
Technical Paper 5

Statement of Heritage Impact – Built Heritage

Parramatta Light Rail Stage 2
Environmental Impact Statement



STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

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GLOSSARY AND ABBREVIATIONS

Term/Acronym	Definition
Burra Charter	The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013
CHL	Commonwealth Heritage List
CMP	Conservation Management Plan
DCP	Development Control Plan
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	NSW Environmental Planning and Assessment Regulation 2021
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
GAO	Government Architect's Office
GPOP	Greater Parramatta and the Olympic Peninsula
Heritage Act	NSW <i>Heritage Act 1977</i>
HNSW	Heritage NSW
ICOMOS	International Council on Monuments and Sites
LEP	Local Environmental Plan
LGA	Local Government Area
LSJP	Lucas Stapleton Johnson and Partners Pty Ltd
NHL	National Heritage List
NSW	New South Wales
Project site	Refers to the to the area that would be directly disturbed by construction of the project (for example, as a result of ground disturbance and the construction of foundations for structures). It includes the location of construction activities, compounds and work sites, and the location of permanent infrastructure.
Potential heritage item	An item not currently listed on a statutory register that may be of local or state heritage significance.
REP	Regional Environmental Plan
RNE	Register of the National Estate
SEARs	Secretary's environmental assessment requirements
SEPP	State Environmental Planning Policy
SEPP (PCRC)	State Environmental Planning Policy (Precincts – Central River City) 2021
SEPP (BC)	State Environmental Planning Policy (Biodiversity and Conservation) 2021
SHI	State Heritage Inventory
SHR	State Heritage Register
SOHI	Statement of Heritage Impact
SOPA	Sydney Olympic Park Authority
SSI	State significant infrastructure
S170	Section 170 Heritage and Conservation Register
Transport for NSW	Transport for NSW is the lead agency of the NSW Transport cluster
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHL	World Heritage List

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Term/Acronym	Definition
World Heritage Convention	Convention Concerning the Protection of World Cultural and National Heritage

EXECUTIVE SUMMARY

Transport for NSW proposes to construct and operate Stage 2 of Parramatta Light Rail ('the project'). Stage 2 would connect the Parramatta CBD and Stage 1 to Camellia, Rydalmere, Ermington, Melrose Park, Wentworth Point and Sydney Olympic Park ('the project site').

The environmental impact statement (EIS) has been prepared to support an application for approval of the project in accordance with Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). It addresses the environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs).

This report has been prepared as part of the EIS to assess the potential built heritage impacts from constructing and operating the project.

A detailed assessment of Aboriginal cultural heritage is presented in Technical Paper 4 (Preliminary Aboriginal Cultural Heritage Assessment Report). An assessment of historical (non-Aboriginal) and maritime archaeology is presented in Technical Paper 6 (Historical Archaeological Assessment).

Heritage significance

There are no items of world heritage significance or national heritage significance located within, adjacent to, or near the project site.

Six heritage items of State and local heritage significance are located within the project site. A further six heritage items of State and local heritage significance are located immediately adjacent to the project site. Nine items of State and local heritage significance are located within 50 metres of the project site.

Four potential heritage items were identified during the assessment. One potential heritage item is located within the project site and three adjacent to the project site.

Summary of heritage impact

This report has assessed the impacts of the project on built heritage for all heritage items within the project site and those immediately adjacent. The impact assessment considered direct, visual and potential indirect impacts of the project's construction and operation.

The project would have **little to no direct impact** and a **moderate visual impact** on *Newington Armament Depot and Nature Reserve* (State Heritage Register (SHR) No. 01850).

The project would have **little to no direct impact**, **little to no visual impact** and a **minor indirect impact** on:

- *Sewage Pumping Station 67* (SHR No. 01643, SHI No. 4571724, Parramatta local environmental plan (LEP) Item No. I01643)
- *State Abattoir heritage conservation area* (State Environmental Planning Policy (Precincts – Central River City 2021) (SEPP (PCRC)) – Area No. 1) and *State Abattoir locality* (SEPP (PCRC) Items No. 1 & 2)
- *Pumping Station* (Parramatta LEP Item No. I5)
- *Parramatta Town Hall (and potential archaeological site)* (Parramatta LEP Item No. I650)
- *Bicentennial Square and adjoining buildings* (Parramatta LEP Item No. I651)
- *Murrays' Building (and potential archaeological site)* (Parramatta LEP Item No. I652)
- *Centennial Memorial Clock* (Parramatta LEP Item No. I654)
- *Shop (and potential archaeological site)* (Parramatta LEP Item No. I655)
- *Horse parapet façade and potential archaeological site* (Parramatta LEP Item No. I656)
- *Telstra House (former post office) (and potential archaeological site)* (Parramatta LEP Item No. I657)
- *HMV (former Commonwealth Bank) (and potential archaeological site)* (Parramatta LEP Item No. I658)

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- *St John's Parish Hall* (Parramatta LEP Item No. I713).

The project would have a **minor direct impact** and a **moderate visual impact** on *Millennium Parklands Precinct* (SEPP (PCRC) Item A) / *Newington Armament Depot and Nature Reserve conservation area* (SEPP (PCRC) Area B).

The project would have **little to no direct impact**, a **moderate visual impact** and a **minor indirect impact** on *Wharf* (Ryde LEP 2014 Item No. 165), *Ermington Wharf* (Parramatta LEP Item No. I82) and *Former Pennant Hills Wharf* (State Environmental Planning Policy (Biodiversity Conservation) 2021 (SEPP (BC) Item No.40.)

The project would have a **minor direct impact**, a **moderate visual impact** and **minor indirect impact** on *Wetlands* (Parramatta LEP Item No. I1).

The project would have a minor to **moderate direct impact**, **minor indirect impact** and **little to no visual impact** on *Tram alignment* (Parramatta LEP Item No. I6).

The project would have a **moderate to major direct impact**, a **major visual impact** and **minor indirect impact** on *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64).

This report has also considered the impact of the project on potential heritage items. Potential heritage items are items or places that have been identified and assessed by this project as likely to meet the Heritage NSW criteria for heritage significance and are not currently included on a statutory heritage list or register.

The project would have a **moderate direct impact**, a **moderate visual impact** and **minor indirect impact** on House at 46 John Street, Rydalmere (potential heritage item).

The project would have a **little to no direct impact**, a **moderate visual impact** and **minor indirect impact** on:

- House at 69 South Street, Rydalmere (potential heritage item)
- House at 71 South Street, Rydalmere (potential heritage item).

The project would have **little to no direct impact**, **minor visual impact** and **minor indirect impact** on House at 67 Boronia Road, Ermington (potential heritage item).

The following heritage items would not be impacted by the project:

- *St John's Anglican Cathedral* (SHR No. 01805, Parramatta LEP Item No. I01805)
- *Rose Farm House* (Parramatta LEP Item No. I63)
- *Parramatta Town Hall (and potential archaeological site)* (Parramatta LEP Item No. I650)
- *Warden's cottage (verger's cottage)* (Parramatta LEP Item No. I653).
- *HMV (former Commonwealth Bank) (and potential archaeological site)* (Parramatta LEP Item No. I658).

Management recommendations for each heritage item are presented in Section 8 of this report.

1 INTRODUCTION

1.1 Parramatta Light Rail

The NSW Government's Greater Sydney Region Plan *A Metropolis of Three Cities* (Greater Sydney Commission, 2018) outlines a vision for a three-city metropolis. The Central River City covers the four local government areas of the City of Parramatta, Blacktown City, Cumberland City and The Hills Shire. *A Metropolis of Three Cities* highlights Greater Parramatta as the focal point for the Central River City, with employment growth and public transport being of key importance.

The Greater Parramatta and the Olympic Peninsula (GPOP) area, which extends from Westmead and Parramatta in the west to Sydney Olympic Park to the east, is fast emerging as the heart of Sydney's Central River City and is set to grow and change significantly over the next 20 years. Forecasts predict that GPOP will accommodate almost 170,000 new residents by 2041. Employment opportunities will also grow, with an additional 100,000 jobs predicted by 2041 (SGS, 2017).

Parramatta Light Rail will deliver an integrated light rail service that supports the population and employment growth expected throughout GPOP. It will integrate with existing and future modes of transport, including buses, trains, ferries and active transport (pedestrian and cycle networks), as well as Sydney Metro West services and the existing road network.

Parramatta Light Rail will be delivered in stages to keep pace with development:

- Stage 1 will connect Westmead to Carlingford via the Parramatta central business district (CBD) and Camellia. The construction and operation of Parramatta Light Rail Stage 1 was approved by the NSW Minister for Planning in May 2018. Major construction is underway, with the track installation complete and light rail stop construction in progress. Stage 1 is expected to start operating in 2024. Further information on Stage 1 is provided at [Parramatta Light Rail](#)
- Transport for NSW is now proposing to construct and operate Stage 2 of Parramatta Light Rail ('the project'). Stage 2 would connect the Parramatta CBD and Stage 1 to Camellia, Rydalmere, Ermington, Melrose Park, Wentworth Point and Sydney Olympic Park.

Figure 1.1 provides an overview of Parramatta Light Rail showing both stages.

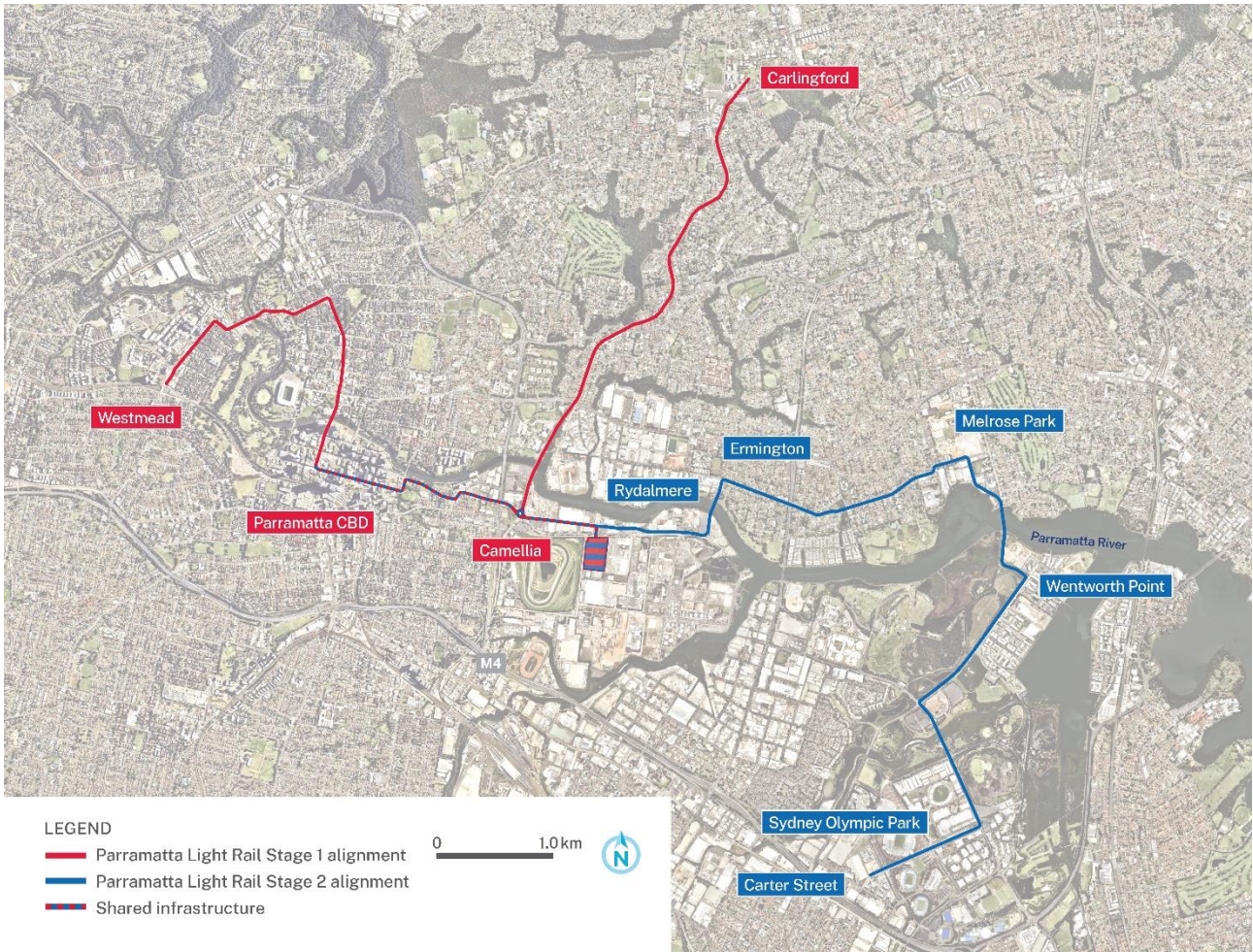


Figure 1.1: Parramatta Light Rail network

1.2 Project overview

The project comprises two main elements:

- construction of about 10 kilometres of light rail infrastructure between Camellia and the Carter Street precinct adjacent to Sydney Olympic Park
- operation of about 13 kilometres of light rail alignment between the Parramatta CBD and the Carter Street precinct, including a section of infrastructure constructed by Parramatta Light Rail Stage 1 between Camellia and the Parramatta CBD.

Further information on the location of the project, and a description of the project site for the purposes of this document, is provided in the environmental impact statement (EIS).

1.2.1 Key features

The key features of the project, which are shown on Figure 1.2, include:

Light rail track and bridges

- a new 10 kilometre long dual light rail track, with 14 stops, between the Parramatta Light Rail Stage 1 line in Camellia and the Carter Street precinct adjacent to Sydney Olympic Park
- two bridges over the Parramatta River between Camellia and Rydalmere, and between Melrose Park and Wentworth Point
- a bridge over Silverwater Road between Rydalmere and Ermington.

Active and public transport integration

The project would also deliver:

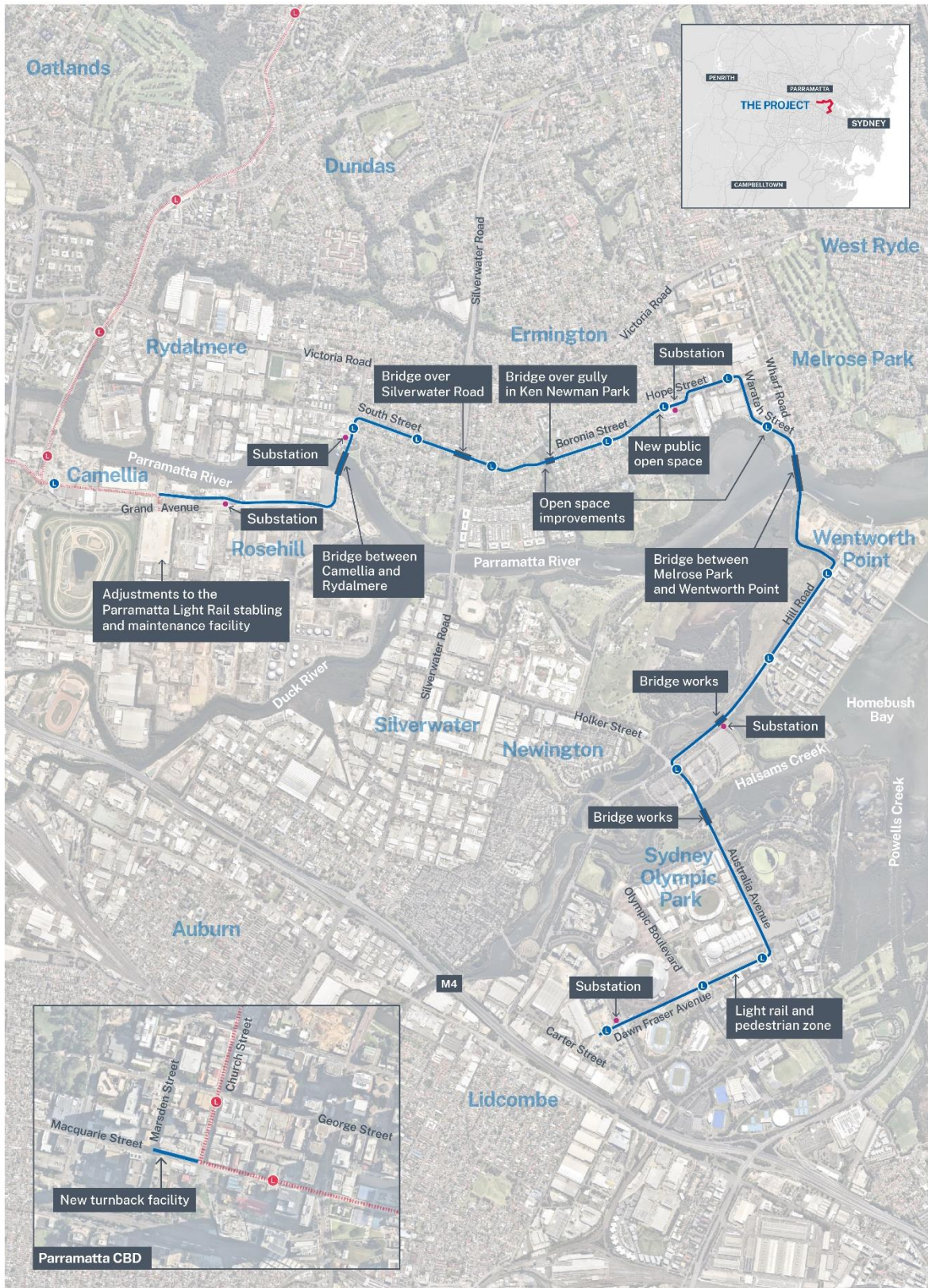
- about 8.5 kilometres of new active transport links between Camellia and the Carter Street precinct, which would connect with the existing cycling and pedestrian network
- interchanges with other forms of public transport, including trains, ferries, buses and Sydney Metro West, with the main interchanges located in the Parramatta CBD, Rydalmere and Sydney Olympic Park
- a light rail and pedestrian zone (no through vehicle access) within Sydney Olympic Park along Dawn Fraser Avenue between Australia Avenue and Olympic Boulevard
- bus access over the proposed bridge over the Parramatta River between Melrose Park and Wentworth Point.

Other works

Works proposed to support the project's operation:

- turnback facilities, including along part of Macquarie Street in the Parramatta CBD
- adjustments to the Parramatta Light Rail stabling and maintenance facility at Camellia
- five new traction power substations to convert electricity to a form suitable for use by light rail vehicles
- new and improved open spaces and recreation facilities at Ken Newman Park, the Atkins Road stop and Archer Park.

Further information on the project's design features is provided in the EIS (see Chapter 6 (Project description – infrastructure and operation)).



LEGEND

- Proposed project alignment
- Proposed project stops
- - - Parramatta Light Rail Stage 1 alignment
- Parramatta Light Rail Stage 1 stops

Figure 1.2 The project

0 1km



Figure 1.2: Key features of the project

1.2.2 Operation

The project would operate between the Parramatta CBD and the Carter Street precinct, using a section of the Parramatta Light Rail Stage 1 alignment and the alignment constructed as part of the project.

Between the Parramatta CBD and Camellia, the project would operate along about three kilometres of the Parramatta Light Rail Stage 1 alignment. Parramatta Light Rail Stage 2 services would terminate at the Stage 1 Parramatta Square stop to allow customers direct and convenient access to Parramatta's CBD, and interchange with Stage 1 light rail services, trains, buses and Sydney Metro West.

From Camellia, the project would operate along the light rail infrastructure proposed as part of Stage 2, terminating at the proposed Carter Street stop.

The project would operate as a turn-up-and-go light rail service from 5am to 1am, seven days a week, in line with Parramatta Light Rail Stage 1. The project would have travel times of around 31 minutes from the Carter Street stop in Lidcombe to the proposed Sandown Boulevard stop in Camellia, and a further seven minutes from the Parramatta Square stop in the Parramatta CBD.

Further information on the project's operation is provided in the EIS (see Chapter 6 (Project description – infrastructure and operation)).

1.2.3 Timing

It is anticipated that construction would start in 2025, subject to obtaining all necessary approvals, and the first passenger services are proposed to start from 2030/2031.

An indicative construction methodology is provided in the EIS (see Chapter 7 (Project description – construction)).

1.2.4 Approval requirements

The project is State significant infrastructure and is subject to approval by the NSW Minister for Planning under Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

The project is also determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and requires approval from the Australian Minister for the Environment and Water.

1.3 Purpose and scope of this report

The EIS has been prepared to support an application for approval of the project in accordance with Division 5.2 of the EP&A Act. It addresses the environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs).

This report has been prepared as part of the EIS to assess the potential impacts to built heritage from constructing and operating the project. The report:

- addresses the relevant SEARs listed in Table 1.1
- describes the existing environment with respect to built heritage
- assesses the impact of constructing and operating the project on built heritage
- recommends measures to mitigate and manage the impacts identified.

The methodology for the assessment is described in Section 1.4.

Table 1.1: SEAR No. 7 Heritage – non-Aboriginal

Requirement	Where it is assessed in this report
1. 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>	Section 2.2.1 identifies environmental heritage items in, or near the project site, while Section 7.1 discusses the direct and indirect impacts on these items, with a summary of heritage impact presented in Section 7.2.
b. items listed on the State, National and World Heritage lists	Section 2.1 identifies no items listed on the National or World Heritage lists. Section 2.2 identifies State heritage items in, or near the project site, while Section 7.1 discusses the direct and indirect impacts on these items, with a summary of heritage impact presented in Section 7.2.
c. heritage items and conservation areas identified in environmental planning instruments applicable to the project area.	Section 2.3 identifies heritage items identified in environmental planning instruments, with a summary of heritage items presented in Section 2.5. Section 7.1 discusses the direct and indirect impacts on these items, with a summary of heritage impact presented in Section 7.2.
2. Where impacts (including cumulative impacts) to State, locally or potentially significant heritage items are identified the assessment must:	
a. identify the heritage significance of and provide statements of heritage impact for all heritage and potential heritage items	Section 6.1 presents established heritage significance of identified statutory heritage items, while Section 6.2 provides an assessment of significance for potential heritage items (not included on statutory registers) identified during the assessment.
b. include historical and maritime archaeological assessments (where relevant)	N/A. This report is limited to built heritage. See Technical Paper 6 (Historical Archaeological Assessment) for historical and maritime archaeological assessment.
c. consider the conservation policies of any relevant conservation management plan	Section 2.2.2 identifies conservation management plans relevant to identified heritage items. Relevant policies within these conservation management plans have been considered in the impact assessment discussion, where relevant, in Section 7.1.
d. 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, drainage infrastructure, contamination remediation and site compounds (as relevant)	Section 7.1 discusses all relevant impacts on identified heritage items, with a summary of heritage impact presented in Section 7.2.
e. outline measures to avoid and minimise those impacts during construction and operation	Section 7.2 presents a summary of heritage impact and mitigation measure by heritage item, while Section 8 provides detailed recommendations and mitigation measures for implementation during each phase of the project.
f. be undertaken by a suitably qualified heritage consultant(s) and/or historical archaeologist.	Section 1.6 lists all authors and contributors to this report.
<i>Note: Where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria.</i>	

1.4 Methodology

This report has been prepared in accordance with the relevant policies of Heritage NSW including *NSW Heritage Manual Statements of Heritage Impacts* (Heritage Office and Department of Urban Affairs & Planning 2002) and *Assessing Heritage Significance* (NSW Heritage Office 2001). This report uses the method of investigation and analysis established by the Australia ICOMOS (International Council on Monuments and Sites) *Charter for the Conservation of Places of Cultural Significance, The Burra Charter 2013* (Burra Charter).

