligible potential indirect impact to the State significant 'Oddfellows Arms Inn' (SHR 276, PLEP I00276); moderate direct impact, moderate visual impact and minor potential indirect impact to the locally significant stone kerbing and tree planting (PLEP I362); and negligible to minor visual and potential indirect impacts to an additional 15 locally listed items The Parramatta CBD Precinct portion of this project would have moderate direct, major visual and minor potential indirect impacts to the State significant 'Lennox Bridge' (SHR 00750, s170 register, PLEP I00750); moderate direct and visual, and minor potential indirect impacts to the State significant

Project	Description	Heritage impacts
		<p>'Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve)' (SHR 1863, s170 register, PLEP A2); moderate direct and visual, and minor potential indirect impact to the locally significant Alfred Square (and potential archaeological site) (SHR nominated, PLEP I686); negligible to neutral potential indirect and visual impacts to an additional nine State significant items; and negligible to minor visual and potential indirect impacts to an additional 50 locally significant items.</p> <ul style="list-style-type: none"> Overall the project has the potential to impact historical archaeology of State and local significance
220-222 Church Street and 48 Macquarie Street, Parramatta	Demolition of all existing structures; the development of a 25 storey commercial office tower fronting Macquarie Street and a five storey commercial office building fronting Church Street	<ul style="list-style-type: none"> The development is adjoining or within close proximity to a number of locally and state heritage items and holds a view corridor and relationship to the World heritage listed Old Government House and Domain The development has been assessed as having no adverse or unacceptable direct impact upon the heritage significance of adjoining or nearby heritage items The development would significantly alter the streetscape which primarily comprises one to two storey commercial developments The development has been assessed as having potential to contain Aboriginal and historic archaeology
61B George Street, Parramatta	Demolition of existing structures and the development of a four storey	<ul style="list-style-type: none"> The development has not been assessed for heritage impact, however it directly adjoins a local heritage item and is within the vicinity of two State heritage items. The development is likely to alter the existing streetscape of this section of George Street which primarily comprises one to two storey commercial developments
89 George Street, Parramatta	Demolition of existing buildings; development of a commercial building	<ul style="list-style-type: none"> The development would have major adverse impact on the setting and views of the State Significant 'Perth House and Stables' (SHR 00155; PLEP I39)
Macquarie Street residential development (142-154 Macquarie Street, Parramatta)	Demolition of all existing structures; construction of a 60 storey residential development and two towers of 35 and 25 storeys	<ul style="list-style-type: none"> The development within the vicinity of the State Significant 'Ancient Aboriginal and Early Colonial Landscape' (SHR 01863); 'Experiment Farm Cottage' (SHR 00768); Hambledon Cottage (SHR 01888); Harrisford (SHR 00248); and Elizabeth Farm (SHR 00001), having a minor to major impact on the setting and views of a number of these items. In addition, the project would be in view from the World Heritage Listed 'Old Government House and Government Domain' Overall, the project has the potential to majorly impact historical archaeology of State significance
116 Macquarie Street and 7 Charles Street Parramatta (Panel reference: 2017SWC087DA)	Demolition of all existing structures; development of a 48 storey mixed use tower	<ul style="list-style-type: none"> The development site has been assessed as having potential for Aboriginal objects, including contact archaeology, which would be directly impacted by the proposed works

Project	Description	Heritage impacts
Parramatta North Urban Transformation Area (Former Cumberland Hospital site) – UrbanGrowth NSW	Protect and enhance heritage significant sites, deliver housing, cultural uses and employment	<ul style="list-style-type: none"> The project is assessed as having potential direct and visual impacts on significant structures within the Cumberland Precinct and the Sports and Leisure Precinct including the 'Cumberland District Hospital Group' (SHR 00820, s170 register, PLEP I00820); 'Norma Parker Centre/Kamballa' (SHR 00811, PLEP I00811); and additional locally listed items.
99-119 Macquarie Street, Parramatta	The proposal involves a 14 storey mixed use building envelope with 2-6 storey basement envelope	<ul style="list-style-type: none"> The project is assessed as having no direct impact to built heritage, with potential for indirect impacts including changes to view lines The project has the potential to impact significant archaeological resources.

8.2.2.1 Discussion of cumulative impacts for Parramatta metro station construction site

The Parramatta metro station construction site would require the demolition of all extant buildings within the construction site footprint except for two heritage-listed buildings. There is potential for impacts to occur to heritage-listed buildings which directly abut structures due for demolition. However, demolition works would be controlled so that damage to significant fabric of these items would be minimised or avoided.