This report has been undertaken using the following methodology:

- searches of all relevant heritage registers to identify items of heritage significance within or near the project site. This has been limited to a distance of 66 metres from the project site boundary for inclusion of vibratory impacts as discussed in Technical Paper 3 (Noise and Vibration)
- analysis of primary and secondary historical resources to understand the historical context and setting of the project and any relevant heritage items to inform the statement of significance
- visual inspection of the project site and immediate surrounds in September 2021 and January 2022 to understand site context and condition of statutory heritage items, as well as identify any potential heritage items
- assessment of potential impact to both statutory heritage items and potential heritage items within and near the project site
- identification of management and mitigation measures for identified impacts on the significance of heritage items.

1.5 Limitations

This Statement of Heritage Impact (SOHI) is limited to an assessment of historic (non-Aboriginal) built heritage.

The heritage significance for statutory items has been limited to established statements of significance. Re-assessment of these values has not been undertaken as part of this report. Aboriginal cultural heritage, historic (non-Aboriginal) archaeology and maritime archaeology have been assessed separately. See Technical Paper 4 (Preliminary Aboriginal Cultural Heritage Assessment Report) and Technical Paper 6 (Historical Archaeological Assessment).

1.6 Authorship

Sarah van der Linde (Senior Heritage Consultant, MA in Cultural Heritage) prepared this SOHI with assistance from Bengi Selvi-Lamb (Heritage Consultant, PhD in Archaeology). Susan Kennedy (Heritage Manager, BA in Anthropology/Archaeology, MA in Maritime Archaeology and Bachelor of Laws) has reviewed this report.

2 LEGISLATIVE CONTEXT

2.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the principal environmental Act at a Commonwealth level. It provides for the protection and management of matters of national environmental significance as defined in the Act. Matters of national environmental significance include but are not limited to flora, fauna, ecological communities and heritage places of national and international importance.

In addition, the EPBC Act applies to actions with a significant impact on the environment where the actions affect, or are taken on, Commonwealth land, or are carried out by a Commonwealth agency (even if that significant impact is not on one of the matters of 'national environmental significance').

The EPBC Act requires approval from the Minister for actions with a significant impact on places included on the National Heritage List or Commonwealth Heritage List.

2.1.1 National Heritage List

The National Heritage List was established under the EPBC Act to protect places of outstanding significance to Australia.

There are **no places** on the National Heritage List located within or near the project site.

2.1.2 Commonwealth Heritage List

The Commonwealth Heritage List was established under the EPBC Act to protect places owned and managed by Commonwealth agencies.

There are **no places** on the Commonwealth Heritage List within or near the project site.

2.2 Heritage Act 1977

The NSW *Heritage Act 1977* (the Heritage Act) is the principal Act for the management of NSW's environmental heritage. It establishes the State Heritage Register (SHR) and includes protection provisions for Interim Heritage Orders, Orders to Stop Work and managing disturbance to archaeological relics (both on land and underwater within the limits of the State). It also requires government agencies to maintain a Heritage and Conservation Register.

To assist management of NSW's environmental heritage, the Heritage Act distinguishes between assets of state and local significance:

- state significance refers to significance to the state in relation to the historical, archaeological, architectural, cultural, social, natural or aesthetic value of an item
- local significance refers to significance to an area in relation to the historical, archaeological, architectural, cultural, social, natural or aesthetic value of an item.

Items may be of State and local significance. Items of local significance may or may not be of significance to the state.

2.2.1 State Heritage Register

The State Heritage Register (SHR) is a statutory register of environmental heritage, with heritage values that have been confirmed as demonstrating importance to the whole of NSW under specific criteria. Listing a place on the register means that prior approval from the NSW Heritage Council is required for major changes to ensure its heritage significance is retained. Section 57 of the Heritage Act outlines what works require approval, and approvals are granted under Section 63 of the Act.

The following built heritage items included on the SHR are located within or near the project site (Figure 2.1 to Figure 2.7):

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- *Newington Armament Depot and Nature Reserve (SHR No. 01850)*
- *Sewage Pumping Station 67 (SHR No. 01643)*
- *St John's Anglican Cathedral (SHR No. 01805).*

The following archaeological item included on the SHR is excluded from this report. This item is discussed in Technical Paper 6 (Historical Archaeological Assessment):

- *Archaeological Site and associated artefacts (45 Macquarie Street, Parramatta) (SHR No. 02027).*

Section 170 Heritage and Conservation Register

Section 170 of the Heritage Act requires government agencies to establish a Heritage and Conservation Register that identifies all assets of environmental heritage that it owns or occupies. Government agencies are required to provide the NSW Heritage Council prior notice of any intention to make the following changes to items listed on the Section 170 Heritage and Conservation Register:

- remove an asset
- transfer ownership of an asset
- cease to occupy an asset
- demolish an item.

Assets must be maintained with due diligence in accordance with the *State Agency Heritage Guide* (NSW Heritage Office 2005). Proposals to alter, dispose or demolish assets of State heritage significance (not listed on the SHR) must be referred to the NSW Heritage Council for comment.

The following items are included on the Sydney Water Section 170 Heritage and Conservation Register (Figure 2.1):

- *Sewage Pumping Station 67 (SP0067) (State Heritage Inventory (SHI) No. 4571724).*

2.2.2 Conservation Management Plans

Conservation management plans (CMPs) relevant to the project site comprise:

- *Newington Armament Depot and Nature Reserve, Sydney Olympic Park Conservation Management Plan (Tanner Architects, 2013)*
- *Abattoir Heritage Precinct, Sydney Olympic Park Conservation Management Plan (Government Architect's Office, 2013)*
- *Millennium Parklands Heritage Precinct Conservation Master Plan (Graham Brooks and Associates, 2003).*

CMPs assess the significance and set out management policies for each item.

2.3 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) provide the statutory basis for planning and environmental assessment in NSW. The EP&A Act provides the framework for environmental planning and development approvals. The EP&A Act includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision-making process.

The EP&A Act contains two parts that impose requirements for planning approval. These are generally as follows:

- Part 4 provides for the control and assessment of 'development' that requires development consent. This includes local, regional and State significant development (SSD)
- Part 5 provides for control and assessment of 'activities' that do not require development consent (Division 5.1) and declared State significant infrastructure (Division 5.2).

The need or otherwise for development control and the relevant approval authority is set out in environmental planning instruments – consisting of local environmental plans (LEPs) and State environmental planning policies (SEPPs).

The project is State significant infrastructure and is therefore subject to assessment and approval by the Minister for Planning under Part 5, Division 5.2 of the NSW EP&A Act.

2.3.1 State Environmental Planning Policy (Precincts – Central River City) 2021

The State Environmental Planning Policy (Precincts – Central River City) 2021 (SEPP (PCRC)) aims to facilitate the development, redevelopment, or protection of important places of economic, environmental or social significance to the State. This SEPP incorporates and supersedes:

- Sydney Regional Environmental Plan No 24 Homebush Bay Area
- State Environment Planning Policy (State Significant Precincts) 2005.

The following heritage conservation area listed under Schedule 4 of the SEPP (PCRC) 2021 is located within or near the project site:

- State Abattoirs heritage conservation area (Area No 1).

The following heritage items listed under Schedule 5 of the SEPP (PCRC) are located within or near the project site:

- State Abattoir locality
 - Item 1 – The Vernon Buildings, the Maiden Gardens and the Railway Garden within the Historic Abattoir Administration Precinct, bounded by Herb Elliott Avenue, Showground Road, Dawn Fraser Avenue and the Railway Garden.
 - Item 2 – The Avenue of Palms.
- Millennium Parklands Heritage Precinct
 - Item A – The collection of buildings, structures, relics and landforms constructed by the Royal Australian Navy as an armaments depot during the 19th and 20th centuries, together with the rare river edge wetlands and the Cumberland Plain woodland area, to the extent to which they are—
 - (a) situated on land identified on the map marked “Sydney Regional Environmental Plan No 24—Homebush Bay Area—Amendment No 2—Map 3”, and
 - (b) described in the document entitled Millennium Parklands Heritage Precinct Conservation Master Plan 2001, prepared by Graham Brooks and Associates, copies of which are available for inspection at the head office, and the Sydney Region West office, of the Department.
- Other
 - Explosives Store (Item 87).

The following conservation areas as identified on the State Environmental Planning Policy (Precincts – Central River City) 2021 Sydney Olympic Park Heritage Map under Appendix 4 Sydney Olympic Park site, are located within or near the project site:

- State Abattoirs (Conservation Area A)¹
- Newington Armament Depot and Nature Reserve (Conservation Area B)²

¹ As this conservation area is listed twice under the SEPP, this area will be referred to as State Abattoirs heritage conservation area (Area No. 1) throughout this document to avoid confusion.

² As this area is listed twice on the SEPP (PCRC) in Appendix 4 and 12, and one of these names coincides with the SHR item with a different heritage curtilage, throughout this document this area will be referred to as the Millennium Parklands Heritage Precinct to avoid confusion between the SHR item and the SEPP conservation area.

2.3.2 State Environmental Planning Policy (Biodiversity and Conservation) 2021

The project site is within an area administered by the State Environmental Planning Policy (Biodiversity and Conservation) 2021 (SEPP (BC)) which incorporates and supersedes the previous Sydney Regional Environmental Plan (REP) (Sydney Harbour Catchment) 2005. The SEPP covers all the waterways of the Harbour, the foreshore and the catchment. It addresses a range of matters for consideration by consent authorities assessing development within the area of the policy to ensure consistent development decisions. It includes provisions relating to heritage and wetlands and provides planning controls for strategic foreshore areas. The objectives of the SEPP are stated in Part 10.51:

(1) *The objectives of this Chapter in relation to heritage are—*

- (a) to conserve the environmental heritage of the land to which this Part applies, and*
- (b) to conserve the heritage significance of existing significant fabric, relics, settings and views associated with the heritage significance of heritage items, and*
- (c) to ensure that archaeological sites and places of Aboriginal heritage significance are conserved, and*
- (d) to allow for the protection of places which have the potential to have heritage significance but are not identified as heritage items.*

The following item identified in Schedule 11 of the SEPP (BC) 2021 is located within or near the project site:

- *Former Pennant Hills Wharf, Wharf Road, Ermington* (Item No. 40).

2.3.3 Parramatta Local Environmental Plan 2011

The project site is within an area administered by the Parramatta Local Environmental Plan (LEP) 2011. The Parramatta LEP 2011 sets out various planning, development and environmental controls for the local government area (LGA) of the City of Parramatta Council. Schedule 5 of the LEP identifies heritage items important to the LGA.

The following items included in Schedule 5 of the Parramatta LEP 2011 are located within or near the project site: (Figure 2.1 to Figure 2.7):

- *Wetlands* (Parramatta LEP Item No. I1)
- *Pumping Station* (Parramatta LEP Item No. I5)
- *Tram alignment* (Parramatta LEP Item No. I6)
- *Rose Farm House* (Parramatta LEP Item No. I63)
- *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64)
- *Ermington Wharf* (Parramatta LEP Item No. I82)
- *Parramatta Town Hall (and potential archaeological site)* (Parramatta LEP Item No. I650)
- *Bicentennial Square and adjoining buildings* (Parramatta LEP Item No. I651)
- *Murrays' Building (and potential archaeological site)* (Parramatta LEP Item No. I652)
- *Warden's cottage (verger's cottage)* (Parramatta LEP Item No. I653)
- *Centennial Memorial Clock* (Parramatta LEP Item No. I654)
- *Shop (and potential archaeological site)* (Parramatta LEP Item No. I655)
- *Horse parapet façade and potential archaeological site* (Parramatta LEP Item No. I656)
- *Telstra House (former post office) (and potential archaeological site)* (Parramatta LEP Item No. I657)
- *HMV (former Commonwealth Bank) (and potential archaeological site)* (Parramatta LEP Item No. I658)
- *St John's Parish Hall* (Parramatta LEP Item No. I713)
- *Sewage Pumping Station 67* (Parramatta LEP Item No. I01643)

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- *St John's Anglican Cathedral* (Parramatta LEP Item No. I01805).

It should be noted that the location of *Dr Pringle's Cottage* (Parramatta LEP Item No. I705) is shown to be nearby the project site. However, it has been mapped incorrectly. The item is shown on LEP mapping in two locations. The correct location of the item is 52 George Street, Parramatta, around 175 metres northeast of the project site. Therefore, this item is not discussed further in this report as it is not nearby to the project site.

The following archaeological item included on the Parramatta LEP is excluded from this report. This item is discussed in Technical Paper 6 (Historical Archaeological Assessment):

- *Archaeological site* (134-140 Marsden Street, Parramatta) (LEP Item No. A11).

2.3.4 Ryde Local Environmental Plan 2014

A small part of the eastern section project site is within an area administered by the Ryde LEP 2014. The Ryde LEP 2014 sets out various planning, development and environmental controls for the LGA of the City of Ryde Council. Schedule 5 of the LEP identifies heritage items important to the LGA.

The following items included in Schedule 5 of the Ryde LEP 2014 are located within or near the project site (Figure 2.4)

- *Wharf* (Ryde LEP Item No. 165).

2.4 Potential heritage items

This report includes a review of potential heritage items along the project alignment. Potential heritage items identified during the assessment are discussed in Section 5.

A full significance assessment of potential heritage items is beyond the scope of this report. However, preliminary significance assessments of each potential heritage item have been provided in Section 5.

2.5 Summary

The heritage listings in relation to the project site are summarised in Table 2.1, with locations shown in (Figure 2.1 to Figure 2.7). This is limited to built heritage items within of 66 metres of the project site boundary for inclusion of vibratory impacts as discussed in Technical Paper 3 (Noise and Vibration).

Table 2.1: Heritage listings in relation to the project site

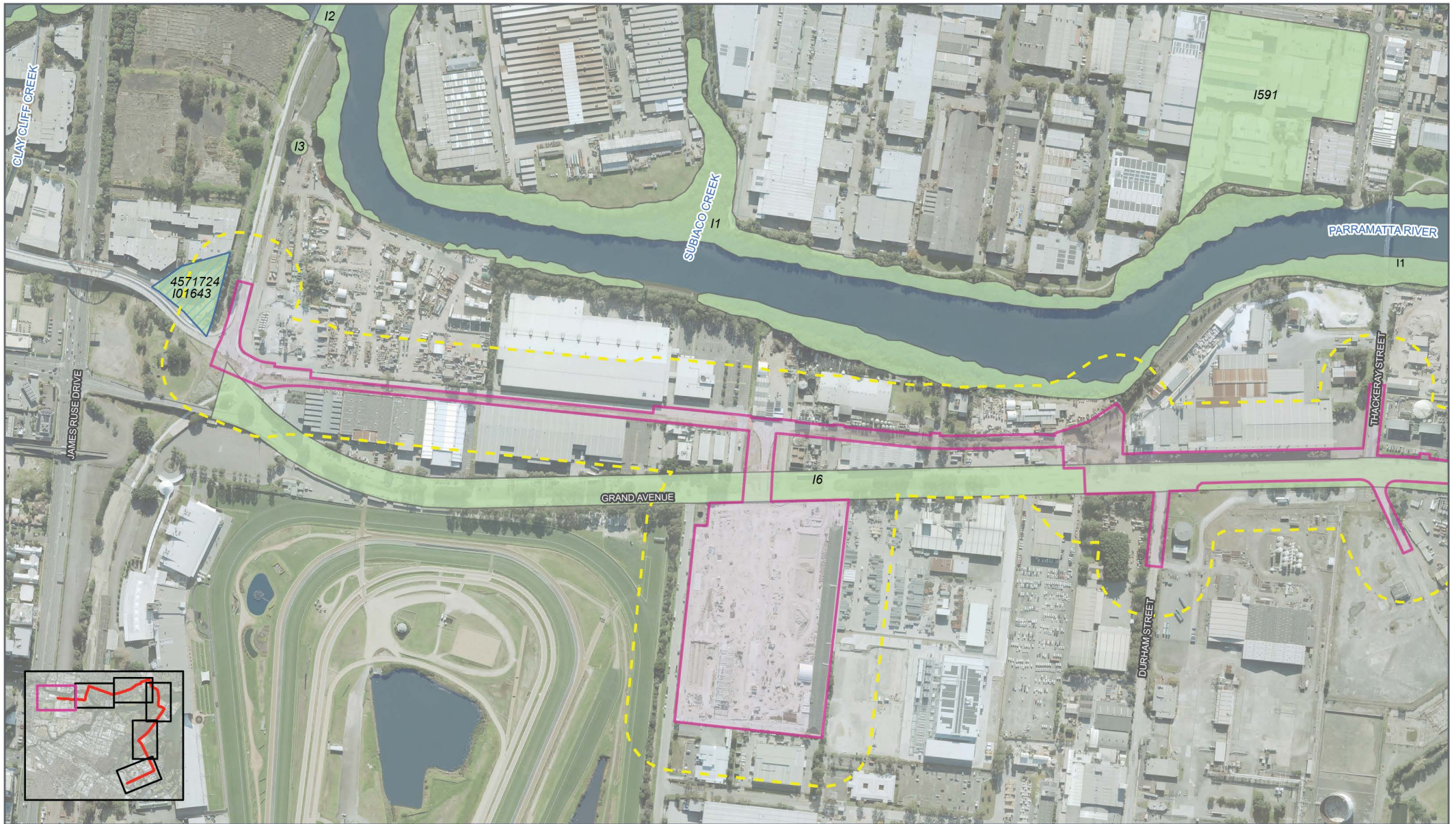
Name	Register	ID	Significance	Suburb	Location
<i>Newington Armament Depot and Nature Reserve</i>	SHR	01850	State	Sydney Olympic Park	Adjacent to project site
<i>Sewage Pumping Station 67</i>	SHR s170 Parramatta LEP	01643 4571724 I01643	State	Camellia	Around 30 metres west of project site
<i>St John's Anglican Cathedral</i>	SHR Parramatta LEP	01805 I01805	State	Parramatta	Around 50 metres south of project site
<i>State Abattoirs heritage conservation area</i>	SEPP (PCRC)	Area No. 1 & Area A	State	Sydney Olympic Park	Within project site
<i>State Abattoir locality</i>	SEPP (PCRC)	Item No. 1 & 2			
<i>Millennium Parklands Heritage Precinct</i>	SEPP (PCRC)	Item A	State	Sydney Olympic Park	Within project site
<i>Newington Armament Depot and Nature Reserve conservation area</i>	SEPP (PCRC)	Area B			

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

Name	Register	ID	Significance	Suburb	Location
<i>Explosives Store</i>	SEPP (PCRC)	Item 87	State	Sydney Olympic Park	Around 350 metres west of project site
<i>Former Pennant Hills Wharf*</i>	SEPP (BC)	40	Local	Melrose Park	Within project site
<i>Wetlands</i>	Parramatta LEP	I1	Local	Camellia Rydalmere Melrose Park	Within project site
<i>Pumping Station</i>	Parramatta LEP	I5	Local	Camellia	Immediately adjacent to project site
<i>Tram alignment</i>	Parramatta LEP	I6	Local	Camellia	Within project site
<i>Rose Farm House</i>	Parramatta LEP	I63	Local	Ermington	Around 50 metres south of project site at Honor Street
<i>Bulla Cream Dairy (Willowmere)</i>	Parramatta LEP	I64	Local	Ermington	Within project site
<i>Ermington Wharf*</i>	Parramatta LEP	I82	Local	Melrose Park	Within project site
<i>Parramatta Town Hall (and potential archaeological site)</i>	Parramatta LEP	I650	Local	Parramatta	Around 50 metres southeast of project site
<i>Bicentennial Square and adjoining buildings</i>	Parramatta LEP	I651	Local	Parramatta	Immediately adjacent to project site
<i>Murrays' Building (and potential archaeological site)</i>	Parramatta LEP	I652	Local	Parramatta	Immediately adjacent to project site
<i>Warden's cottage (verger's cottage)</i>	Parramatta LEP	I653	Local	Parramatta	Around 50 metres south of project site
<i>Centennial Memorial Clock</i>	Parramatta LEP	I654	Local	Parramatta	Immediately adjacent to project site
<i>Shop (and potential archaeological site)</i>	Parramatta LEP	I655	Local	Parramatta	Immediately adjacent to project site
<i>Horse parapet façade and potential archaeological site</i>	Parramatta LEP	I656	Local	Parramatta	Immediately adjacent to project site
<i>Telstra House (former post office) (and potential archaeological site)</i>	Parramatta LEP	I657	Local	Parramatta	Around 50 metres north of project site
<i>HMV (former Commonwealth Bank) (and potential archaeological site)</i>	Parramatta LEP	I658	Local	Parramatta	Around 60 metres north of project site
<i>St John's Parish Hall</i>	Parramatta LEP	I713	Local	Parramatta	Around 50 metres south of project site
<i>Wharf*</i>	Ryde LEP 2014	165	Local	Melrose Park	Within project site

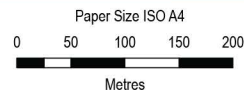
* Denotes same site, listed under multiple planning instruments

Registers: SHR (State Heritage Register), SEPP (PCRC) (State Environmental Planning Policy (Precincts – Central River City)), SEPP (BC) (State Environmental Planning Policy (Biodiversity and Conservation)), LEP (Local Environmental Plan).



Legend

- | | | |
|-----------------------------|-----------------------------|--|
| Project site | Local Heritage - LEP | State Environmental Planning Policy (Precincts - Central River City) 2021 |
| Vibratory impact buffer | Item - Archaeological | Item |
| Watercourse | Item - General | |
| Waterbody | Item - Landscape | |
| State Heritage (SHR & s170) | | |



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

Transport for NSW
Parramatta Light Rail Stage 2 EIS
Statement of Heritage Impact

Project No. 12557728
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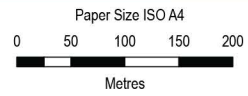
Heritage items in relation to
the project site

FIGURE 2.1



Legend

- Project site
- Vibratory impact buffer
- Watercourse
- Waterbody
- State Heritage (SHR & s170)
- Local Heritage - LEP**
- Item - Archaeological
- Item - General
- Item - Landscape
- State Environmental Planning Policy (Precincts - Central River City) 2021**
- Item



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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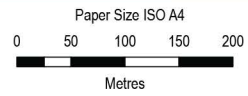
Heritage items in relation to the project site

FIGURE 2.2



Legend

- Project site
- Vibratory impact buffer
- Watercourse
- Waterbody
- State Heritage (SHR & s170)
- Local Heritage - LEP**
- Item - Archaeological
- Item - General
- Item - Landscape
- Item
- State Environmental Planning Policy (Precincts - Central River City) 2021**
- Item



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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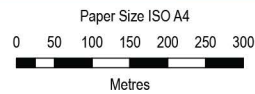
Heritage items in relation to
the project site

FIGURE 2.3



Legend

- Project site
- Vibratory impact buffer
- Watercourse
- Waterbody
- State Heritage (SHR & s170)
- Local Heritage - LEP**
- Item - Archaeological
- Item - General
- Item - Landscape
- Item
- State Environmental Planning Policy (Precincts - Central River City) 2021**
- Item



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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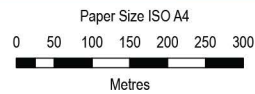
Heritage items in relation to
the project site

FIGURE 2.4



Legend

- Project site
- Vibratory impact buffer
- Watercourse
- Waterbody
- State Heritage (SHR & s170)
- Local Heritage - LEP**
- Item - Archaeological
- Item - General
- Item - Landscape
- Item
- State Environmental Planning Policy (Precincts - Central River City) 2021**
- Item



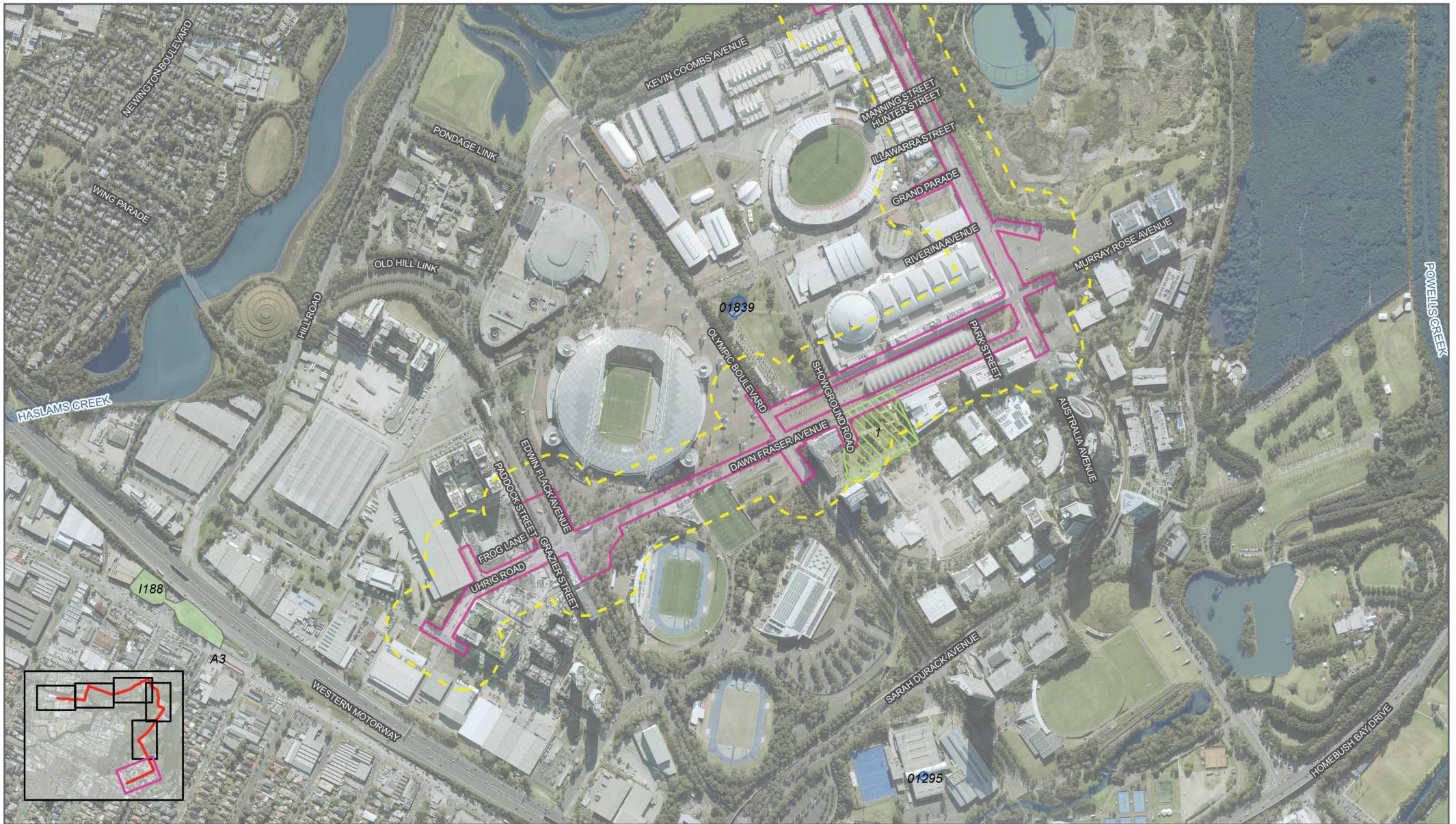
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Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Heritage items in relation to
the project site

FIGURE 2.5

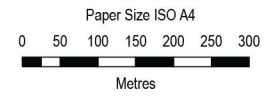


Legend

- Project site
- Vibratory impact buffer
- Watercourse
- Waterbody
- State Heritage (SHR & s170)

- Local Heritage - LEP**
- Item - Archaeological
 - Item - General
 - Item - Landscape

- State Environmental Planning Policy (Precincts - Central River City) 2021**
- Item



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



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**Heritage items in relation to
 the project site**

Project No. **12557728**
 Revision No. **C**
 Date **31/08/2022**

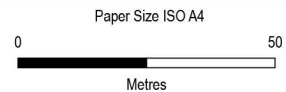
FIGURE 2.6



Legend

- Project site
- Vibratory impact buffer
- State Heritage (SHR & s170)

- Local Heritage - Parramatta LEP**
- Item - Archaeological
 - Item - General



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Transport for NSW
Parramatta Light Rail Stage 2 EIS
Statement of Heritage Impact

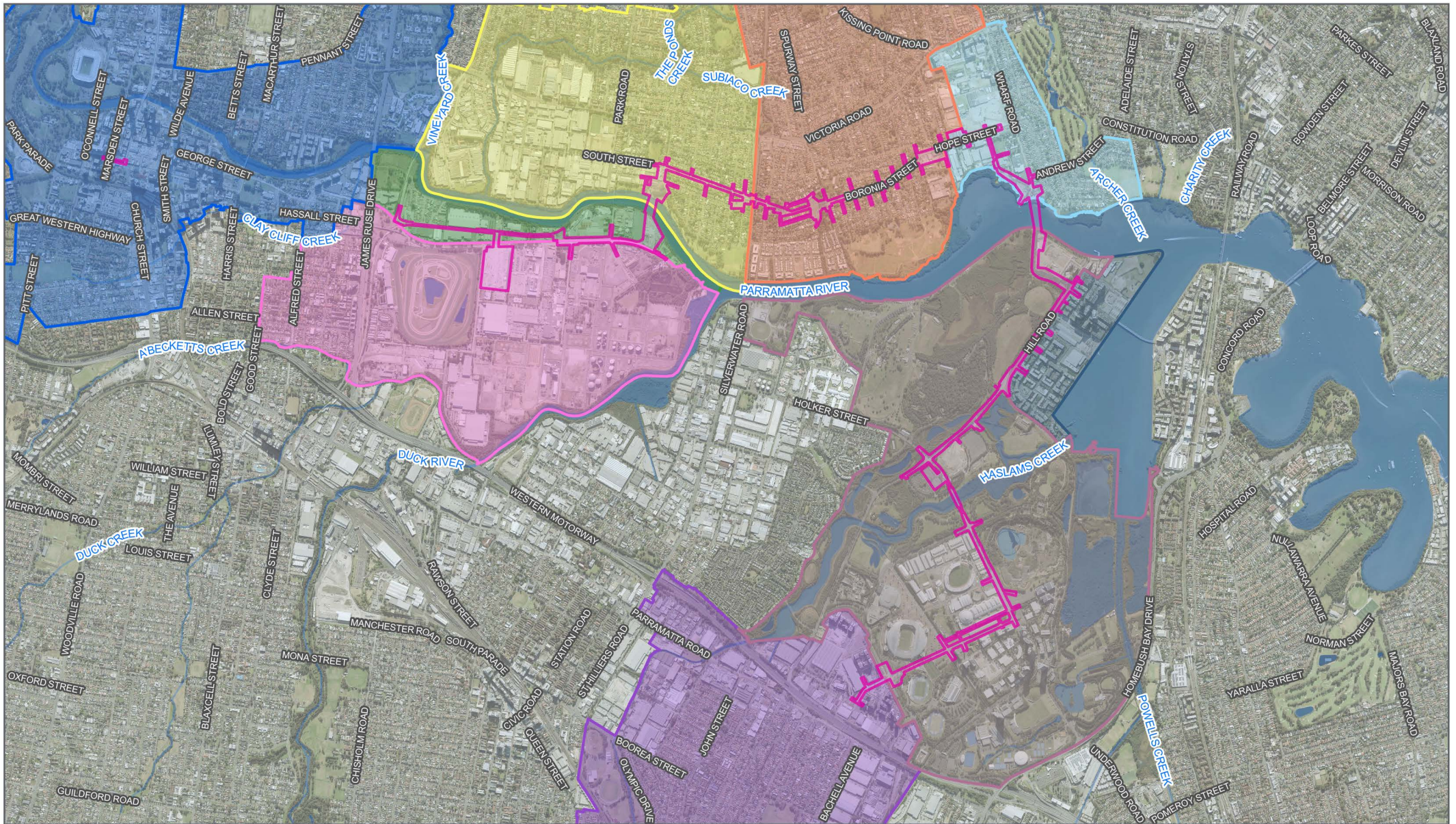
Project No. 12557728
Revision No. C
Date 31/08/2022

**Heritage items in relation to
the project site**

FIGURE 2.7

3 HISTORICAL CONTEXT

This chapter provides an overview of the history of early development of the project site and its surrounds. The early development of the project site and surrounds align with boundaries of the existing suburbs, which form the basis of the following subsections. Figure 3.1 illustrates the broad areas referred to in each subsection.



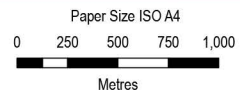
Legend

- Project site
- Watercourse
- Waterbody

Suburbs

- Camellia
- Ermington
- Lidcombe
- Melrose Park
- Rosehill

- Rydalmere
- Sydney Olympic Park
- Wentworth Point
- Parramatta



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Transport for NSW
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Project No. 12557728
Revision No. B
Date 31/08/2022

Historical context – the broad pattern of development within the project site

FIGURE 3.1

3.1 Camellia

3.1.1 Elizabeth Farm Estate 1793 – 1881

Camellia lies within the former Elizabeth Farm Estate. In 1793, John Macarthur received 100 acres at Rosehill, soon after renamed Parramatta, and established Elizabeth Farm. Upon receiving the land in 1793, Macarthur built a house on Elizabeth Farm (Plate 3.1). He described it as:

... a very excellent brick building, 68 feet in length and 18 feet in breadth. It has no upper story, but consists of four rooms on the ground floor, a large hall, closets, cellar, etc; adjoining is a kitchen, with servants' apartments, and other necessary offices. The house is surrounded by a vineyard and garden of 3 acres, the former full of vines and fruits trees, and the latter abounding with most excellent vegetables (John Macarthur to his brother James, quoted by Elizabeth Macarthur, 23 August 1794, Macarthur Papers A2908).

In 1794, Elizabeth Farm contained:

... 250 acres of which upwards of one hundred are under cultivation and the greater part of the remainder is cleared of the timber which grows upon it... I have at this moment 20 acres of fine wheat growing, and eight acres prepared for India corn and potatoes which it will be planted in less than a month (Macarthur quoted in Thorpe 2002:8).

He later acquired the adjoining land and established Edward Farm, which he eventually consolidated as part of the Elizabeth Farm Estate.

Charles Williams (also known as Christopher Magee) received 30 acres of land on 18 July 1791. This land was located on the southern bend of the Parramatta River. Williams, sentenced to seven years' transportation for theft, arrived on the transport *Scarborough* on the First Fleet. He married Elanor McCave (or McCabe) in August 1788 and settled on the land (McClymont 2009:83).

Lieutenant William Cummings arrived with the second detachment of the NSW Corps under the command of Major Grose on the transport *Pitt* on 14 February 1792. He received 100 acres on the Parramatta River, with an additional grant of 100 acres immediately to the east of his initial land grant in 1794.

Williams eventually sold his grant, including house, crop and stock to Cummings. These were then purchased by John Macarthur, who extended Elizabeth Farm's holdings to over 1,100 acres in 1816 by acquiring another grant which he called Glenfindless Farm. These were consolidated by Macarthur with the original Elizabeth and Edward's Farm into his Elizabeth Farm Estate. Macarthur then gained the complete river frontage between the township of Parramatta and Duck River.

Macarthur leased part of the Elizabeth Farm Estate to a horticulturalist, Silas Sheather, in 1852 (Allport Family 1852). Sheather established the Camellia Grove nursery.

The 1859 map of the subdivision of Parramatta and environs, 1859 (Plate 3.1 and Figure 3.2) identifies the improvements, including the garden and orchard as being located within the close environs of the house. However, the project site appears relatively undeveloped at this point with no specific use, except for a small, fenced area in the east.

Plate 3.1: The residence of John Macarthur Esquire. Near Parramatta, New South Wales, Joseph Lycett, 1825
(Sydney Living Museums) Camellia



3.1.2 Parramatta Tramway 1881 – 1943

In 1881, Charles Edward Jeanneret constructed a privately owned tramway along the present Grand Avenue in Camellia, following *Jeanneret's Tramway Act* passed by Parliament on 9 August 1881. The Parramatta Tramway (*Tram alignment* Parramatta LEP Item No.16) connected wharves, likely including *Industrial Wharves* (SEEP (BC) Item No. 36), and landing places on the Parramatta River near the junction of Duck River, along what was George Street, to Parramatta Park at the western end of the town. Jeanneret owned the Parramatta River Steamers and Tramway Company and constructed the tramway to provide a direct link between Sydney and Parramatta via the waterway. The line was opened for passengers on 1 October 1883 and by the following year the company was advertising eight daily services to Parramatta. However, by 1895 services had been reduced to six a day and in 1928 regular passenger ferries ceased to operate on upper reaches of the river. The tramway closed on 31 March 1943, with *Jeanneret's Tramway Act* repealed in 1945 (Heritage NSW 2021a, Rutledge 1972, *The Sydney Morning Herald* 2 October 1883:5).

Plate 3.2: 'Halycon' at Duck Creek – Parramatta River tram and ferry terminus by Henry King c.1890 (Source: Powerhouse Collection, object No. 30782)



Plate 3.3: Ferry Wharf, Parramatta River near Duck Creek c.1910 by Graeme Andrews



3.1.3 Industrialisation 1881 – present

Also in 1881, Septimus Stephen, a solicitor of Sydney, acquired the 1,100 acres of the Elizabeth Farm Estate for £50,000 (Thorpe 2002:10). Stephen subdivided the Estate and advertised the house and surrounding land for sale. Between 1881 and 1904 it was leased, and in 1904 purchased by Elizabeth Swann and family for the land value only. Stephen further subdivided and sold the land within the project site in 1884. It was advertised as Rosehill and developed as an industrial area, which was later renamed Camellia.

John Bennet purchased 140 acres of the Elizabeth Farm Estate in the Camellia area for a racecourse, which opened in 1885. In 1885 the Australian Kerosene Oil and Mining Company purchased 67 acres of the Elizabeth Farm Estate on the Parramatta River for £300 an acre, for a total of £18,425 (The Cumberland Mercury 11 July 1885:4) (Figure 3.4).

The Australian Kerosene Oil and Mining Company had been mining shale oil for its kerosene content at Joadja on the south coast of NSW since 1874. In 1886 Bennett sought approval to construct a railway between Clyde Station and Camellia. It connected to the Australian Kerosene Oil and Mining Company and allowed crude oil to be transported from their operations at Joadja to Camellia for further processing. The company manufactured kerosene, axel grease, soap and candles under the brand name 'Southern Cross'. Government contracts were held until the duty on kerosene was lifted in the early 1890s. This, combined with the severe 1890s depression forced the mine to close in 1894 (McClymont 2009:87).

In 1889, Sheather purchased the land he occupied under lease for the Camellia Grove nursery. The land was subsequently subdivided and sold. The James Hardie and Company purchased 10 acres in 1916 and under the brand 'Fibrolite' began manufacture of asbestos sheet cladding, including corrugated sheets used for roofing. The James Hardie and Company later expanded the range to include cement water pipe and plumbing accessories, moulded brake and clutch linings, and heat insulating materials (McClymont 2009:87).

By the beginning of the twentieth century, the effects of long term sewage disposal into the Parramatta River could no longer be tolerated. A bacterial treatment plant was constructed by the Public Works Department. The scheme combined sewage and stormwater and drained to a steam pumping station, which lifted the sewage to a treatment plant for processing prior to discharge in the river. This system was replaced in 1930 by the Northern Suburbs Ocean Outfall Sewer (NSOOS) to Dundas. *Sewage Pumping Station 67* (SHR Item

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

No. 01643, Parramatta LEP 2011 Item No. I01643), located west of the project site adjacent to James Ruse Drive, was constructed as part of this system to collect the wastewater previously flowing to the treatment works and pumped it through the rising main to NSOOS.

The Australian Branch of the Goodyear Tyre and Rubber Company commenced operations at Camellia in 1933, on land purchased from the Australian Kerosene Oil and Mineral Company. When it opened, the Goodyear Tyre and Rubber Company factory at Camellia produced 500 tyres per day, which increased to 3,500 tyres per day by 1929, enabling the company to expand operations. Between 1928 and 1930, an industrial products plant was added to produce hose and belting. In 1936, an engineering shop was added, and further work carried out through 1937. Between 1937 and 1939 the Company built a wharf, electric crane and pumphouse on the river front and the Wingfoot rail platform was extended in 1939. With the outbreak of World War II, the demand for rubber products increased. To cope with the demand, the Company increased its workforce to 1,500 people and doubled the size of the reclaim plant. The expansion continued after World War II with much of the remaining land between the railway and Grand Avenue developed. The factory ceased production in 1991, with the buildings demolished in 1997. The Australian Pharmaceutical Industries facility was constructed on the site during the early 2000s (Golder Associates 2015:13-14).

The Stauffer Chemical Company formed the Australian Cream of Tartar Company in 1926 and established a factory at Camellia for a cost of £30,000. The Stauffer Chemical Company operated several other chemical companies in NSW, including Wesco Paints, also at Camellia (Golder Associates 2015:13). In 1908, John Fell acquired 140 acres in Camellia, extending to the Duck River and set up a shale oil refinery. In 1928 Fell sold the operation to Shell Oil, which expanded operations throughout the twentieth century, forming the Clyde Oil Refinery.

Between 1957 and 1958, James Hardie Industries purchased additional land, and after the filling of the area with coal ash and asbestos waste, developed additional infrastructure associated with the manufacture of asbestos cement. Between 1995 and 2001, James Hardie Industries demolished 95 per cent of above ground infrastructure at Camellia and the remediation of the land is ongoing. The Clyde Oil Refinery and other factories on the Parramatta River continue to operate.

While much of Camellia has been subject to development from various industries, the *Wetlands* (Parramatta LEP 2011 Item No. I1) comprising mangrove swamps and salt marshes along the banks of the Parramatta River have remained largely undeveloped.