The Parramatta and North Parramatta commercial areas are undergoing significant development, with significant alterations to the urban character of the city with new high rise buildings being constructed. In addition to this, the Parramatta Light Rail project (Stage 1) will install a major new infrastructure element throughout the Parramatta and North Parramatta commercial areas. The projects outlined in Table 98 would result in a number of impacts to heritage significant items throughout the precinct and those within the Parramatta metro station construction site.

As no heritage items are being majorly impacted (removed) during Stage 1, and minor physical impacts would be controlled during Stage 1 works, the proposed works would not result in cumulative impacts to significant fabric or heritage curtilages. The Stage 1 works are expected to result in moderate cumulative impacts to heritage setting of items which would be impacted by both the Parramatta Light Rail project (Stage 1) and the Parramatta metro station construction site including Kia Ora (Parramatta LEP Item No. I716) and Horse Parapet Façade (and potential archaeological site (Parramatta LEP Item No. I656). The removal of tall modern structures from the site may improve sightlines for the low-lying heritage-listed structures in this precinct, temporarily, during the construction period therefore having a positive cumulative impact in this regard.

Archaeological remains related to early convict huts in Parramatta are a rare resource of significant research value. Stage 1 has the potential to directly impact several predicted convict huts, further reducing the diminishing archaeological resource which is unique to Parramatta. Early nineteenth century archaeological remains, which are of research value for understanding the commercial development of Parramatta and the early colony, would also be impacted by Stage 1.

Due to the significant pace of development in the Parramatta area, these archaeological resources are being increasingly reduced, resulting in a cumulative loss throughout the precinct and within the Parramatta metro station construction site. Archaeological management of these resources which would be conducted as part of Stage 1 would provide a valuable offset but would not reduce the degree of impact to this resource. Overall, Stage 1 would result in a moderate to major cumulative impact to significant archaeological resources in Parramatta depending on the nature of archaeological remains identified.

8.2.3 Clyde stabling and maintenance facility construction site

A summary of heritage impacts of major infrastructure and commercial projects within the vicinity of the Clyde stabling and maintenance facility construction site has been provided in Table 99.

Table 99: Summary of major infrastructure and commercial projects within the vicinity of the Clyde stabling and maintenance facility construction site

Project	Description	Heritage impacts
Viva Energy Clyde Western Area Remediation Project	The proposal involves the remediation of contaminated soils associated with former oil refinery activities to facilitate future development of the land for other purposes permissible under the existing land use zoning	<ul style="list-style-type: none"> Assessed as having a potential indirect impact on the Lower Duck River Wetlands Assessed as having a direct impact on the heritage significance of the Clyde Refinery
Clyde Terminal Conversion Project	Demolition of existing processing units; conversion of part of the existing Clyde Refinery assets to receive, store, blend and distribute finished products	<ul style="list-style-type: none"> Assessed as having a negative impact on the heritage significance of the former Clyde Refinery Potential impact to archaeological evidence of the original John Fell & Co. refinery

8.2.3.1 Discussion of cumulative impacts for Clyde stabling and maintenance facility construction site

The Clyde stabling and maintenance facility construction site would require the removal of all structures across the site, with the exception of the façade of the locally heritage listed RTA Depot (Parramatta LEP Item No. I576). Stage 1 would also include civil construction works for the stabling and maintenance facility and the excavation and construction of the dive structure and tunnel portal at Rosehill.

The existing environment surrounding the Clyde stabling and maintenance facility construction site is industrial. The study area is set within the RTA Depot, a heavily modified industrial landscape north of the Duck River; and the Sydney Speedway and surrounding industrial streetscape, south of the Duck River. The wider context surrounding the Clyde stabling and maintenance facility site construction site is predominantly industrial, including the historic Capral Aluminium site to the east. The Rosehill Gardens racecourse is located to the north. Duck River, a tributary of the Parramatta River, is located running through the study area and includes the heritage listed Wetlands ecosystem. Duck River provides a natural barrier between the study area and industrial context of Silverwater beyond.

Clyde industrial area is undergoing a number of developments, as seen above in Table 99, including the Viva Energy Clyde Western Area Remediation Project and the Clyde Terminal Conversion Project which are expected to have an impact on the heritage significance of the former Clyde Refinery as well as impacting the overall character and amenity of the suburb. While the Clyde stabling and maintenance facility construction site would not impact heritage items or archaeology it would result in a cumulative impact to the changing setting and a move away from the historic land use of the site. Although this cumulative impact to landscape and setting should be noted, there would be no cumulative impacts to listed heritage items as a result of the Stage 1.