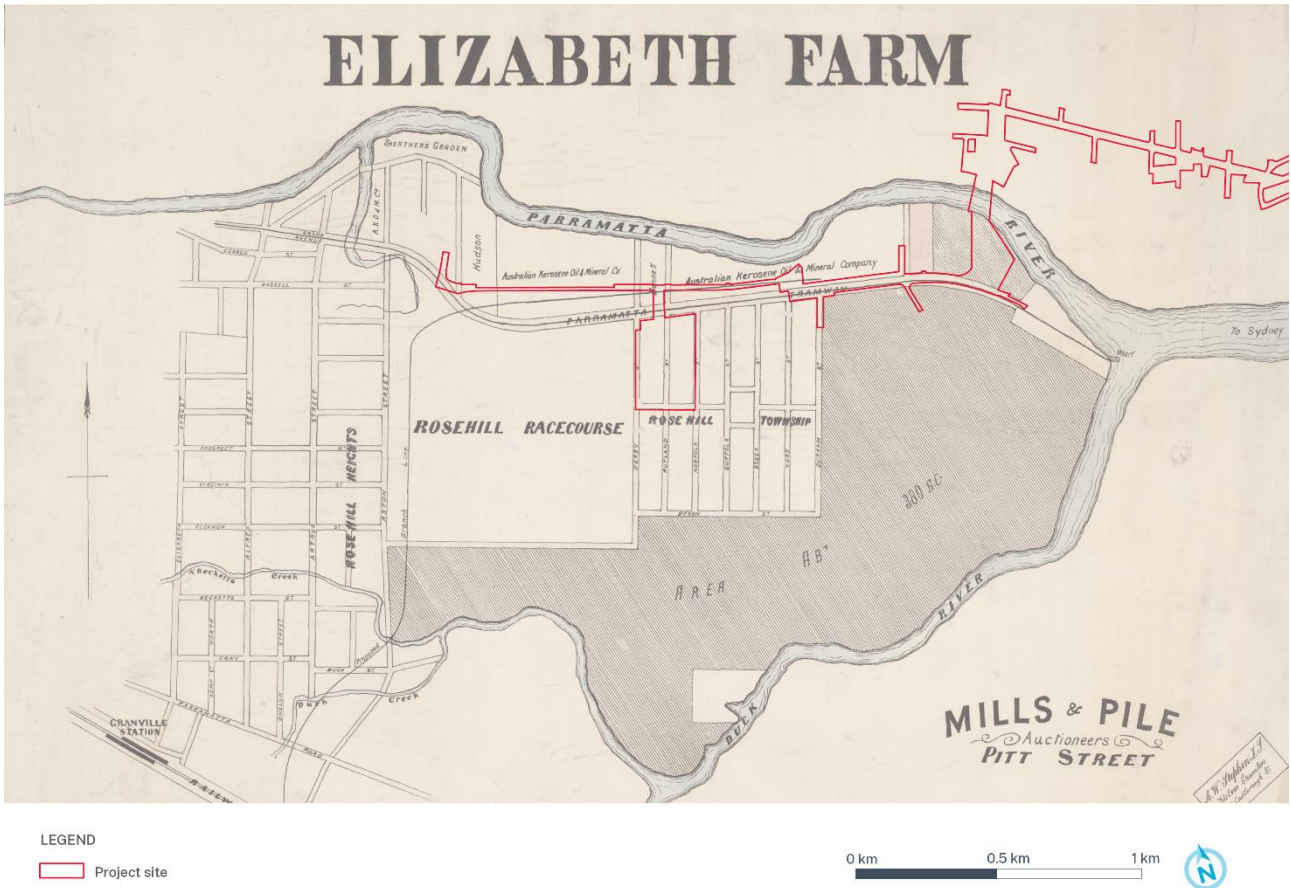


Figure 3.4: Elizabeth Farm after subdivision, c.1880-89 (National Library of Australia)

3.2 Rydalmere

3.2.1 The Vineyard 1791 – 1957

The first free settler in Rydalmere was Phillip Schaeffer. In 1789, Governor Phillip suggested the British government recruit nine farmers and others to be superintendent of convicts. Schaeffer, a widower with a daughter, was one of these (ADB 1967). Governor Phillip granted 140 acres on the Parramatta River at Rydalmere to Philip Schaeffer on 30 March 1791, with the deed signed on 22 February 1792. The conditions of the grant included that he receive two rations from the Government stores for 18 months, medical attendance, and the labour of five men (*The Sun* 3 April 1922:6). Schaeffer settled on the land and built a large brick house on the property alongside the house provided by the government. He reportedly planted 1,000 grapevines and named the estate 'The Vineyard' (Finlay 2019). By December 1792 he had planted 12 acres with maize, one acre with wheat, one acre with tobacco and vines and cleared 23 acres (*The Sun* 3 April 1922:6; *Catholic Weekly* 20 January 1949:2).

In 1794, Schaeffer was granted a further 60 acres fronting the Parramatta River. Other grantees along the Parramatta River at Rydalmere included James Manning (80 acres), John Carver (80 acres), John Seymour (50 acres) and William Reid (60 acres).

In August 1797, Schaeffer sold The Vineyard to Captain Henry Waterhouse for £140 (Plate 3.4). Waterhouse had worked as a midshipman on the First Fleet under Governor Phillip and had later been appointed captain of *HMS Reliance*. In June 1797, Waterhouse bought a flock of pure-bred Spanish merino sheep from the Cape of Good Hope to Australia on the *HMAS Reliance* and introduced the flock at The Vineyard later that year (Parsons 1967).

In 1813, The Vineyard was purchased by Hannibal Hawkins Macarthur (nephew of John Macarthur). By 1822, Macarthur had amassed all the land fronting the Parramatta River in Rydalmere. This included 'Portion 164' (160 acres), granted to Macarthur in 1822, 'Portion 122' (80 acres), granted to James Manning in 1792 known as 'Manning's Farm' and 'Portion 123' (80 acres), granted to John Carver known as 'Carver's Farm'.

Macarthur lived at The Vineyard between 1814 and 1849 (Plate 3.5). In 1836 Macarthur had a stone mansion commissioned (Plate 3.6), however, due to the 1840s depression, his properties were sequestered in 1848 resulting in the subdivision and sale of his vast landholding. The estate was purchased by Bishop John Bede Polding, who renamed the mansion Subiaco and set up a convent for Benedictine nuns, who ran a school there. The Benedictine nuns lived and worked at Subiaco until 1957. In 1961 the remaining three acres of the estate and buildings was sold to Rheem Australia Pty Ltd. All buildings were demolished to build factory warehouses and a car park (Finlay 2019).

Plate 3.4: Captain Waterhouse's house, Sydney [sic], the Vineyard, about 1798 (State Library of NSW)



Plate 3.5: Vineyard cottage, residence of H. H. Macarthur Esq. 1812 to 1820, watercolour by John Septimus Roe, 1820 (State Library of NSW)



Plate 3.6: The house at The Vineyard, Conrad Martens, 1859 (Caroline Simpson Collection, Sydney Living Museums)



3.2.2 Subdivision 1878 – 1926

Most of the surrounding land was sold off in the 1820s. Orchardist Thomas O'Neill purchased part of the land and subdivided it under the name Rydalmere (Figure 3.5). It is believed he named the subdivision Rydal after Rydal in the English Lakes District where he was born, and added the word 'mere' meaning lake in other languages – to reinforce the scenic quality of the estate – and thus created the name Rydalmere which gave rise to the suburb of the same name (Finlay 2019). The advertisement for the sale of the land noted:

RYDALMERE has been subdivided, the lots being large, no frontage less than 50 feet, some having 75 feet, with depths of up to 150 feet...RYDALMERE is elevated, and possesses fine soil suitable for growing Oranges, Lemons, Grapes, and all summer fruit (The Sydney Morning Herald 13 February 1886:21).

Rydalmere remained semi-rural into the twentieth century, with numerous orchards and nurseries in the area. The eastern section bordering Ermington developed into mainly residential holdings, while the western half, with its waterfront and rail connections attracted heavy industry.

The residential estate, Broad Oaks, was advertised for sale in 1886 (Figure 3.6) and the later Fairmount Estate in the 1920s (Figure 3.7). In regards to the Fairmount Estate, *The Sun* (20 August 1926) reported:

The increasing popularity of Rydalmere is reflected in the report by Brodie and Bridge, Ltd. That out of 681 lots on their Fairmount Estate 469 have already been sold...

In the centre of Rydalmere, the public school adjoining, and situated close to the Town Hall, Fairmount Estate commands a splendid panoramic view of the range of country to the north towards Dundas and Eastwood, while it overlooks the big field of industry directly across the Parramatta River.

Development accelerated following World War II, with Parramatta designated as a growth centre, and sections of Rydalmere zoned as industrial land. From 1950 factories at Rydalmere produced steel and concrete pipes, hot water systems and earth moving equipment. The post war residential boom also saw the NSW Housing Commission acquire land and build homes for Australian returned servicemen and their families (Finlay 2019).

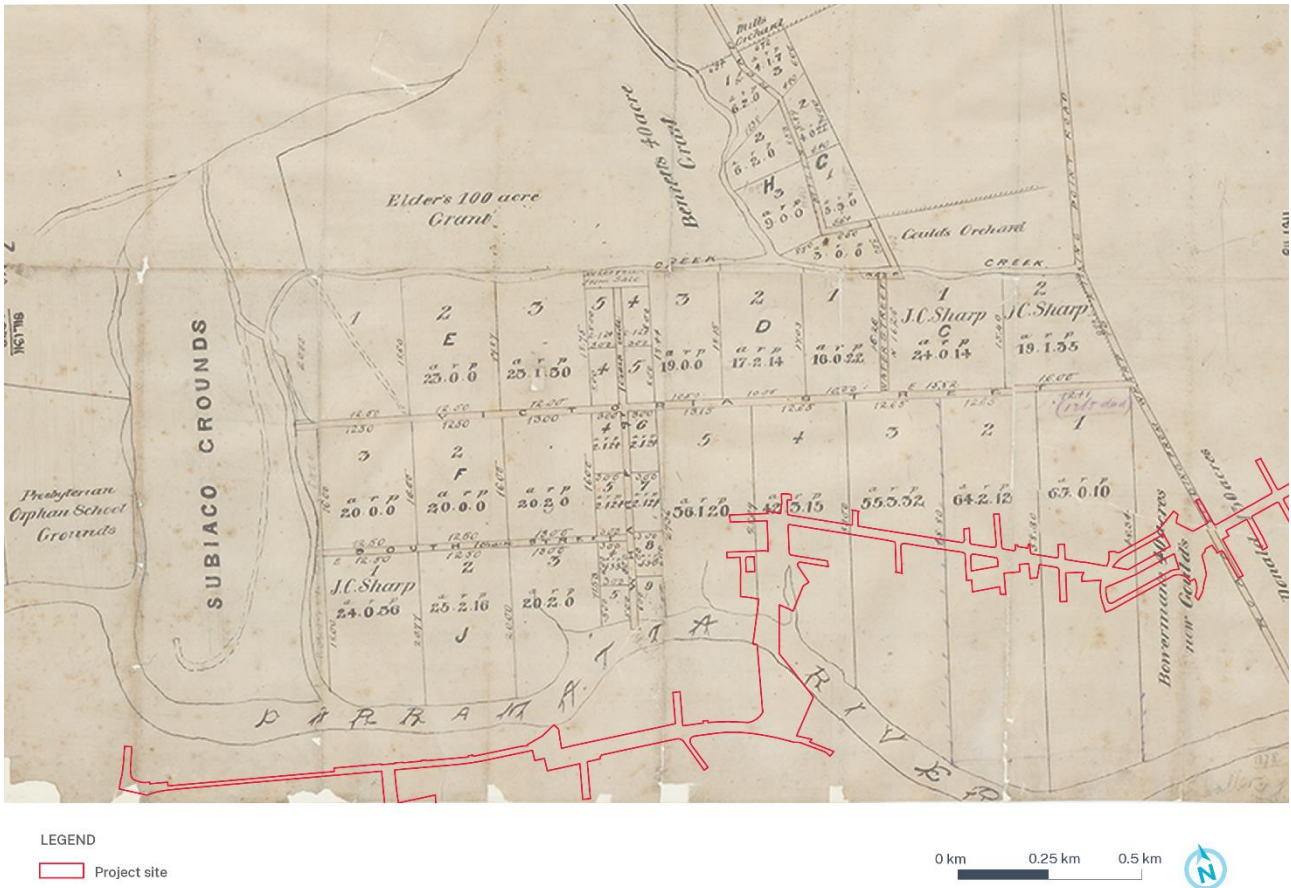


Figure 3.5: Rydalmere, 1878 (State Library of NSW)



LEGEND

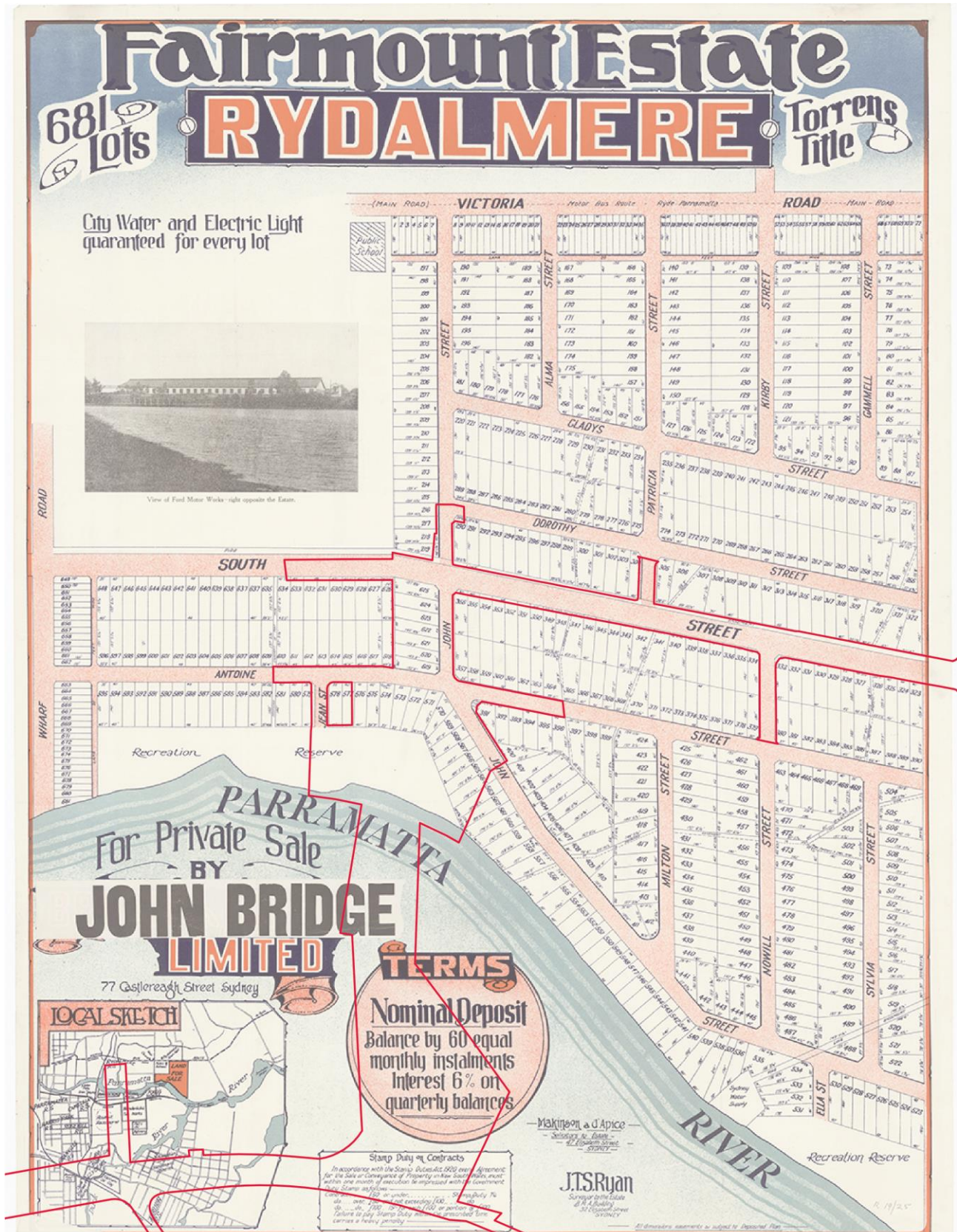
 Project site

0 km

0.3 km



Figure 3.6: Broad Oaks, Parramatta River, residential land sales advertisement, 1886 (State Library of NSW)



LEGEND

Project site

0 km

0.25 km



Figure 3.7: Fairmount Estate, Rydalmere residential land sales advertisement, n.d. (State Library of NSW)



Figure 3.8: 1943 aerial image of Rydalmere (Six Maps)



Figure 3.9: 1955 aerial image of Rydalmere (Historical Imagery Viewer)

3.3 Ermington

3.3.1 Early land holders 1792 – 1899

In January 1792, Governor Phillip granted land in the Field of Mars to Alexander McDonald (130 acres) and Thomas Swinerton (80 acres). In 1799, Governor Phillip granted 40 acres to Isaac Tarr. These lands occupied the Parramatta River frontage and comprised most of the current suburb of Ermington.

Swinerton and Tarr both farmed their land. Tarr, his wife and daughter, were self-sufficient and no longer receiving government rations by 1803 and by 1806 Tarr was recorded as farming 12 acres. However, in 1814 the family was in reduced circumstances and relying on charity. In 1822, Tarr was 'aged and infirm' and described as an invalid in 1825 (People Australia 2021a).

Alexander McDonald successfully managed to cultivate his grant, which became known as Rose Farm, or McDonald Farm. In around 1820 he built Rose Farm House. The single storey Georgian Cottage is located at present day 15-17 Honor Street, Ermington, to the south of the project site. It features sandstone internal and external walls, and mature fig trees. McDonald lived in the house until he died from a boating accident in 1821. George McDonald inherited the property on 12 March 1833 and sold it to Henry Harvey for £1,500 (Tsang 2020). The property was known as "Rose Hill Farm" by the 1870s when it was offered at auction. The property was offered for sale in both 1871 (Plate 3.7) by the proprietor William Payten, and then again in 1872 (Plate 3.8) by the mortgagee. At this time, the property included an orchard, orangery, paddocks, plus a garden and shrubbery along with the cottage, laundry, stables and coach house, and a private wharf ('Rose Farm Wharf').

In 1899 the *Cumberland Argus* noted:

The country around Rydalmere and Ermington is, for the most part, both picturesque and fertile, and is utilised for nurseries for the introduction of orange and other fruit trees, of which thousands are sent off annually by Messrs. McKee, Atkins, Franks, Hughes, Ryan, and others (Cumberland Argus 1899:41).

Plate 3.7: Rose Hill Farm Estate auction advertisement 1871 (The Sydney Morning Herald, 10 January 1871, 7)

**ROSE HILL ESTATE,
PARRAMATTA RIVER,
opposite Newington.**

For Positive Sale.

RICHARDSON and WRENCH have received instructions from the proprietor, WILLIAM PAYTEN, Esq., to sell by public auction, at the Rooms, Pitt-street, on FRIDAY, 20th January, at 11 o'clock,

The ROSE HILL FARM ESTATE, having large frontage to the Parramatta River, with stone wharf, containing 146 acres 2 roods 34 perches of land, subdivided into

ORANGERY, containing about 50 acres
 ORCHARD, ditto ditto 8 ditto
 PADDOCKS, ditto ditto 84 ditto.

The ORANGERY contains upwards of 1200 trees, a very large proportion being young, all healthy, and nearly the whole of them are in full bearing.

The ORCHARD is well stocked with apple, pear, and stone fruit trees, all in good order.

The PADDOCKS are well grassed and watered, and equal to carry a considerable number of dairy cattle all the year round.

The improvements comprise COMMODIOUS VERANDAH COTTAGE, built of stone and brick, containing hall, 10 feet by 18; drawing and dining rooms, 18 x 16 each; and six other comfortable rooms; large kitchen, store-room, laundry, brick stable of four stalls; shed, about 80 feet long, covering coach-house, workshop, and other out-offices; the water supply has never been known to fail, and the homestead improvements are surrounded by a well arranged garden and shrubbery.

Rose Hill Farm is distant about three miles from Parramatta by the Kissing Point Road, about twelve miles from Sydney. The river steamers pass it nearly every hour of the day.

The above estate is in capital order, and can be well recommended as an investment. The residence is fit for a gentleman's family, and the profits from the orangery and orchard amount to a considerable figure. There is also ample room for carrying on dairying operations.

Plan on view at the Rooms
 Terms, liberal.

Plate 3.8: Rose Hill Farm Estate auction advertisement 1872 (The Sydney Morning Herald, 16 February 1872, 7)

By order of the Mortgagee.

**ROSE HILL ESTATE,
PARRAMATTA RIVER,
opposite Newington, and about half a mile from the
Ermington Ferry.**

For Positive Sale.

RICHARDSON and WRENCH have received instructions from the MORTGAGEE to sell by public auction, at the Rooms, Pitt-street, on MONDAY, 26th February, at 11 o'clock,

The ROSE HILL FARM ESTATE, having large frontage to the Parramatta River, with stone wharf, containing 130 ACRES by grant subdivided into

ORANGERY
 ORCHARD
 PADDOCKS, &c.

The ORANGERY contains upwards of 1000 trees, a large proportion being young, and nearly the whole of them are in bearing.

The ORCHARD is well stocked with apple, pear, and stone fruit trees.

The PADDOCKS are well grassed and watered, and equal to carry a considerable number of dairy cattle all the year round.

The improvements comprise COMMODIOUS VERANDAH COTTAGE, built of stone and brick, containing hall, 10 feet by 18; drawing and dining rooms, 18 by 16 each; and 6 other comfortable rooms; large kitchen, store-room, laundry, brick stable of 4 stalls, coachhouse, and other out-offices; the water supply has never been known to fail, and the homestead improvements are surrounded by a well arranged garden and shrubbery.

Rose Hill Farm is distant about three miles from Parramatta by the Kissing Point Road, and close to the Ermington Ferry on the River. The steamers pass it nearly every hour of the day.

The above estate can be well recommended as an investment. The residence is fit for a gentleman's family, and the profits from the orangery and orchard amount to a considerable figure. There is also ample room for carrying on dairy operations.

For particulars of title apply to Messrs. Holdsworth and Brown, solicitors, Pitt-street.

Plan on view at the Rooms.
 Terms liberal.

Plate 3.9 From Dundas overlooking Ermington and Parramatta River (Cumberland Argus 1899:41)



Plate 3.10: Rose Cottage, Ermington, 1932 by John Cosh (1873-1946) (Source: NLA obj-135597852)



3.3.2 Swane Brothers Enterprise Nursery 1919 – 1967

In 1919, the Swane brothers, Edgar Norman (Ted) (1892-1974) and Harold Rudyard Kipling (Tim) (c1899-c1965) began growing fruit trees for orchardists on property owned by their father Edgar Henry Swane, town clerk and former mayor of the Ermington and Rydalmere Municipality. The following year, Edgar Norman together with his younger brother Harold became the proprietors of a nursery trading as *Swane Bros' Enterprise Nursery*. Their main stock was citrus and roses, although they also grew crops of fruit and vegetables to supplement their income while the plants grew. In December 1920 Edgar Norman purchased Lots 1 and 12 in Deposited Plan 3370, acquiring street frontage to Hope Street, Hughes Avenue and Atkins Road, Ermington (Heritage NSW 2021b).

From 1921, the brothers brought innovative improvements to the business, including the purchase of a 1921 Model-T Ford for delivery of vegetables, use of the motorised Howard rotary hoe, and the technique of 'growing-on' plants in large containers.

In December 1922, the brothers purchased an existing orchard on the east side of Hughes Avenue (Lots 13-15 in Deposited Plan 3370), which comprised an area of about 10 acres. This property had been part of John Woodcock's fruit and produce business. Woodcock (1840-1919) had purchased the land in 1904, but he had been growing fruit in the Ermington area since the 1870s. This land purchase consolidated the family's local holdings (Heritage NSW 2021b).

In 1923, they received permission to build a shed and stables on Hope Street and in 1924, to erect a new cottage at 64 Hughes Avenue (*Bulla Cream Dairy* (Willowmere) Parramatta LEP Item No. I64). The house was called Willowmere. The front garden and west paddock (horse paddock) were used at one stage for the propagation of plants for sale at the adjacent nursery. Edgar Norman and his family resided at 64 Hughes Avenue from the time of its construction until the 1960s, with the nursery operating from the adjacent lands on Hope Street. However, in the early part of 1926 the two Swane brothers went their separate ways. Harold acquired Lot 1 to the west of No. 64 Hughes Avenue (now 61 Atkins Road and 2B & 2C Hope Street) from his brother and Edgar Norman retained Lot 12 (64 Hughes Avenue) (Heritage NSW 2021b).

The Swane Bros. Enterprise Nursery was highly successful. The principal lines of nursery stock were fruit trees, both citrus and deciduous, rose plants (bush and climbing), and a wide variety of shrubs, and flowering and ornamental trees. By the early 1940s the nursery had on hand some 35,000 plants and published a sales catalogue that was posted free on request, which included hints on planting, pruning and spraying. The nursery premises were open to the public weekdays and on Saturdays (*The Cumberland Argus and Fruitgrowers Advocate*, 26 March 1941: 7).

In the County of Cumberland Planning Scheme gazetted in 1951, the area of Swane's nursery operations was zoned Industrial. Later in that decade, in 1959, part of the nursery lands to the east of Hughes Avenue (part Lots 13-15 in Deposited Plan 3370) were sold to McNamee Holdings Pty Ltd; and in 1966, the other half of the nursery lands were sold to Gantrell White (Cakes) Pty Ltd. Swane's dwelling at No. 64 Hughes Avenue (Lot 12) was sold in 1967 to Bulla Cream (Heritage NSW 2021b).

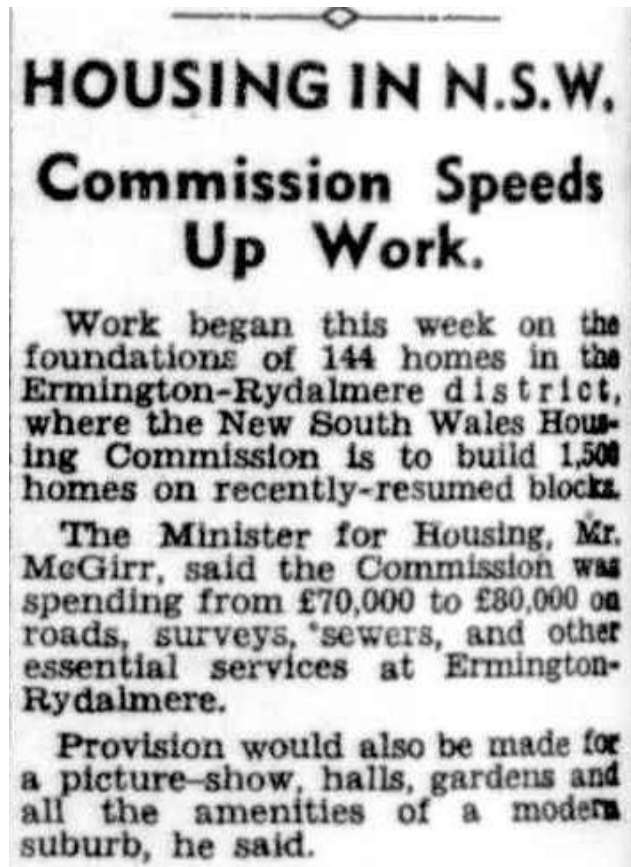
3.3.3 Residential subdivision 1900 onwards

Land to the west of Swane Brothers' Nursery was subdivided in the early twentieth century, however, Ermington was slow to develop and remained rural through to the mid-twentieth century (Figure 3.10 to Figure 3.12). Following World War II, the NSW Housing Commission acquired and developed sections of Ermington to accommodate returned servicemen and their families. Up to 1,500 houses were initially constructed (Plate 3.11). The scheme continued into the 1980s, with land continually acquired under the *Housing Act 1912* (*Government Gazette of the State of NSW*, 8 April 1983: 1644).

While much of Ermington was being built up for post war housing, land bordering Melrose Park was being industrialised. Food processors, cosmetic and pharmaceutical companies established factories and warehouses, many of which remain.

The eastern river frontage area of Ermington remains undeveloped parkland. Having been used for landfill during the 1970s, much of the area has now been redeveloped into George Kendall Reserve. The western riverfront area has been converted into a residential subdivision in recent years.

Plate 3.11: Housing in NSW. Commission Speeds Up Work (The Australian Worker, 12 September 1945: 12)



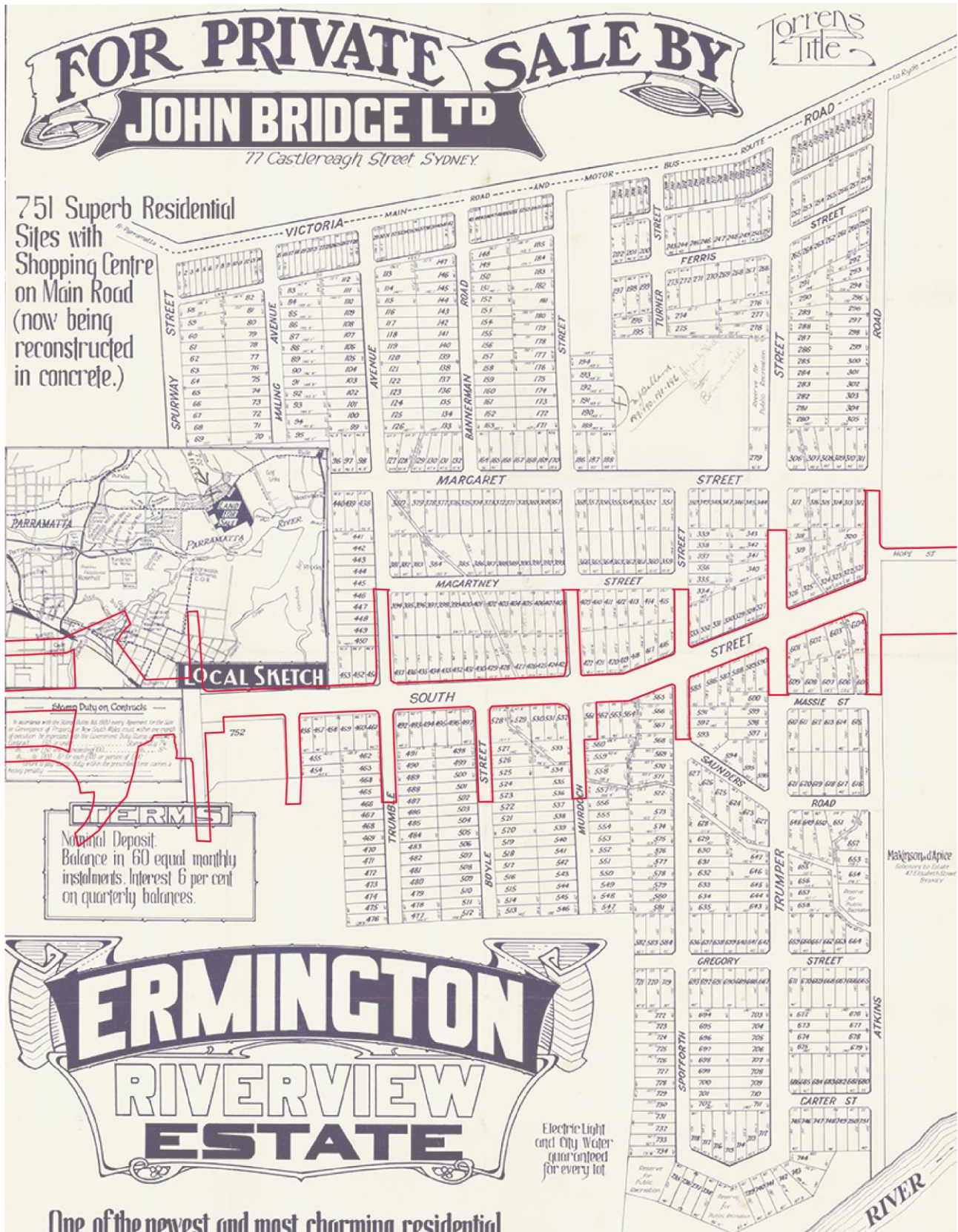


Figure 3.10: Ermington, Riverview Estate, n.d. (State Library of NSW)



Figure 3.11: 1943 aerial image of Ermington (Six Maps)



Figure 3.12: 1955 aerial image of Ermington (Historical Imagery Viewer)

3.4 Melrose Park

3.4.1 Early land holders 1792 – 1840

Melrose Park, east of Wharf Road, was originally part of land grants given to two ex-marines in the Field of Mars, John Colethread/Coulthead (1761-1802) and Isaac Archer (1754-1836), on 3 January 1792. These land grants were part of eight grants given to former marines that had decided to settle in the colony (Phippen 2008). Archer later acquired Colethead's land and by mid-1800 had 15 acres sown in wheat, and owned 50 goats and 29 hogs. He and his wife, Sarah Burdo, were 'off stores', with no children recorded living at the property. By 1802 Archer held 240 acres and the household, which included a child, one convict and three free men, was self supporting. By 1822, he kept 2 horses, 38 cattle, 10 pigs and 348 sheep (People Australia 2021b). To the west of Wharf Road, Reverend Samuel Marsden consolidated a grant of 335 acres.

These lands were purchased by Major Edmund Lockyer in 1827. Lockyer had returned to Sydney in September 1827, having sold his commission and retired from the Army, and in November was appointed Police Magistrate at Parramatta (*Mount Barker and Denmark Record* 12 March 1936:5). In 1828, Darling appointed Lockyer the Principal Surveyor of Roads at a salary of £6,000, but the Secretary of State in May ordered the office to be abolished, with the duties of the office transferred to the Surveyor General. In December 1829, he was appointed Police Magistrate at Parramatta again, and from February to December 1830 acted as Superintendent of Police. In 1852, he was appointed Sargent-at-Arms to the Legislative Council and in 1856 Usher of the Black Rod.

In 1828, he built Ermington House, naming it after the parish of Ermington in Devon. It was a stately two-storey Georgian mansion constructed from sandstone with a veranda around the ground floor. The house was surrounded by a garden with tall trees and had a driveway to a private wharf on the Parramatta River (called Major Lockyer's Wharf) and another to the public road now called Wharf Road (Phippen 2008) (Plate 3.12).

Plate 3.12 Ermington Estate (Source: City of Ryde Library)



STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

In December 1829 Lockyer advertised the Ermington Estate for let:

This most desirable ESTATE contains 160 acres more than 60 of which are... under cultivation, and the remainder well secured by fencing, and the Parramatta River. THE HOUSE is an unusually handsome Stone Building, with a neat verandah, delightfully approximating upon the river, and commands the most picturesque views. The offices comprise every useful and commodious requisite. The stables, barn, coach-house, granary, and agricultural buildings are large, and of the best description. The gardens comprise some four to five acres in extent, agreeably laid out, and productive. Great care has been taken in the selection of the best and choicest fruit trees. The whole is encompassed by a stone 6-foot paling.

WATER CARRIAGE and communication with Sydney and Parramatta, is connected with the advantages of this estate, making the WHOLE PROPERTY the most complete inviting occupation adjacent to Sydney possible, being only 11 miles distant, and four from Parramatta, and commanding the very precise sport where the punt is expected to be. A RIGHT OF COMMON also belongs to the estate, extending over 5,560 acres (Sydney Gazette and New South Wales Advertiser 22 December 1829:3).

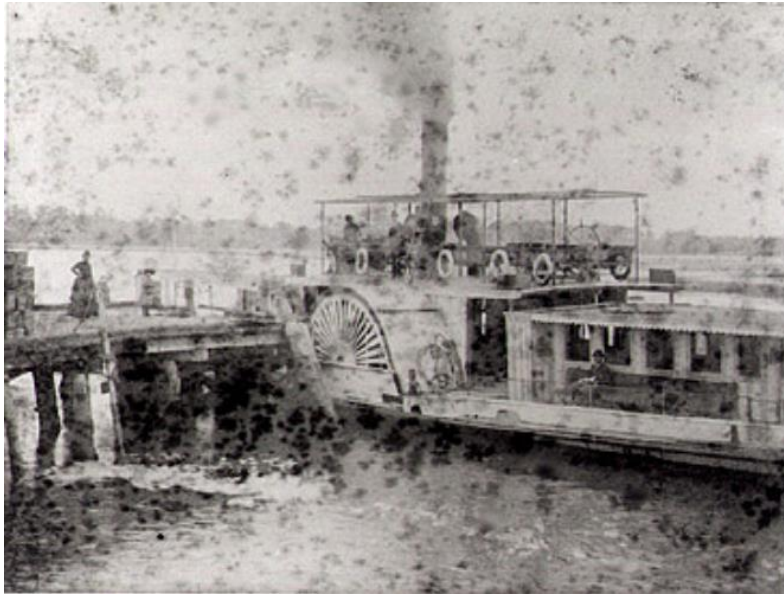
By 1830, Lockyer had over 1,900 hectares of land. Several orchards had been established in the area, and the wharf at Ermington, located on what is now Wharf Road, was used to transport produce such as oranges, lemons, apples and apricots to Sydney (Plate 3.13 and Plate 3.14).

The wharf, on what is now Wharf Road, was vital for the economic vitality of the colony. It was known by various names, including One Tree Wharf, Pennant Hills Wharf and the Government Wharf, and is currently listed as heritage item *Former Pennant Hills Wharf* (SEPP (BC) Item No. 40), *Wharf* (Ryde LEP Item No. I65) and *Ermington Wharf* (Parramatta LEP Item No. I82). It serviced the government saw mills establishment at Pennant Hills from the 1820s. In the late nineteenth century the wharf was used in the shipment of blue metal from the Pennant Hills quarry (Phippen 2008).

Plate 3.13 Members of the Woodcock family and the fruit-boat “Surprise” at Ermington Wharf around 1888
(Source: City of Ryde Library)



Plate 3.14: Captain James Marcy and his paddle steamer at Ermington Wharf around 1888 (Source: City of Ryde Library)



3.4.2 Subdivision and growth 1840 – 1955

The depression of the early 1840s forced Lockyer to subdivide part of his property, which was auctioned off as the Village of Ermington (Figure 3.13). Land sales were slow and few lots sold. The remainder of the estate was sold through a number of short-term owners to Jabez King Heydon, who bought it in 1854 (Phippen 2008). The 1858 advertisement for the sale of land and three tenements in the Village of Ermington states:

100 acres, more or less, of prime land adjoining Pennant Hills Wharf, having three splendid frontages – one to the river, one to the main Pennant Hills Road, leading to the wharf, and one to the Great North Road to Parramatta, Sydney, Ryde, Kissing Point, &c, and a side line to Mrs. Thomas Marden's land.

The property is divided into water frontage lots, building allotments, and farms; the whole having frontages to the main roads and river. The water frontages and building allotments average half an acre to an acre; the farms from five to seven acres each. A large portion of the land is stumped and cleared ready for immediate cultivation. There are three tenements on the property, which will be sold within the lots they are erected on. Brick earth, stone for building purposes, timber and pure water are in abundance on the land... The whole of this land is admirably adapted to the growth of summer fruits, oranges, lemons and vegetables. No better guarantee of the above statement can be given than this fact – that those farms of the following, are in the immediate neighbourhood, viz. Shepherd, Devlin, Darvall, Blaxland, Small, Payton, Spurway, Drinkwater, and Hay. The large fruit growers of the district will now have an opportunity of purchasing a water frontage on which they can erect their own private wharfs [sic], and at once avoid the inconveniences...in the shipment of fruit and general produce from the old wharf (Freemans Journal 5 May 1858:1).

In 1926, Lockyer's estate was bought by the City Mutual Life Assurance Society Limited. The general manager, George Crowley, had a vision of a satellite town complete with its own golf course in line with the popular garden city movement of the early twentieth century. Ermington House was then demolished to make way for the Golf Links Estate. By 1945, the area east of Wharf Road was predominantly residential, while the west remained agricultural land. Properties included Lindsay's dairy, Vines' Riding School, Rogers' Riding School, Dovgan's Poultry Farm, Southeron's Nursery, Edwards' Rose Nursery and Cahill's Nursery. Further west into Ermington was Palmer's Nursery, Swane's Nursery, and a Chinese market garden (Phippen 2008).

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

Also on the western side of Wharf Road to Waratah Street was the Wallumetta Infant's School. Established in 1944, the school educated the young children of the Golf Links Estate. In 1947, the school changed its name to Melrose Park Public School (Phippen 2008).

Throughout the latter half of the twentieth century, the former agricultural land west of Wharf Road was industrialised. Today, Melrose Park is transforming from an industrial area to a residential, commercial and retail hub.

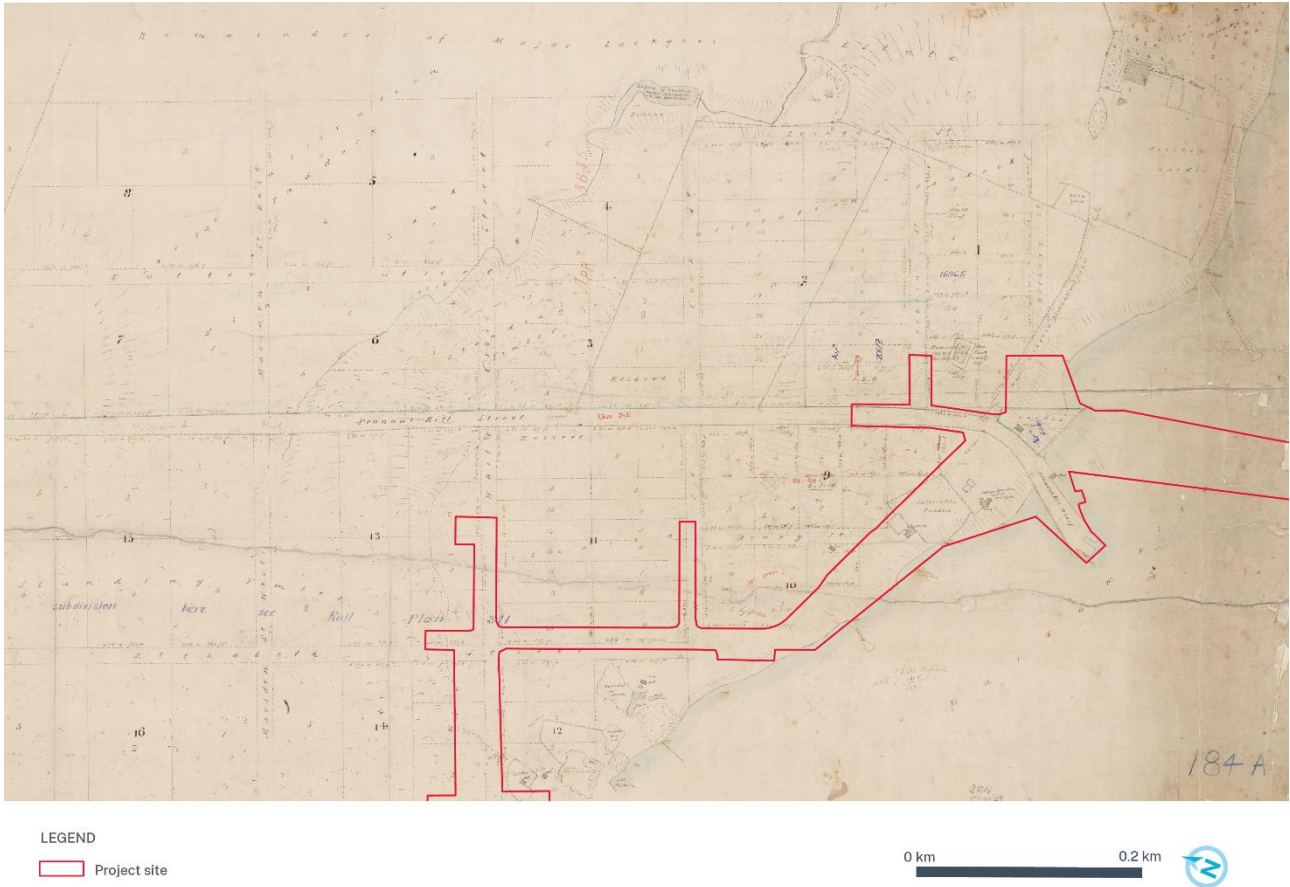
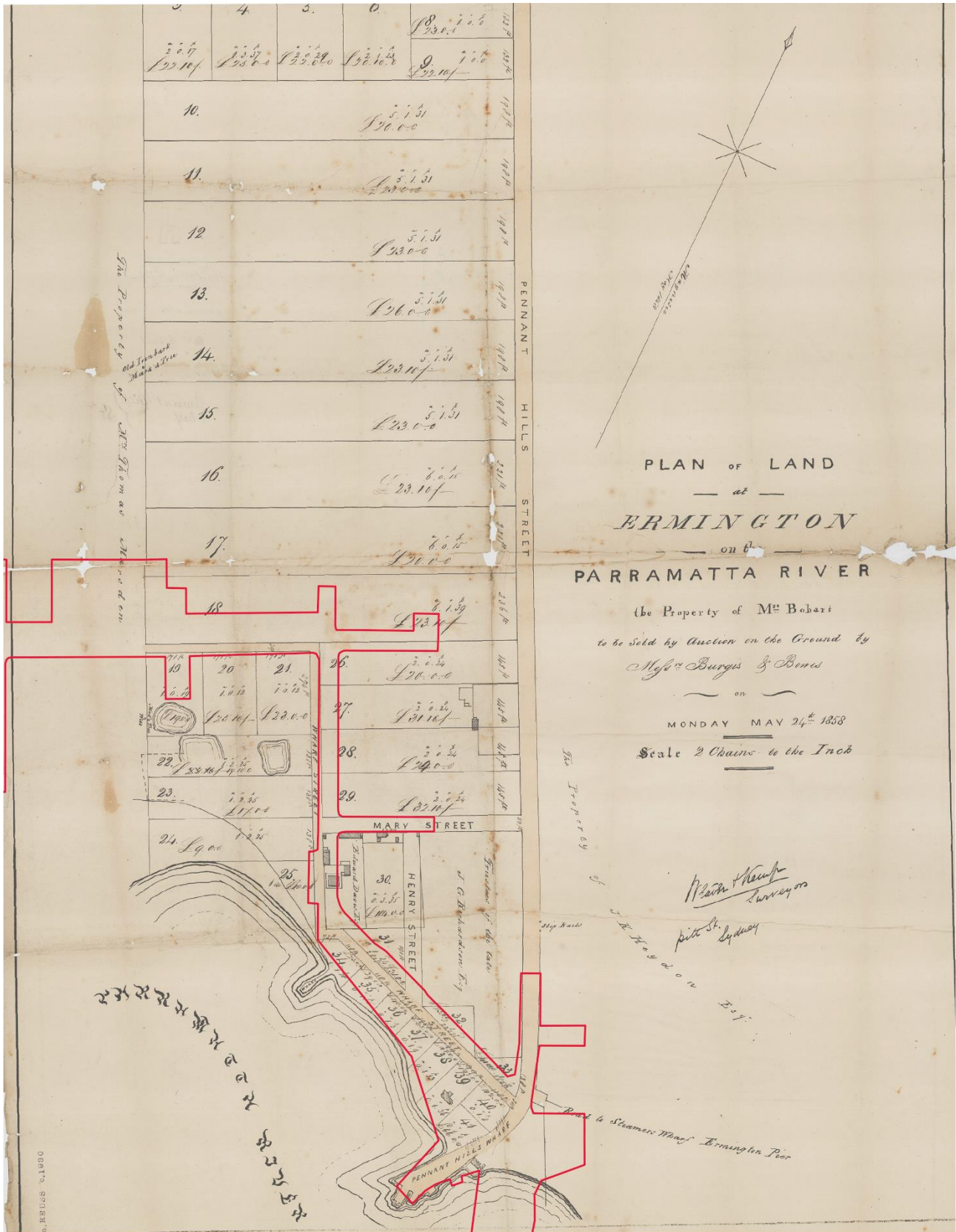