8.2.4 Silverwater services facility construction site

8.2.4.1 Discussion of cumulative impacts for Silverwater services facility construction site

There are no heritage items within the Silverwater services facility construction site, or within its direct vicinity. The existing environment surrounding the Silverwater services facility construction site is industrial; a heavily modified landscape. The study area is set within an existing vacant industrial lot, at the corner of Silverwater Road and Derby Street. Construction activities at the construction site would include shaft excavation at the corner of Silverwater Road and Derby Street. As heritage impacts are not expected there would not be any cumulative heritage impacts at this site.

8.2.5 Sydney Olympic Park metro station construction site

A summary of heritage impacts of major infrastructure and commercial projects within the vicinity of the Sydney Olympic Park metro station construction site has been provided in Table 101.

Table 100: Summary of major infrastructure and commercial projects within the vicinity of the Sydney Olympic Park metro station construction site

Project	Description	Heritage impacts
Parramatta Light Rail Stage 2	Development of a new light rail network connecting Parramatta Light Rail (Stage 1) and the Parramatta CBD to Ermington, Melrose Park, Wentworth Point and Sydney Olympic Park along a nine-kilometre route	<ul style="list-style-type: none"> Potential indirect impacts to State significant State Abattoirs

8.2.5.1 Discussion of cumulative impacts for Sydney Olympic Park metro station construction site

The Sydney Olympic Park metro station would require the demolition of all extant structures within the construction site and is expected to have a direct impact on the curtilage of the State significant 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) although significant fabric would not be impacted.

The Sydney Olympic Park metro station construction site is within the vicinity (directly adjacent) to a number of developments, including the proposed route of the Parramatta Light Rail (Stage 2) project. The Parramatta Light Rail (Stage 2) route is expected to run directly adjacent to the State Abattoirs along Dawn Fraser Avenue, however this is not expected to result in major heritage impacts.

As the Parramatta Light Rail (Stage 2) is expected to have relatively minor impacts to the State Abattoirs, potential cumulative impacts to the items in regard to Stage 1 would be minor. Cumulative impacts to setting and amenity of the surrounding area would also be minor as the current urban context comprises a combination of commercial buildings, retail development and high density residential apartment buildings which do not have associated heritage values. Cumulative impacts to archaeological resources are not expected.

8.2.6 North Strathfield metro station construction site

A summary of heritage impacts of major infrastructure and commercial projects within the vicinity of the North Strathfield metro station construction site has been provided in Table 101.

Table 101: Summary of major infrastructure and commercial projects within the vicinity of the North Strathfield metro station construction site

Project	Description	Heritage impacts
North Strathfield Station Upgrade	Installation of three elevators, accessible on-street parking space, updated kiss-and-ride area on Queen Street; Family accessible toilet and ambulant toilet; updates to security and CCTV	<ul style="list-style-type: none"> Potential direct impacts to s170 register listed North Strathfield Station

8.2.6.1 Discussion of cumulative impacts for North Strathfield metro station construction site

The North Strathfield metro station construction site is alongside the existing North Strathfield Station to the west that is serviced by the T9 Northern Line. The existing environment comprises an open setting located between early 20th century commercial and residential development to the east and the existing rail corridor to the west. A freight line track is located west of the construction site below ground level, beneath the existing track surface. North Strathfield Station is partly surrounded by a variety of trees and landscaping along the western side of Queen Street, including the heritage listed Street Trees and garden features associated with the eastern entry to the station. The eastern side of Queen Street is generally composed of low density single-story residential dwellings and two storey commercial buildings.

The North Strathfield metro station construction site would have only a minor impact on the curtilage of the s170 listed North Strathfield Railway Station and would not impact significant fabric, therefore any cumulative impact in relation to upgrade works at the station are minor.

8.2.7 Burwood North Station construction site

8.2.7.1 Discussion of cumulative impacts for Burwood North Station construction site

There are no additional major infrastructure and commercial projects within the Burwood North Station construction site. The existing environment around the Burwood North Station construction site includes low to medium density early to mid 20th century commercial development; and low density mid to late 20th century residential development. The site is in close proximity to a number of heritage items, although as no other project impacts have been identified, Stage 1 would not have a cumulative impact.

8.2.8 Five Dock Station construction site

A summary of heritage impacts of major infrastructure and commercial projects within the vicinity of the Five Dock Station construction site has been provided in Table 102.