Figure 3.13: Manuscript map of subdivision of the village of Ermington, c.1841 (State Library of NSW)



LEGEND

 Project site

0 km

0.2 km



Figure 3.14: Plan of land for sale at Ermington, 1858 (State Library of NSW)

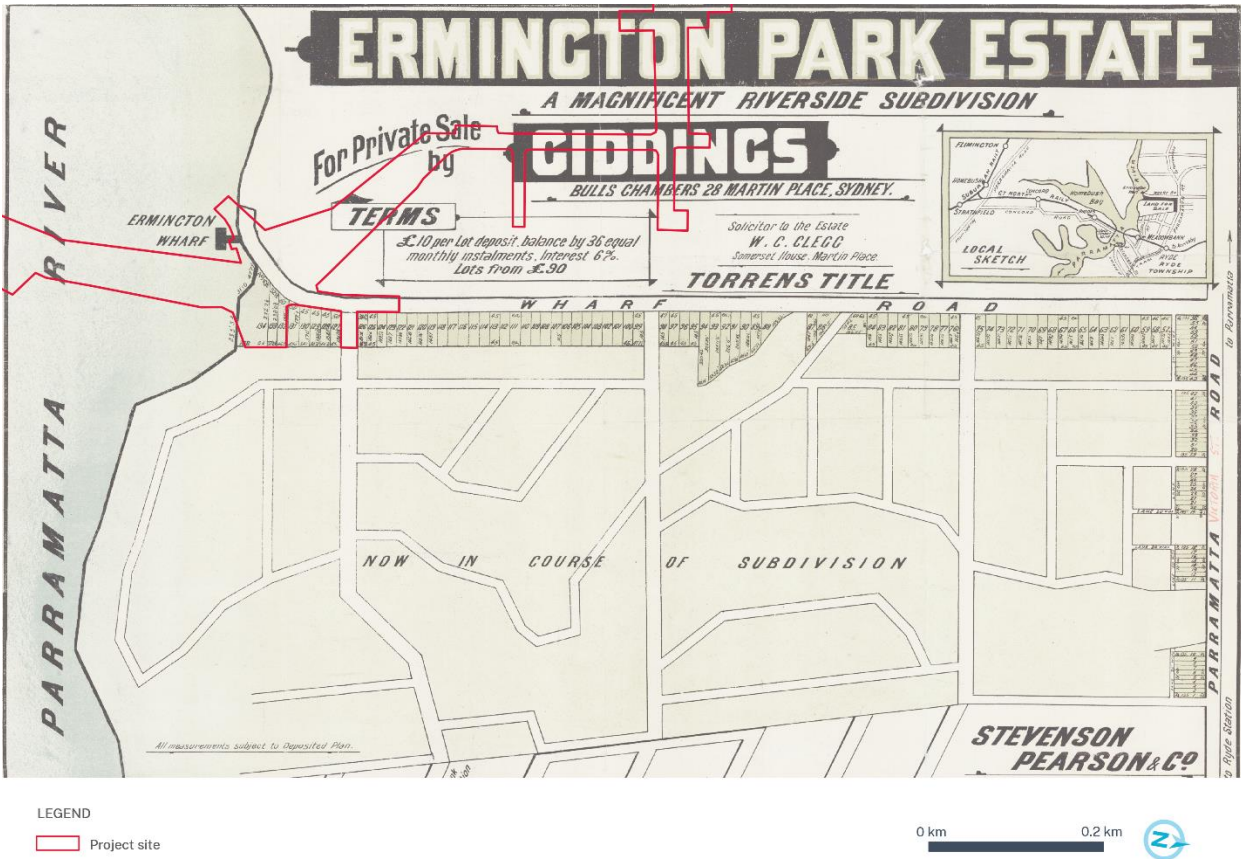


Figure 3.15: Ermington Park Estate land sales advertisement adjacent to Golf Links Estate, n.d. (State Library of NSW)



Figure 3.16: 1943 aerial image of Melrose Park (Six Maps)



LEGEND

 Project site

0 km 0.2 km



Figure 3.17: 1965 aerial image of Melrose Park (Historical Imagery Viewer)

3.5 Wentworth Point

3.5.1 The ‘Flats’ 1793 – 1949

Wentworth Point was referred to as the ‘Flats’ due to the extensive wetlands, mud-flats and mangroves in the area. The area of Wentworth Point was not included in any initial grant likely owing to its near-uninhabitable nature. Land grants on the east bank of Homebush Bay and elsewhere in the vicinity were first made to free settlers who arrived on the *Bellona* as part of the Second Fleet. The free status of these colonists gave the area the name Liberty Plains. The first grants were given to Thomas Rose, Frederick Meredith, Thomas Webb, Edward Powell and Joseph Webb.

In the final years of the 18th century, three grants were made towards the north-eastern end of Wentworth Point to Isaac Archer, John Shortland and Henry Waterhouse. These contiguous grants may have been placed to take advantage of the salt marsh adjoining, particularly for salt production. Elsewhere salt works were established to take advantage of these natural conditions.

In 1810, D’Arcy Wentworth, after whom Wentworth Point is named, received 370 hectares of land between Powells Creek and Haslams Creek, which he named Home Bush (Stockburn 2020).

The dense wetlands prevented any large-scale development of the area, in contrast with the areas surrounding the Newington and Homebush estates. The project site appears undeveloped in the 1943 aerial photograph of the Wentworth Point area (Plate 3.15).

Plate 3.15: 1943 aerial photograph of the Wentworth Point area (SIX Maps)



3.5.2 Industrialisation 1949 – 2013

In 1949, dredging of Homebush Bay commenced to provide deep water access for shipping to the upper Parramatta River. Around 120 hectares of land were also reclaimed for warehouse and waterfront industry, heavily altering the natural landscape (Stockburn 2020).

Haslams Creek and Powells Creek drain into the bay, but most of their courses have been buried in pipes or concreted over during land reclamation. Mud Island was off the western head of the bay, but since the 1890s the shoreline of much of the western side has been extended for industrial and maritime purposes. Wentworth Bay has disappeared in the reclamation (Perrin 2008).

Wentworth Point had a variety of industrial uses. Ralph Symonds plywood factory covered over five hectares and contained the largest single industrial building in the Southern Hemisphere (Plate 3.16). While de Havilland Marine manufactured various large aluminium craft for both the local and international market (Stockburn 2020). Industrial use of the area went into decline in the late twentieth century.

Plate 3.16: Aerial photographs of Ralph Symonds plywood factory, with unusual timber arch clerestory roof designed by Symonds, Homebush Bay, 1964 (State Library of NSW)



3.5.3 Residential re-development 2013 – today

In 2013, as part of the NSW Government Urban Activation Program, the former industrial area of Wentworth Point was re-zoned as a residential area. Subsequent re-development has seen the area grow into a mixed use zone with around 7,000 residents.

3.6 Sydney Olympic Park and Carter Street precinct

3.6.1 Early landholders 1794 – 1807

In 1794, Thomas Laycock received a 100 acre land grant within the Homebush area, with an additional 100 acres granted in 1795. By 1803, Laycock's land, named Home Bush totalled 785 acres. Other land grantees in the area included William Pritchard (90 acres) in 1796, Henry Waterhouse (25 acres) and John Shortland (25 acres) in 1797, Isaac Archer (80 acres) in 1800 and Samuel Haslam (50 acres) in 1806. The land was primarily used for agricultural purposes and by the early 1800s was mostly owned by two families, the Blaxlands and the Wentworths (SOPA 2022a).

3.6.2 Newington Estate 1807 – 1968

In 1807, John Blaxland acquired 1,290 acres of land, including the grants of Waterhouse, Shortland, Archer and Haslam, which he named Newington Estate. Blaxland founded several industries across his property, including a tweed mill, lime kiln and flour mill. He established salt pans on the banks of the Parramatta River, which by 1827 were producing eight tonnes of salt each week for the Sydney market. Blaxland completed Newington House in 1832 and St Augustine's Chapel in 1838. Over the ensuing decades, the boundary of the Newington Estate underwent several modifications, with land sold or leased to several parties including the Methodist Church, Australian Mining Company, City of Sydney Coal Company and Australian Timber Company. The vast property was sold to John Wetherill in 1877 (SOPA 2022a). Wetherill attempted to subdivide the property but his attempts failed and the property reverted to government control in 1880. An area of 248 acres had been resumed by 1882 for "certain works for and in connection with the erection of a

magazine for the storage of gunpowder and other explosives and certain building in connection therewith” (Tanner Architects 2013: 13), resulting in the establishment of the Newington Armament Depot.

In 1897, the Government acquired about 19 hectares of land including Newington House for the site of an Aged Women’s Asylum (Plate 3.17). The first buildings were established on the site in 1886, to house 300 patients. By 1890, there were 450 patients, and the hospital was categorised as a state asylum for dependent adults with infirmity or illness of ‘incurable character’. Various buildings were added to the property over the years until the asylum closed in the 1960s. In 1968, the Government decided to transfer the property to the Department of Prisons (SOPA 2022a). The site is now part of the SHR listed *Silverwater Prison Complex Conservation Area* (SHR No. 00813, SEPP (PCRC) Area No.4) and is located around 550 metres from the project site.

Plate 3.17: Newington House, Headquarters of Newington Asylum, n.d. (State Library of NSW)



3.6.3 Newington Armament Depot 1882 – 2000

When the colonial government resumed the land for the powder magazine in 1882, much of it was mudflats, swamp, mangroves and saltmarsh. Construction of the powder magazine was slow to commence. Work on the Government Powder Magazine commenced on 15 February 1897, with the intended purpose that it would contain “all the powder to be used for military purposes in the colony” (*The Cumberland Argus and Fruitgrowers Advocate* 1897: 8). The facility was constructed by master builders John Howie and Sons and took around 15 months to complete (Tanner Architects 2013: 13).

In 1889, large-scale reclamation works had begun. Almost 200 acres of mudflats were drained and the foreshore straightened and banked. By 1893, two miles of retaining walls had been constructed. Despite hundreds of acres of land having been reclaimed, the areas directly behind the riverbank were still considered unsuitable for extended building works. However, this unsuitability made the area ideal for the dangerous and polluting work of disposal, burning and testing of armaments and explosives. Reclamation of the wetland continued on the site through the 1930s and into World War II (Tanner Architects 2013: 16).

The Newington Armament Depot was taken over by the Commonwealth after Federation, and in 1921 control passed to the Australian Navy, who progressively upgraded the facility over the next 20 years for ammunition storage and associated functions. During World War II, the facility was greatly expanded, partly due to the presence of the United States of America's Navy, who also stored ammunition at the Armory. The Australian Navy continued to occupy the site after the war ended, progressively vacating it between 1996 and 1999. The site was transferred to the Government of New South Wales in 2000 (Tanner Architects 2013: 16-20).

When Sydney won the rights to host the 2000 Olympic and Paralympic Games, the southern part of the Newington Armament Depot was redeveloped as the Athlete's Village, and subsequently became the suburb of Newington. This caused a substantial diminishment of the 259 hectare Armament Depot site as remediation and development of the area required the removal of all but two explosives storehouses, and the construction of the new Holker Street extension between the northern and southern sections.

In July 2001, the Sydney Olympic Park Authority (SOPA) was established, a statutory body of the NSW Government under the *Sydney Olympic Park Authority Act 2001*. The Authority's charter was to manage and promote the 640-hectare Sydney Olympic Park site, including protection of the 425 hectare *Millennium Parklands Heritage Precinct* (SEPP (PCRC) Item No. A). It included the *Newington Armament Depot and Nature Reserve* (SHR No. 01850) and the remaining *Explosive Stores* (SEPP (PCRC) Item No. 87), which were defined in the Act (Tanner Architects 2013: 22).

3.6.4 Homebush Estate 1810 – 1870

In 1810, D'Arcy Wentworth acquired 980 acres of land, including Thomas Laycock's estate. The following year he established a horse stud and became one of the most noted breeders in the colony. In 1819, Wentworth acquired more land and constructed Homebush House near the corner of Figtree Drive and Australia Avenue to the south-east of the project site, which was situated within the Homebush Estate (SOPA 2022a) (Plate 3.18 and Plate 3.19).

In 1825, he developed a horseracing track on the estate, which was used as the headquarters of the Australian Jockey Club from 1841 to 1860. Shortly after the development of the racing track in 1827, D'Arcy Wentworth passed away and ownership of the property passed to his son, Charles Wentworth. The Wentworth family had drained and reclaimed tracts of land around Powell's and Haslams Creeks, and under Charles' ownership portions of the estate were tenanted. In 1839, Louisa Meredith along with her husband Charles travelled to Sydney on the *Letitia*, first living in Bathurst, then at Homebush (O'Neill 1974). Meredith described Homebush as:

Homebush was a fair specimen of a New South Wales' settlers residence... The house stood on the highest ground in the estate and for some hundreds of acres all around not a native tree nor even a stump was visible, so completely had the land been cleared, although not worth cultivation (Meredith 1861:129).

Meredith (1861:169) also described parts of Homebush as consisting of salt-water marshes, covered in high tides, throughout which deep drains had been cut and embankments formed. Furthermore, Meredith (1861:175) noted the sole source of water at Homebush came from two or three 'holes' on the Estate that described as being not unlike "old clay-pits".

Plate 3.18: Wentworth’s homestead, Homebush, front view, n.d. (State Library of NSW)



Plate 3.19: D’Arcy Wentworth’s homestead, back view, n.d. (State Library of NSW)



3.6.5 Subdivision and growth 1870 – 1910

In the 1870s and beyond, the suburbs of Sydney underwent a period of rapid expansion, and it was believed that subdivision of the Newington and Homebush estates would be profitable as a residential settlement between Sydney and Parramatta. In 1878, John Wetherill registered subdivision plans for the potential sale of the entire Newington Estate (Plate 3.20). From 1879 onwards, the Crown purchased or resumed parts of the Homebush and Newington estates for various purposes including the Newington Aged Women's Asylum (SOPA 2022a).

Homebush was subdivided in 1883 under the name Homebush Village (SOPA 2022a). The following year, Homebush Park Building Estate was advertised for sale. This estate extended over the project site, covering all the land between Parramatta Road and the Parramatta River, between Haslams and Powells Creeks (Plate 3.21). The subdivision was unsuccessful, and the estate remained relatively intact until the Public Works Department resumed the land in 1907 for the establishment of the State Abattoirs, which once covered much of the Sydney Olympic Park and Carter Street precincts of the project site (SOPA 2022a).

In 1906 and 1909, Wetherill further subdivided the property (Plate 3.21). It was hoped that the location of the lots close to the State Abattoir and Brickworks would be attractive to prospective purchasers, however the subdivision proved unsuccessful, with few sales (SOPA 2022a).

Plate 3.20: Plan of the Newington Estate, n.d. (National Library of Australia)

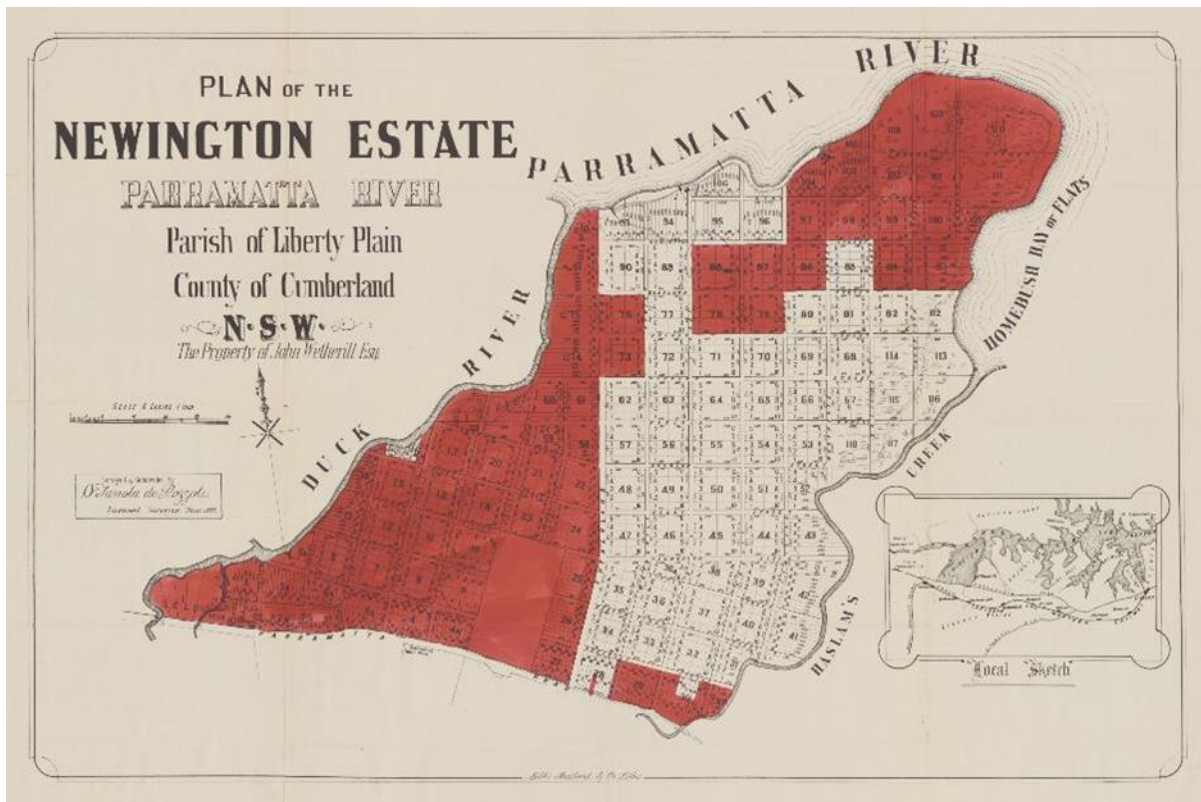
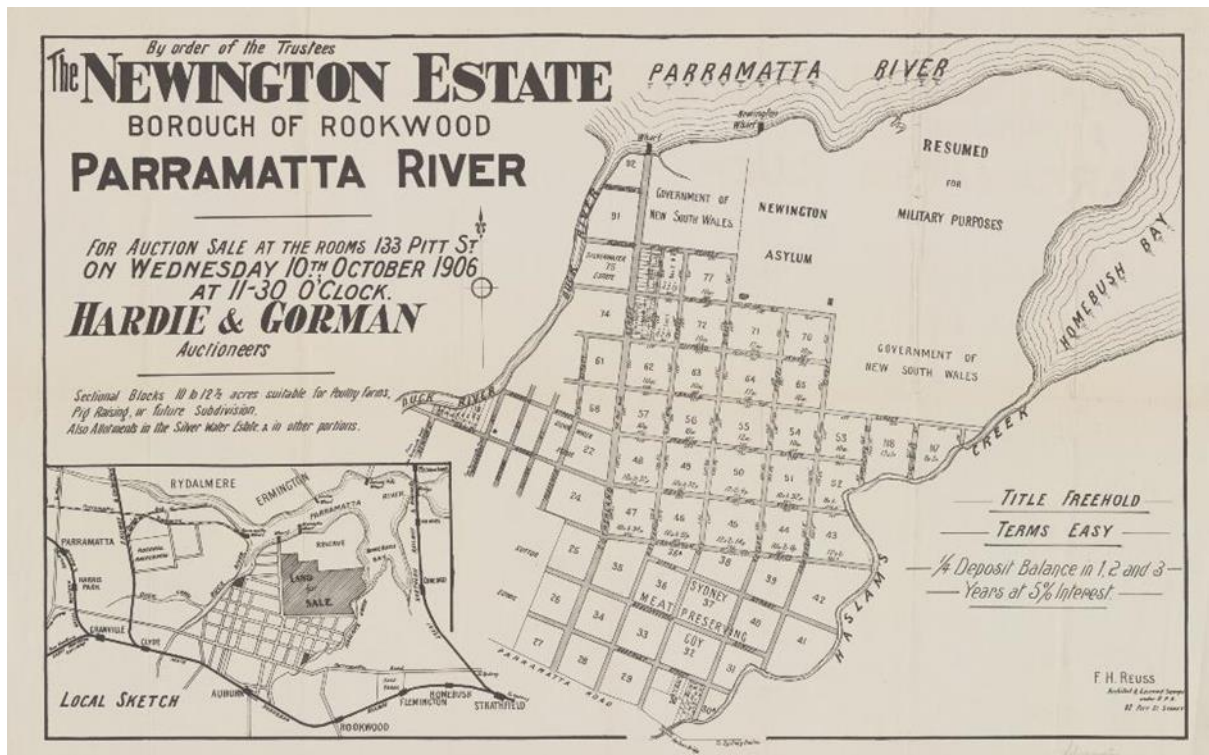




Figure 3.18: Homebush Park Building Estate, 1884 (National Library of Australia)

Plate 3.21: 1906 Newington Estate land sales advertisement (National Library of Australia)



3.6.6 State Abattoirs 1907 – today

In 1901-02, the Committee on Public Works inquiry into removing the public abattoir from Glebe Island came to the decision to move the abattoir to a new site at Homebush. The Homebush site was advantageous for its proximity to the Flemington saleyards, which had opened nearby in 1881, and because of the room to expand. Its proximity to the railway also improved transport for both animals to, and meat from, the abattoir. (GAO 2013: 118).