Table 102: Summary of major infrastructure and commercial projects within the vicinity of the Five Dock Station construction site

Project	Description	Heritage impacts
Five Dock Streetscape Upgrade	Planting of street trees and shrubs; installation of high quality pavements and street furnishings; installation of street furniture, parking facilities and pedestrian crossings; and improvements to the drainage system	<ul style="list-style-type: none"> The proposal is within the vicinity of a number of heritage items; however, no direct impacts to heritage listed items are anticipated

8.2.8.1 Discussion of cumulative impacts for Five Dock Station construction site

The existing environment within the Five Dock Station construction site mainly comprises mid to late twentieth century low to medium density commercial development along the Great North Road, within the town centre of the suburb; the Second Avenue Car Park; and low density residential buildings. Stage 1 would include demolition of existing structures within the construction site footprint. The western construction site incorporates an area utilised for the Five Dock Streetscape Upgrade project which had a positive impact on the visual amenity of the area. As no heritage impacts as a result of adjacent projects have been identified, Stage 1 would not have a cumulative impact.

8.2.9 The Bays Station construction site

A summary of heritage impacts of major infrastructure and commercial projects within the vicinity of The Bays Station construction site has been provided in Table 103.

Table 103: Summary of major infrastructure and commercial projects within the vicinity of The Bays Station construction site

Project	Description	Heritage impacts
The Bays road relocation works REF	Relocation of the existing Ports Access Road to within the SHR curtilage of the White Bay Power Station	<ul style="list-style-type: none"> Moderate direct impact and minor indirect impact on the State significant White Bay Power Station Minor direct and indirect impact on the locally significant Glebe Island Silos Potential minor direct impact on the locally significant White Bay Power Station (Inlet) Canal.
M4-M5 Link – Rozelle Interchange and ventilation facilities, Iron Cove Link surface works and ventilation facility	Construction of the M4-M5 Link which would comprise a new, tolled multi lane road linked between the proposed M4 East at Haberfield and the proposed new M5 at St Peters	<ul style="list-style-type: none"> Minor adverse impact to setting and curtilage of White Bay Power Station High potential for state significant archaeology within the curtilage of the White Bay Power Station

Project	Description	Heritage impacts
Sydney Metro City & Southwest (Chatswood to Sydenham)	Construction and operation of a 15.5 km metro line from Chatswood, under Sydney Harbour and through Sydney's CBD out to Sydenham. Works would include the installation of a truck marshalling yard at White Bay	<ul style="list-style-type: none"> Potential indirect impacts to State heritage listed White Bay Power Station and associated s170 heritage items
Glebe Island concrete batching plant and aggregate handling	Construction and operation of a new aggregate handling and concrete batching facility	<ul style="list-style-type: none"> The project would result in direct impacts to the potential archaeological remains associated with the first Glebe Island Bridge, as well as, impacts to some of the identified views to the second Glebe Island Bridge
Western Harbour Tunnel and Warringah Freeway Upgrade	Development of a new tolled motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network connecting to the Beaches Link and Gore Hill Freeway Connection project. Construction activities would take place at the Rozelle Rail Yards and at White Bay	<ul style="list-style-type: none"> The project has the potential to result in direct and indirect impacts to the Glebe Island Bridge.
Glebe Island Multi-User Facility	Construction and operation of a ship off-loading, storage and dispatch facility for bulk construction materials such as sand, aggregates and other dry bulk construction materials. The proposal site is located within land owned by the Port Authority of the eastern site of Glebe	<ul style="list-style-type: none"> Potential indirect impacts to State heritage listed White Bay Power Station and associated s170 heritage items
The Bays Precinct Urban Transformation	20-30 year plan providing for a mix of cultural, maritime, recreational, retail and commercial uses around eight waterfront locations including White Bay Power Station, Glebe Island, White Bay, Blackwattle.	<ul style="list-style-type: none"> Potential indirect impacts to State heritage listed White Bay Power Station and associated s170 heritage items

8.2.9.1 Discussion of cumulative impacts for The Bays Station construction site

The Bays Station construction site would encroach upon around 0.7 hectares of the SHR curtilage of the White Bay Power Station, involving cut and cover excavation along the foreshore of White Bay, and the demolition of all existing structures (several small industrial buildings) within the construction site in preparation for excavation work. The total heritage curtilage of the White Bay Power Station covers an area of around 3.9 hectares, and impacts would therefore occur within around 17 per cent of the item's curtilage.

The Bays is undergoing significant development, including transport links and industrial development, which has the potential to alter the maritime-industrial character and amenity of the area. The existing environment surrounding the construction site comprises a combination of industrial and maritime development within a harbourside setting near the historic suburbs of Balmain and Rozelle beyond.

There are a number of projects within the vicinity of The Bays Station construction site which are expected to result in direct heritage impact to the White Bay Power Station curtilage. This includes the M4-M5 Link – Rozelle Interchange, Glebe Island concrete batching plant and aggregate handling project, Western Harbour Tunnel and Warringah Freeway Upgrade, Glebe Island Multi-User Facility, and The Bays Precinct Urban Transformation project, as seen above in Table 103. In addition, the proposed relocation of the existing Ports Access Road would impact State significant heritage. As Stage 1 would also impact the curtilage of the White Bay Power Station, cumulative impact to the curtilage would be moderate, although Stage 1 does not propose to impact significant fabric. It is expected significant archaeology is located within the Stage 1 construction site. The M4-M5 link and Western Harbour Tunnel and Warringah Freeway Upgrade are also expected to impact non-Aboriginal archaeology therefore cumulative impacts as a result of the Stage 1 project area expected. Depending on the nature of archaeological remains located within The Bays Station construction site cumulative impacts on archaeological resources would be moderate.

As The Bays Station construction site would include impacts to the SHR curtilage of the White Bay Power Station and use of a large area to the east as an ancillary site, visual impacts to the White Bay Power Station are expected. As the area is currently industrial in nature the use of the area as an ancillary site would be in keeping with its current character. Given that other projects such as the M4-M5 Link, Western Harbour Tunnel and Warringah Freeway Upgrade are proposing to utilise the area around the White Bay Power Station for ancillary and construction sites there would be some cumulative visual impacts, although as these uses align with the current industrial character of the locality cumulative impacts would be minor to moderate or increased to moderate.

The Bays road relocation works and Stage 1 could both have a potential minor impact to the White Bay Power Station (Inlet) Canal, a locally significant heritage item. The Bays road relocation works and Stage 1 could both have a potential minor impact to the White Bay Power Station (Inlet) Canal, a locally significant heritage item. In addition, The Bays is undergoing significant development, including transport links and industrial development, which has the potential to alter the maritime-industrial character and amenity of the area. However, these additional development projects have not identified heritage impact to the White Bay Power Station (Inlet) Canal. As Stage 1 would impact the curtilage of the White Bay Power Station (Inlet) Canal, cumulative impact to the curtilage would be minor, although Stage 1 does not propose to impact significant fabric. However, little information is available regarding the precise depth of the heritage item. Following the confirmation of the relative depth of the heritage item, in addition to further excavation detail for the proposal and Stage 1, the direct impact on the item may be reduced to neutral.

8.2.10 Summary of cumulative impacts

Construction site	Summary of cumulative impacts	Potential
Westmead metro station	<ul style="list-style-type: none"> Stage 1 is not expected to result in impact to heritage listed items or archaeological resources The surrounding area is undergoing moderate development however these developments are not expected to result in impact to heritage listed items or archaeological resources 	Nil

Construction site	Summary of cumulative impacts	Potential
Parramatta metro Station	<ul style="list-style-type: none"> Stage 1 works have the potential to cause impact to heritage listed items and archaeological resources The surrounding area is undergoing significant development which has the potential to result in direct impact to heritage listed items or archaeological resources 	Moderate – major
Clyde stabling and maintenance facility	<ul style="list-style-type: none"> Stage 1 is not expected to result in impact to heritage listed items or archaeological resources The surrounding area is undergoing moderate development however these developments are not expected to result in impact to heritage listed items or archaeological resources 	Nil
Silverwater services facility	<ul style="list-style-type: none"> There are no heritage items within the Silverwater services facility or within its direct vicinity. In addition, the site has been assessed as having nil archaeological potential 	Nil
Sydney Olympic Park metro station	<ul style="list-style-type: none"> Stage 1 works have the potential to cause impact to heritage listed items, however impact to archaeological resources are not expected The surrounding area is undergoing moderate development; however, heritage and archaeological impact are not expected 	Nil – minor
North Strathfield metro station	<ul style="list-style-type: none"> Stage 1 works and additional development within the area is expected to cause impact to heritage items Archaeological impact is not expected from Stage 1 works or additional development within the area 	Minor
Burwood North Station	<ul style="list-style-type: none"> Stage 1 works are not expected to cause impact to heritage listed items or archaeological resources There are no additional developments within the immediate vicinity of the construction site 	Nil
Five Dock Station	<ul style="list-style-type: none"> Stage 1 works are not expected to cause impact to heritage listed items or archaeological resources Additional development within the immediate vicinity of the construction site is not expected to cause impact to heritage listed items or archaeological resources 	Nil
The Bays Station	<ul style="list-style-type: none"> Stage 1 works have the potential to cause impact to heritage listed items and archaeological resources The surrounding area is undergoing significant development which has the potential to result in direct impact to heritage listed items or archaeological resources 	Minor – moderate