In 1906, 909 acres of land from the Homebush Estate was resumed for the construction of the abattoir at a total cost of £70,831. Initial construction commenced with a branch railway line to connect the abattoir to the main suburban line. In 1909, the tender for construction was advertised, and awarded to the McLeod Brothers in April 1910. Plans were drawn up by the Department of Public Works under the direction of Government Architect Walter Vernon. The first stage of works was to include 38 slaughterhouses for beef, mutton, veal and pork, an Administration Block, gatekeepers office, entry gates, refreshment and locker rooms, as well as stables and buggy shed (GAO 2013: 118-19).

The administration buildings were designed by Vernon in a Federation Arts and Crafts style, with red brick and rough cast walls, hipped roofs with red terracotta tiles and tall chimneys. The buildings contrasted sharply with the industrial complex behind it. The administration precinct had a more domestic feel with its smaller scale and designed gardens. Five buildings were constructed, including the main administration building, a formal gatehouse, a laboratory, a canteen and refreshment room and a locker room. The administration building and the gatehouse were internally fitted out with decorative pressed metal ceilings and other decorative features, while the remaining three buildings were more utilitarian and did not include any of these additions (GAO 2013: 127). The gardens that surround the administration precinct were laid out by the Director of the Botanic Gardens, Joseph Henry Maiden and were designed to complement the buildings' architecture (GAO 2013: 133) (Plate 3.22 and Plate 3.23).

When the McLeod Brothers contract expired in 1913, the slaughter rooms and administration building were complete, however the abattoir was not yet operational. Delays continued throughout 1913 and 1914, and although not yet finished, the official opening of the abattoir took place on 7 April 1915. After the opening, slaughtering began in the mutton houses, with the chilling rooms and treatment of by-products also underway. However, construction of the yards and extra buildings continued. Also, levee banks were built along Powell's and Haslams Creek to resume the tidal flats for extra resting paddocks (GAO 2013: 119-20).

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

Works continued on the site until 1922. Finally in 1923, the abattoir was fully operational (Plate 3.24). It was the largest abattoir in the Commonwealth and one of the largest in the world. It employed 1,600 workers, and had capacity to kill up to 20,000 sheep, 1,500 cattle, 2,000 pigs and 1,300 calves per day. It also produced several by-products, including bullock hair sold as 'horsehair' for furniture upholstery, bullock hooves exported to Japan for working into 'tortoiseshell', shank bones for cutlery handles, horns for buttons, and an array of other household, medicinal and domestic products (GAO 2013: 123).

Improvements and additions continued throughout the working life of the abattoir. In the 1960s, the site was modernised and an unused part of the site fronting Parramatta Road subdivided and sold as an industrial park. However, by the late 1970s, mounting debts, a fall in meat exports and a need for further modernisation put pressure on the government to close the abattoir. Subsequently, the abattoir closed on 10 June 1988. Prior to its closure, those areas surplus to requirements had been sold off and redeveloped (GAO 2013: 144).

Sydney's successful bid for the 2000 Olympic Games marked a new stage of development for the site. The remaining land was developed into Games venues and commercial spaces, while the Royal Agricultural Showgrounds and Moore Park were relocated to the area. Remediation work and road re-alignment was also undertaken (GAO 2013: 145). Today, the administration buildings precinct and gardens are all that remain of the abattoir.

The *State Abattoir heritage conservation area* (SEPP (PCRC) Item No. A) and the *State Abattoir locality* (SEPP (PCRC) Item No. 1) are located within the project site, while *State Abattoir locality* (SEPP (PCRC) Item No. 2 – The Avenue of Palms) is located adjacent to the project site.

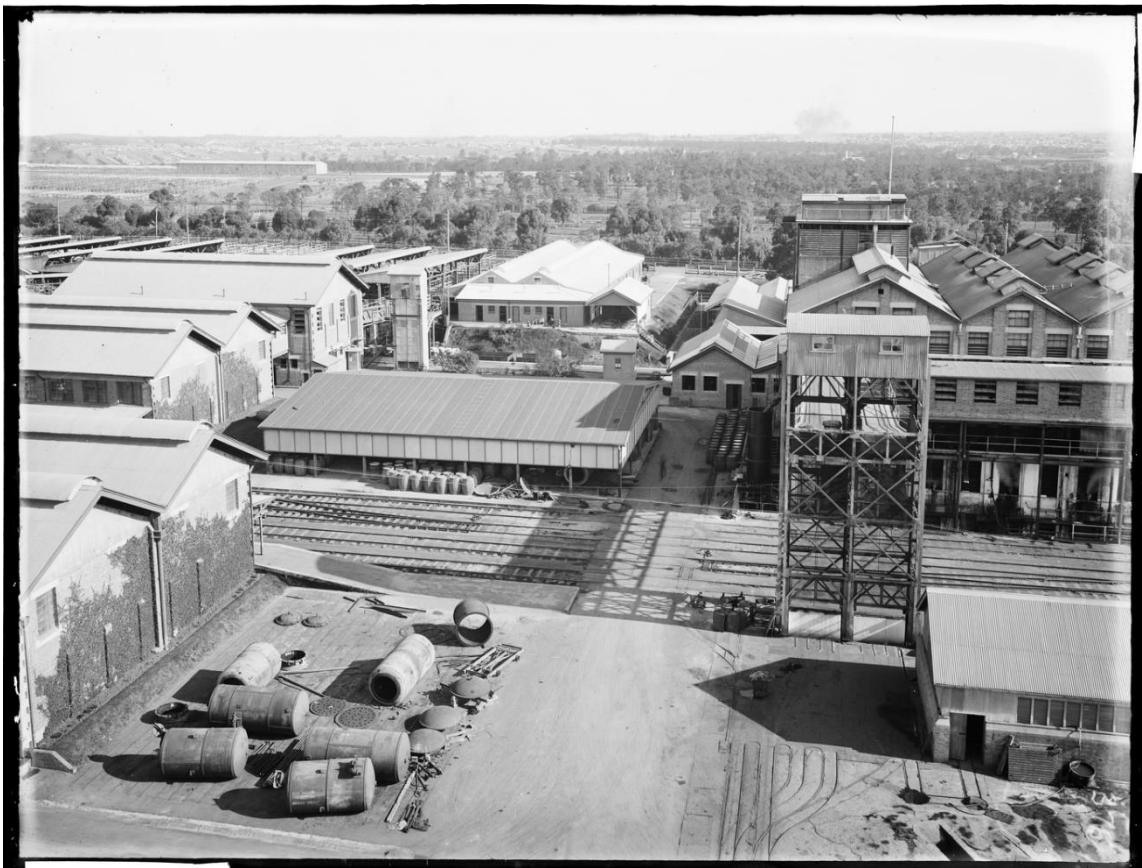
Plate 3.22: Homebush abattoirs, 1945, showing administration buildings and gardens (State Library of NSW)



Plate 3.23: Homebush abattoirs, 1945 (State Library of NSW)



Plate 3.24: Homebush abattoirs by Arthur Ernest Foster, 1927 (Mitchell Library, State Library of NSW)



3.6.7 State Brickworks 1910 – today

In 1910, the Minister for Public Works put forward a proposal to build a brickworks to supply the Department of Public Works as a cost savings effort. In 1911, 9.5 hectares of land from the State Abattoir was resumed for the State Brickworks (Plate 3.25 to Plate 3.27). By 1925, the brickworks comprised 23.5 hectares, however by the 1930s, the brickworks was in decline and sold to Brickworks Limited in 1936. The site was closed in 1940 and was taken over by the Naval Armament Depot for use as a munitions store in 1942. The Post-war housing boom saw the Government re-open the facility. Peak production was reached in 1969, however this was short lived, with the facility in decline in the 1970s. The brickworks ceased operation in 1988. Sandstone was still removed from the site until 1992. The clay pit ceased excavation much earlier and was used as a municipal waste depot from the 1960s. This site was redeveloped as a wetland area associated with Sydney Olympic Park (SOPA 2022b).

Plate 3.25: NSW State Brickworks by Rex Hazlewood, 1911-1912 (State Library of NSW)

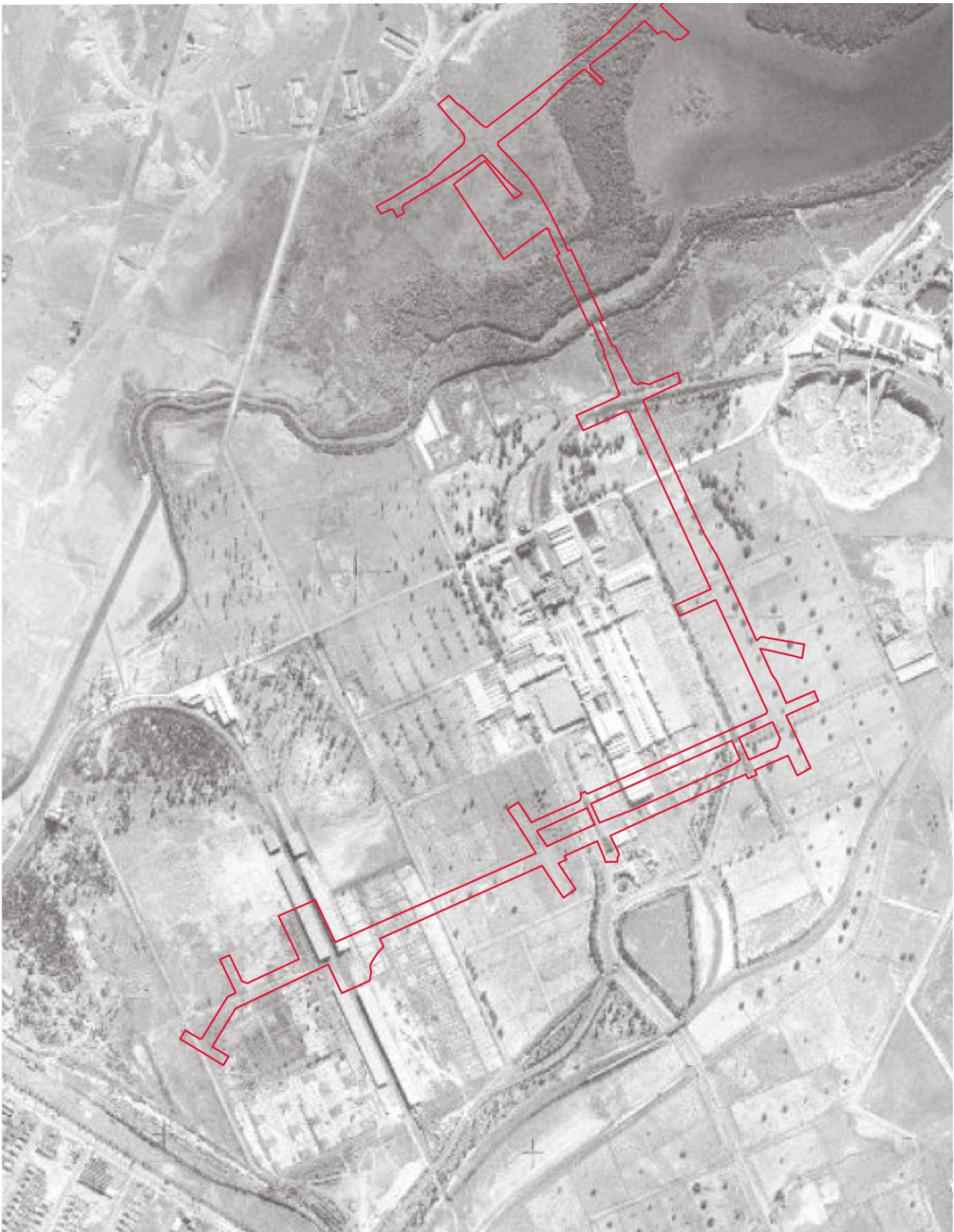


Plate 3.26: NSW State Brickworks as viewed from the Parramatta River by Rex Hazlewood, 1911-1912 (State Library of NSW)



Plate 3.27: The Pit, NSW State Brickworks by Rex Hazlewood, 1911-1912 (State Library of NSW)





LEGEND

 Project site

0 km

0.5 km



Figure 3.19: 1943 aerial photograph of the Sydney Olympic Park showing former State Abattoirs and State Brickworks (SIX Maps)

3.7 Parramatta

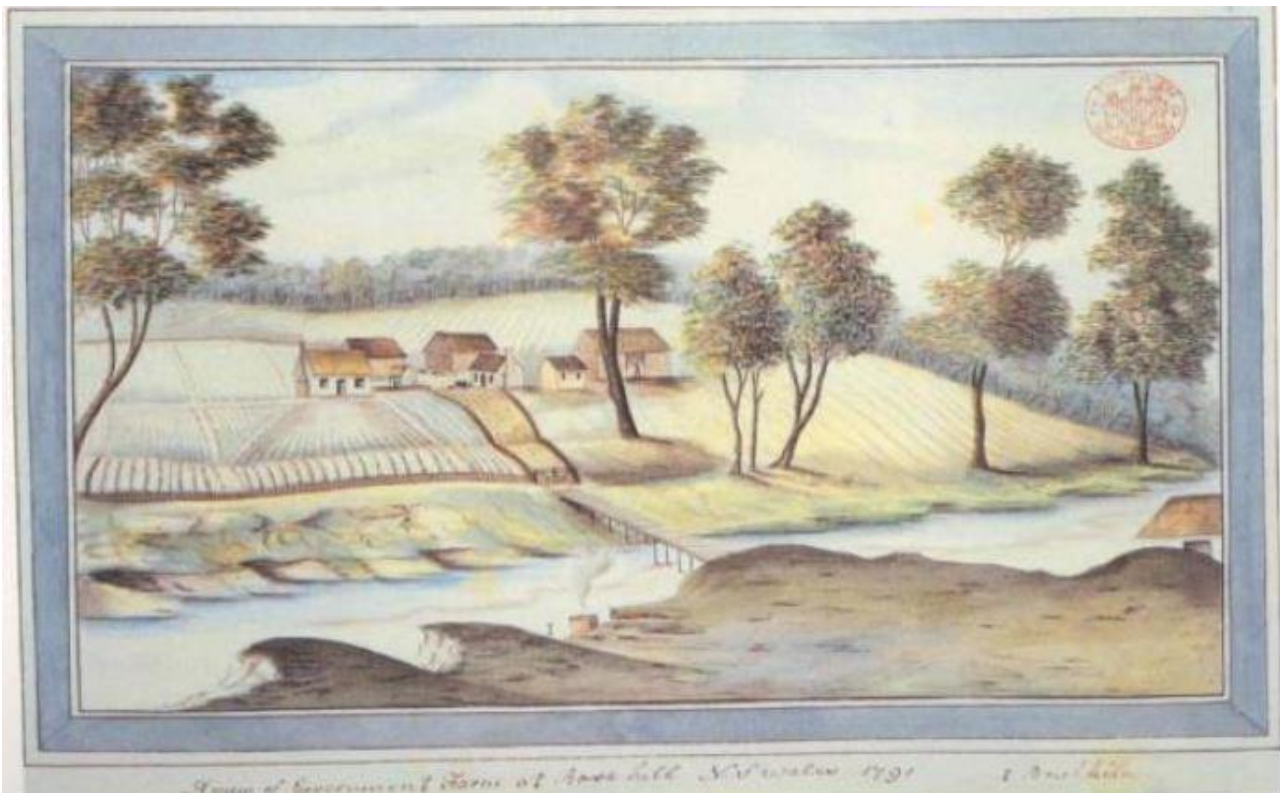
A small section of the project site is located in the Parramatta CBD, to facilitate the construction of the turnback facility on Macquarie Street. This area was previously considered as part of the Parramatta Light Rail Stage 1 EIS and so this section has been reproduced from the *Parramatta Light Rail [Stage 1] Technical Paper 10 – Built Heritage Assessment* (Artefact 2017).

3.7.1 First European settlement

After Sydney was colonised in 1788, Governor Phillip started exploration to the west for 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 the Parramatta River. This was named Rose Hill after the Secretary to the British Treasury. 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 (Plate 3.28). Dodd was Governor Phillip's personal servant who had managed farming at Farm Cove. The convicts had huts with gardens in which they lived (Artefact 2017, 23).

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. 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 (Artefact 2020, 23).

Plate 3.28: A view of Government Farm at Rose Hill, New South Wales 1791 (Source: The Watling collection, Natural History Museum, London)



3.7.2 Development of Parramatta

Parramatta was transformed from a convict settlement into a township by 1790, 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 the east coast 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), Benevolent Asylum (George Street convict barracks), Lancer Barracks (former military barracks), and Parramatta Gaol (Artefact 2017, 24).

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 (Figure 5) (Artefact 2017, 24).

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 then featured zigzagged shaped air raid trenches. A tramway was established down Windsor Road and Church Street, but was removed by the mid-twentieth century. The Parramatta Hospital also continued to undergo changes during the first half of the twentieth century with the addition of more buildings (Artefact 2017, 24).

During the second half of the twentieth century, the CBD developed into the modern commercial precinct that is seen today. Many of the earlier buildings had either been replaced by larger premises, or had been upgraded for a more commercial use. This change also occurred to the east, though again to a lesser degree than the western half, with some open allotments remaining. During this period, Church Street was also widened to accommodate the increase in traffic volume. The areas resumed for the road widening were primarily along the western side of Church Street between Market and Albert Streets, and the eastern side between Albert and Fennell Streets. The Parramatta Hospital facilities continued to expand during this period. Apart from some structures such as the Medical Superintendents Office and weather shed, which were demolished to make way for new infrastructure and car parks, the majority of the hospital facilities were retained. The Parramatta Hospital was renamed the Parramatta Psychiatric Centre in 1962-3, and in 1982-3 it was renamed again to Cumberland Hospital (Artefact 2017, 24).

Plate 3.29: George Street, Parramatta from the gates of Government House, around 1804-5 (Source: Caroline Simpson Library & Research Collection, Sydney Living Museums)



Plate 3.30: Church St, Parramatta, New South Wales [between 1875 and 1920] (Source: State Library of Victoria)



4 DESCRIPTION AND PHYSICAL ANALYSIS

Sarah van der Linde (Senior Heritage Consultant) and Bengi Selvi-Lamb (Heritage Consultant), inspected the project site on 29 September 2021. This inspection focussed on areas of known heritage values along the proposed alignment and in the immediate vicinity of the project site.

An inspection of the project site for potential heritage items located within or immediately adjacent to the project site was undertaken by Sarah van der Linde (Senior Heritage Consultant) on 24 January 2022.

Bengi Selvi-Lamb (Heritage Consultant) inspected the Parramatta CBD section of the project site on 6 April 2022.

The inspections were limited to publicly accessible areas and did not include an inspection of private property.

This section is based on the inspection and analyses the landscape and setting, existing infrastructure and heritage items within, or immediately adjacent to, the project site.

4.1 Camellia

Camellia is an industrialised area (Plate 4.1 to Plate 4.8). The Stage 2 alignment connects into the Stage 1 alignment near the western end of Grand Avenue near *Sewage Pumping Station 67* (SHR No. 01643, SHI No.4571724, LEP Item No. I01643). It proceeds east along the former industrial Sandown railway line alignment between Grand Avenue and the Parramatta River before connecting into Grand Avenue. The Parramatta Light Rail stabling and maintenance facility, currently being constructed as part of Stage 1, is located on Grand Avenue beside the Rosehill Gardens Racecourse. Beneath Grand Avenue lies the former *Tramway alignment* (Parramatta LEP Item No. I6). The area between Grand Avenue and the Parramatta River is currently used for industrial purposes, with a small section of *Wetlands* (Parramatta LEP I1) located along the riverfront. *Pumping Station* (Parramatta LEP Item No. I5) is located within the industrial estate at the eastern end of Grand Avenue. The project site extends across the Parramatta River from Camellia to Rydalmere beside Rydalmere Wharf.