9.0 MITIGATION AND MANAGEMENT MEASURES

9.1 Mitigation measures

Mitigation measures identified in other technical papers and other chapters of the Environmental Impact Statement that are relevant to the management of potential non-Aboriginal heritage impacts include:

- Chapter 11 (Construction noise and vibration – Stage 1) with respect to management of potential vibration impacts (Technical Paper 2)
- Chapter 15 (Landscape character and visual amenity – Stage 1) with respect to management of potential visual impacts during construction (Technical Paper 5 – Landscape character and visual impact assessment)
- Chapter 18 (Groundwater and ground movement – Stage 1) with respect to management of settlement.

As detailed in the Construction Environmental Management Framework (Appendix D of the Environmental Impact Statement), a heritage management plan would be prepared to mitigate and manage heritage impacts at construction sites. In addition to this, the Sydney Metro Exhumation Management Plan and the Sydney Metro Unexpected Finds Procedure would be implemented to manage unexpected archaeological finds and human remains.

Further mitigation measures that would be implemented to address potential impacts on non-Aboriginal heritage sites and areas of archaeological potential are listed in Table 104 below.

Table 104: Non-Aboriginal heritage mitigation measures

ID	Mitigation measure	Applicable location(s) ²²⁹
NAH1	<p>Archival recording and reporting of the following heritage items would be carried out in accordance with the NSW Heritage Office's <i>How to Prepare Archival Records of Heritage Items</i> (1998), and <i>Photographic Recording of Heritage Items Using Film or Digital Capture</i> (2006):</p> <ul style="list-style-type: none"> • Shops (and potential archaeological site) (PLEP Item No. I703) • Kia Ora (and potential archaeological site) (PLEP Item No. I716) • RTA Depot (PLEP Item No. I576) • State Abattoirs (SEPP Listing No. A) • White Bay Power Station (SHR Listing No. 01015) 	PMS, CSMF, SOPMS, TBS

²²⁹ WMS: Westmead metro station; PMS: Parramatta metro station; CSMF: Clyde stabling and maintenance facility; SSF: Silverwater services facility; SOPMS: Sydney Olympic Park metro station; NSMS: North Strathfield metro station; BNS: Burwood North Station; FDS: Five Dock Station; TBS: The Bays Station; Metro rail tunnels: Metro rail tunnels not related to other sites (eg tunnel boring machine works); PSR: Power supply routes.

ID	Mitigation measure	Applicable location(s) ²²⁹
NAH2	A method for the demolition of existing buildings and / or structures at the specified construction sites would be developed to minimise direct and indirect impacts to adjacent and / or adjoining heritage items.	PMS, CSMF, SOPMS, TBS
NAH3	Prior to commencement of demolition of heritage elements at White Bay Power Station within The Bays construction site, significant heritage fabric would be identified for salvage and reuse opportunities for salvaged fabric considered.	TBS
NAH4	The policies of the White Bay Power Station Conservation Management Plan (CMP) would be considered in regard to visual impacts of the Stage 1 works, particularly the acoustic shed (or other acoustic measures) and any temporary structures. Significant view lines would be retained during Stage 1 works.	TBS
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 (HIP) for future project stages.	All
NAH6	An archaeological research design(s) would be prepared and implemented to identify the need for archaeological testing or monitoring. Archaeological mitigation measures recommended in the archaeological research design would be carried out in accordance with Heritage Council guidelines, and where appropriate supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology.	All
NAH7	An Archaeological Excavation Report would be prepared by the Excavation Director and would be provided to the NSW Heritage Division within two years of the completion of archaeological excavations specified in the archaeological research design(s).	All

ID	Mitigation measure	Applicable location(s) ²²⁹
NAH8	<p>In the event that State significant archaeologically 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) • An Archaeological Method Statement (AMS) 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. 	PMS
NAH9	The impacted gardens within the State Abattoirs would be reinstated with sympathetic landscaping that is in keeping with the provisions of the Conservation Management Plan.	SOPMS

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