Plate 4.1: West façade of Sewage Pumping Station 67 (SHR No. 01643, SHI No.4571724, LEP Item No. I01643) showing Stage 1 alignment construction (right) (RPS 2021)



Plate 4.2: View east along former industrial railway alignment at the western extent of the project site where it connects into the Stage 1 alignment near Grand Avenue (RPS 2021)



Plate 4.3: View east along Grand Avenue near Rosehill Gardens Racecourse. *Tramway alignment* (Parramatta LEP Item No. I6) previously ran down the middle of the road (RPS 2021)



Plate 4.4: View east along Grand Avenue showing former industrial railway crossing (RPS 2021)



Plate 4.5: View east along Grand Avenue showing former tracks, most likely remnants of *Tram alignment* (Parramatta LEP Item No. I6) (RPS 2021)



Plate 4.6: View east along Grand Avenue (RPS 2021)



Plate 4.7: View north of Pumping Station (Parramatta LEP Item No. I5) at the eastern end of Grand Avenue (Google Street View)

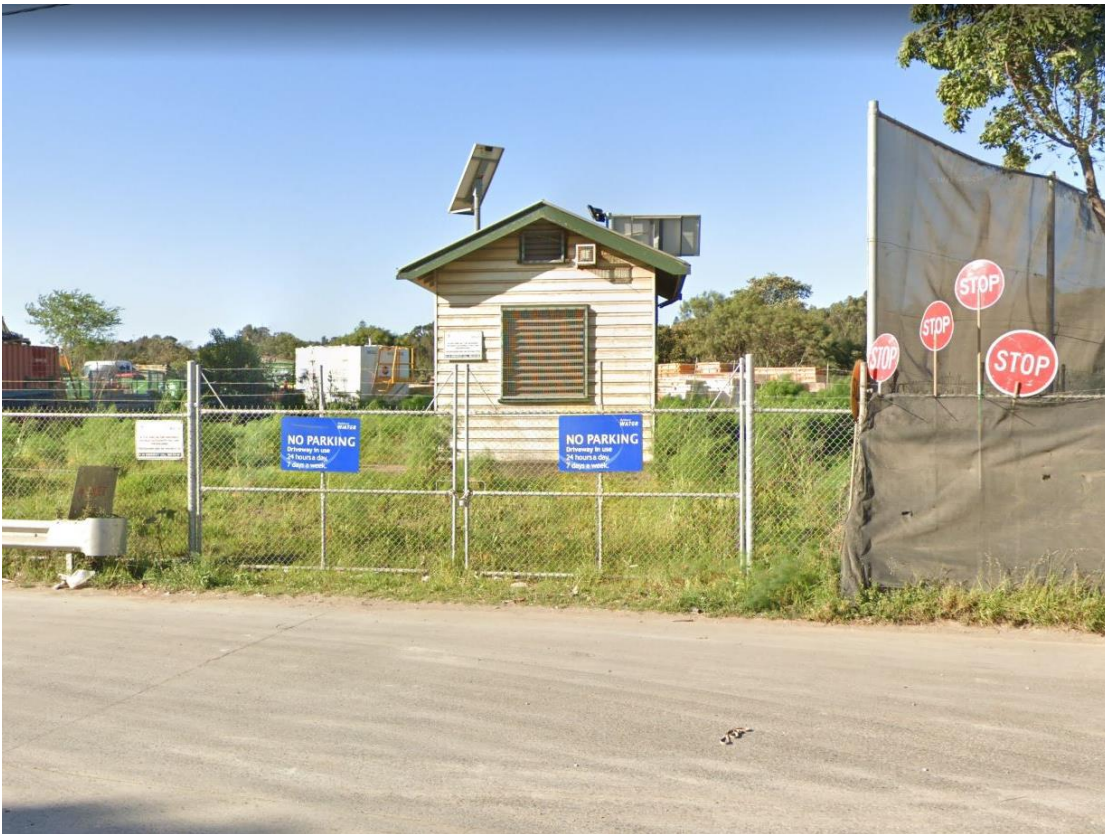


Plate 4.8: View east along the Parramatta River showing industrial area (right), Wetlands (centre and left) and Rydalmere Wharf (left) (RPS 2022)



4.2 Rydalmere

From Rydalmere Wharf, the alignment proceeds north through Eric Primrose Reserve and John Street before heading east along South Street. West of John Street lies an industrial area, while east of John Street and along South Street is a residential area. The South Street residential area is characterised by predominantly post-war brick and weatherboard houses interspersed with contemporary houses, with a wide, grassed verge along the northern side of the road (Plate 4.9 to Plate 4.13).

Plate 4.9: View south-west across Rydalmere Wharf (RPS 2021)



Plate 4.10: View north across Eric Primrose Reserve toward John Street (RPS 2021)



Plate 4.11: View west along South Street toward John Street (RPS 2022)



Plate 4.12: View west along South Street at Nowill Street (RPS 2022)



Plate 4.13: View east along South Street at Nowill Street (RPS 2022)



4.3 Ermington

In Ermington, the alignment travels along South Street, crossing Silverwater Road and traversing electricity and water easements before reaching Ken Newman Park and Tristram Street. It then travels along Boronia Street and Hope Street to Hughes Avenue.

Ken Newman Park is an open grassed area sloping north to south, with footpaths and a children’s playground. A small creek runs along the eastern extent of the park. The residential area surrounding the park comprises predominantly contemporary houses. South Street and Boronia Street are residential areas characterised predominantly by post-war fibrocement homes constructed by the NSW Housing Commission. Boronia Street also contains a few pre and post war brick and weatherboard houses, an unusual faux stone clad house, as well as several contemporary houses (Plate 4.14 to Plate 4.22).

Hope Street is characterised as a mixed residential and industrial area, with *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) located on the south-west corner of Hope Street and Hughes Avenue (Plate 4.23 and Plate 4.24).

Plate 4.14: View south-west toward Silverwater Road from South Street (RPS 2022)



Plate 4.15: View east of easement from South Street (RPS 2022)



Plate 4.16: View west across Ken Newman Park and electricity easement (RPS 2021)



Plate 4.17: View east from Ken Newman Park, across the creekline toward Boronia Street (RPS 2021)



Plate 4.18: View north across Ken Newman Park showing contemporary residential area of Tristram Street (RPS 2021)



Plate 4.19: View west of playground within Ken Newman Park (RPS 2021)



Plate 4.20: View east along Boronia Street near Spofforth Street (RPS 2021)



Plate 4.21: View east along Boronia Street near Spofforth Street (RPS 2021)



Plate 4.22: Boronia Street showing post war house compositions, including weatherboard (left), faux stone cladding (centre) and fibrocement (right) (RPS 2022)



Plate 4.23: View south-west of *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) at the corner of Hope Street and Hughes Avenue (RPS 2021)



Plate 4.24: 'Willowmere' main house within *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) site (RPS 2021)



4.4 Melrose Park

In Melrose Park, the alignment continues along Hope Street, Waratah Street and Wharf Road, crossing the Parramatta River near Ermington Boat Ramp.

The Melrose Park section of Hope Street is an industrial area (Plate 4.25). The northern section of Waratah Street is bound by an industrial estate to the west and Melrose Park Public School to the east, while the southern part of Waratah Street is bound by industrial premises to the north and *Wetlands* (Parramatta LEP Item No. I1) along the Parramatta River to the south (Plate 4.26 to Plate 4.29). The eastern side of Wharf Road is a residential area characterised by predominantly post-war houses. Ermington Boat Ramp (Plate 4.30) is located at the terminus of Wharf Road on the Parramatta River and is subject to the following listings:

- *Ermington Wharf* (Parramatta LEP Item No. I82)
- *Wharf* (Ryde LEP Item No. 165)
- *Former Pennant Hills Wharf* (SEPP(BC) Item No. 40).

Plate 4.25: View west along Hope Street (RPS 2021)



Plate 4.26: View north along Waratah Street (RPS 2021)



Plate 4.27: View south along Waratah Street showing Melrose Park Public School (left) and industrial area (right) (RPS 2021)



Plate 4.28: View north-west along Waratah Street (RPS 2021)



Plate 4.29: View south-east along Waratah Street to Wharf Road (RPS 2021)



Plate 4.30: View south-west of *Ermington Wharf* (Parramatta LEP Item No. 182) / *Wharf* (Ryde LEP Item No. 165) *Former Pennant Hills Wharf* (SEPP(BC) Item No. 40), now Ermington Boat Ramp (RPS 2021)



Plate 4.31: View east along the Parramatta River where proposed alignment crosses from Melrose Park to Wentworth Point (RPS 2021)



Plate 4.32: View south-east toward Wentworth Point, where alignment would cross the Parramatta River (RPS 2021)



Plate 4.33: View of Wetlands (Parramatta LEP Item No. I1) along the northern banks of the Parramatta River (RPS 2021)



4.5 Wentworth Point

At Wentworth Point the alignment crosses the edge of Newington Nature Reserve and *Millennium Parklands Heritage Precinct* (SEPP (PCRC) Item No. A). The alignment travels along the edge of Newington Nature Reserve and then along Hill Road, adjacent to a residential development (Sanctuary Wentworth Point).

Wentworth Point around Sydney Olympic Park Wharf is a recent residential development comprising mixed-use contemporary high rise residential and commercial buildings. North of Hill Road is *Newington Armament Depot and Nature Reserve* (SHR No. 01850), while to the south lies high density residential occupation (Plate 4.34 to Plate 4.37). The project does not extend through the Newington SHR curtilage.

Plate 4.34: View north-west along Lapwing Street through current residential development adjacent to proposed alignment (RPS 2022)



Plate 4.35: View east of Sydney Olympic Park Wharf (RPS 2022)



Plate 4.36: View south-west along Hill Road from Sydney Olympic Park Wharf (RPS 2022)



Plate 4.37: View south-west along Hill Road showing high density residential (left) and *Newington Armament Depot and Nature Reserve* (SHR No.01850) / *Millennium Parklands Heritage Precinct* (SEPP (PCRC) Item No. A) (right) (RPS 2022)



4.6 Sydney Olympic Park and Carter Street precinct

The Sydney Olympic Park section of the alignment continues along Hill Road and then follows the Holker Busway and Australia Avenue before proceeding along Dawn Fraser Avenue.

To the north of Hill Road lies *Millennium Parklands Precinct* (SREP(HBA) Item A) and to the south lies Haslams Creek and Sydney Olympic Park car park number P5. The Holker Busway cuts through the P5 car park and crosses over Haslams Creek and surrounding parkland via a bridge. Australia Avenue marks the beginning of the Sydney Olympic Park sporting and recreation zone. West of Australia Avenue lies the Sydney Showgrounds and to the east lies the wetlands created in the former Brickpit. Dawn Fraser Avenue runs directly through the Sydney Olympic Park sporting precinct and is characterised by sporting stadiums and arenas surrounded by landscaped public space. The *State Abattoirs heritage conservation area* (SEPP(PCRC) Area No.1) and *State Abattoir locality* (SEPP (PCRC) Item No. 1) is located on the south-west corner of Dawn Fraser Avenue and Showground Road, while *State Abattoir locality* (SEPP (PCRC) Item No. 2) is located on Showground Road (Plate 4.38 to Plate 4.46).

The project alignment extends from Dawn Fraser Avenue along Uhrig Road to the Carter Street precinct in the suburb of Lidcombe, which is characterised by industrial premises to the north and current high-rise residential development to the south.

Plate 4.38: View south-west along Hill Road alignment showing *Millennium Parklands Heritage Precinct* (SEPP(PCRC) Item A) (right) and P5 car park (left) (RPS 2021)



Plate 4.39: View east across the Holker Busway over Haslams Creek (RPS 2021)



Plate 4.40: View north along Australia Avenue (RPS 2022)



Plate 4.41: View south along Australia Avenue (RPS 2022)



Plate 4.42: View east across Brickpit wetlands (RPS 2022)



Plate 4.43: View east along Dawn Fraser Avenue (RPS 2021)



Plate 4.44: View south-east of *State Abattoirs heritage conservation area* (SEPP (PCRC) Area No. 1 and Item No. 1) (RPS 2021)



Plate 4.45: View north-east of *State Abattoirs heritage conservation area* (SEPP (PCRC) Area No. 1 and Item No. 1) (RPS 2021)



Plate 4.46: View west along Dawn Fraser Avenue (RPS 2021)



4.7 Parramatta

The Parramatta section of the project site extends along Macquarie Street between Marsden and Church Streets. Macquarie Street is a commercial area and is characterised by two to three storey high late nineteenth to early twentieth century buildings interspersed with low and high-rise contemporary buildings. Twin tracks associated with Stage 1 of the project currently travel south down Church Street and turn east along Macquarie Street.

The following heritage items are located within this area:

- *Shop (and potential archaeological site)* (Parramatta LEP Item No. I655) is located on the northern side of Macquarie Street at the intersection with Church Street. The building extends through to Marsden Street. *Telstra House (former post office) (and potential archaeological site)* (Parramatta LEP Item No. I657) and *HMV (former Commonwealth Bank) (and potential archaeological site)* are located immediately north along the west side of Church Street.
- *Horse parapet façade and potential archaeological site* (Parramatta LEP Item No. I656) is located on the northern side of Macquarie Street on the opposite corner of Church Street and is currently a group of shops.
- *Bicentennial Square and adjoining buildings* (Parramatta LEP Item No. I651) is located on the southern side of Macquarie Street. This item comprises the Bicentennial square, the facades of the adjoining buildings which enclose it, Victorian Free Classical drinking fountain monument, the amphitheatre, the circular garden around tree with four memorial plaques, the memorial gates to St Johns and the vista to St Johns from Church Street. Many of the components are also individually listed.
- *Murrays' Building (and potential archaeological site)* (Parramatta LEP Item No. I652) is located on the southern side of Macquarie Street, immediately east of Bicentennial Square.
- *Parramatta Town Hall (and potential archaeological site)* (Parramatta LEP Item No. I650) is located immediately south of *Murray's Building* and fronts onto Bicentennial square.
- *Centennial Memorial Clock* (Parramatta LEP Item No. I654) is located on the southern side of Macquarie Street in Bicentennial square.
- *St John's Parish Hall* (Parramatta LEP Item No. I713) and *St John's Anglican Cathedral* (SHR No. 01805, Parramatta LEP Item No. I01805) are located immediately south of Bicentennial square. *Warden's cottage (verger's cottage)* (Parramatta LEP Item No. I653) is located within the southwest corner of the heritage curtilage of *St John's Anglican Cathedral* and is situated outside of the 66 metre vibratory impact buffer zone.

Plate 4.47: View west along southern side of Macquarie Street from Marsden Street (RPS 2022)



Plate 4.48: View west along northern side of Macquarie Street from Marsden Street (RPS 2022)

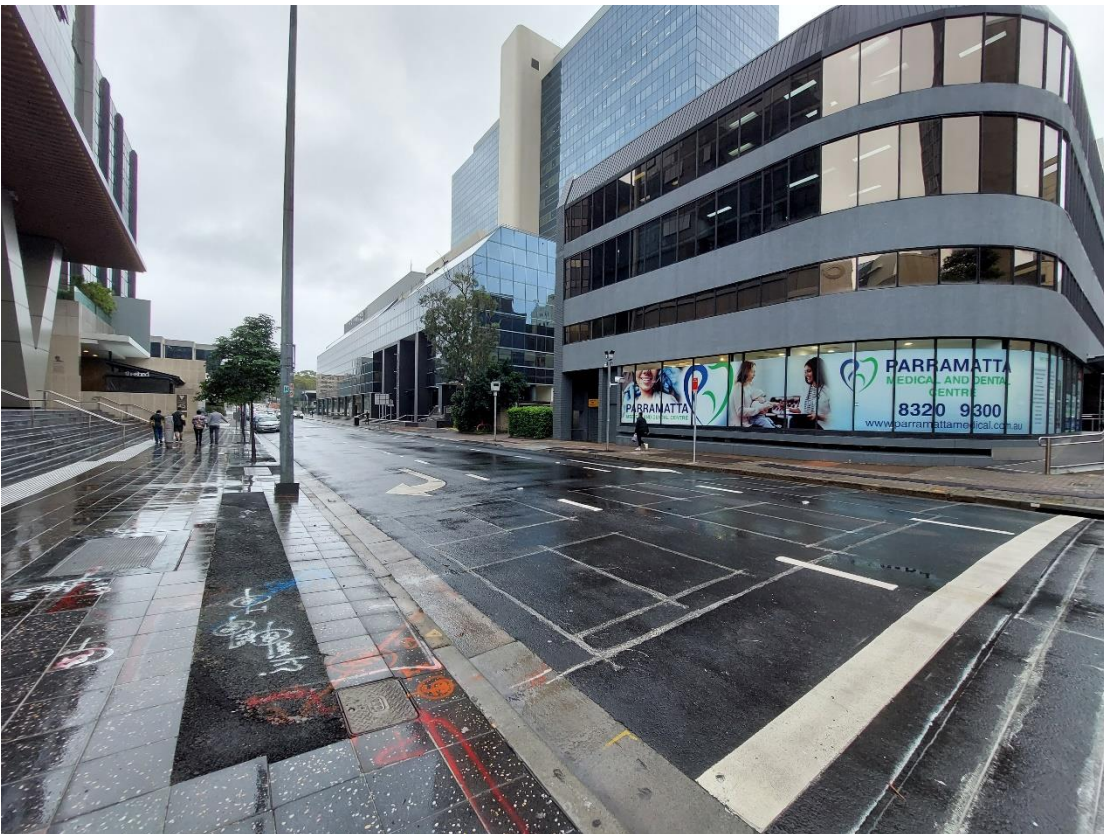


Plate 4.49: View north along Marsden Street from Macquarie Street, showing part of Shop (and potential archaeological site) (Parramatta LEP Item No. 1655) (RPS 2022)

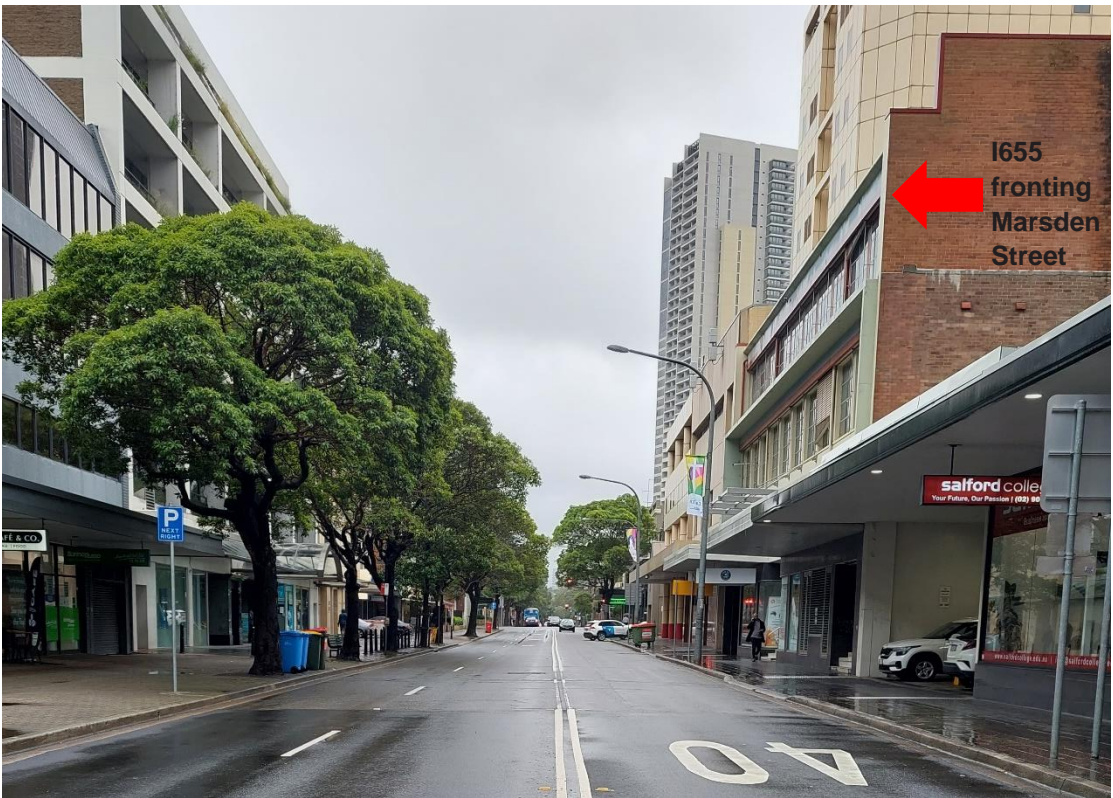


Plate 4.50: View south along Marsden Street from Macquarie Street (RPS 2022)

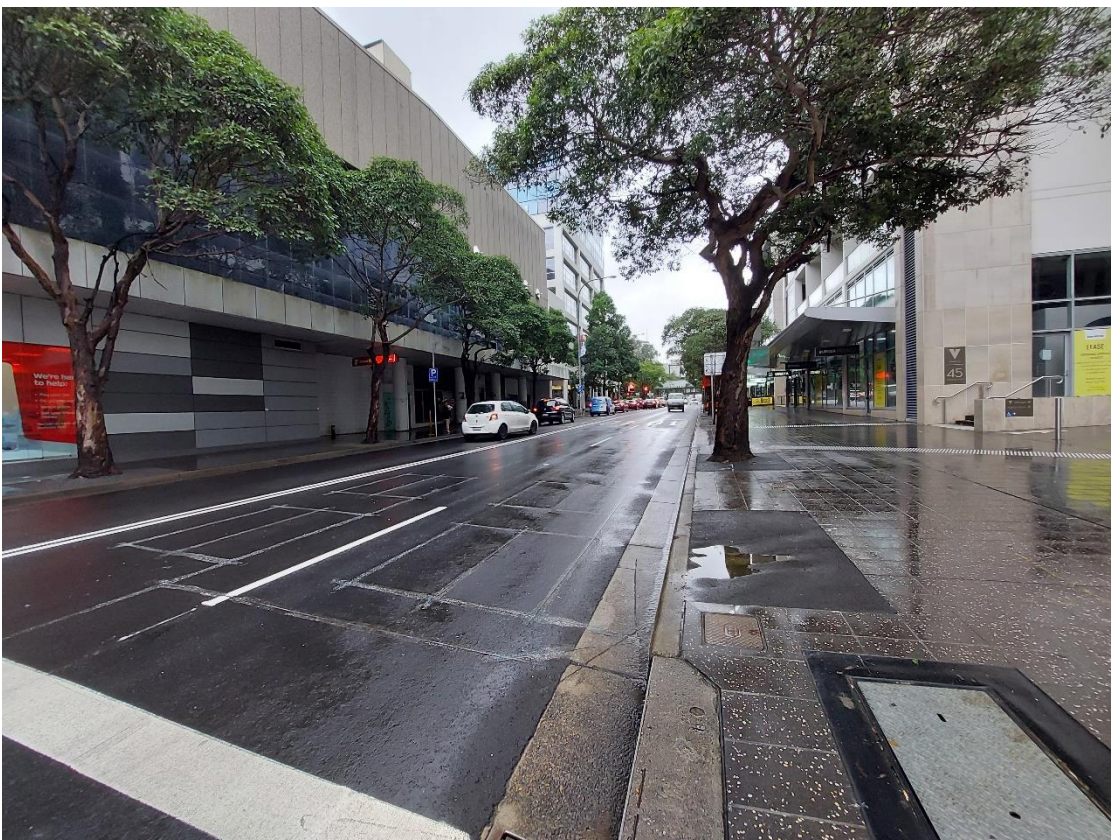


Plate 4.51: View east along Macquarie Street (RPS 2022)



Plate 4.52: View north-west along Macquarie Street, showing Shop (and potential archaeological site) (Parramatta LEP Item No. I655) (RPS 2022)



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Plate 4.53: View south across Macquarie Street towards *Bicentennial Square and adjoining buildings* (Parramatta LEP Item No. I651), showing Stage 1 light rail tracks along Macquarie Street (RPS 2022)

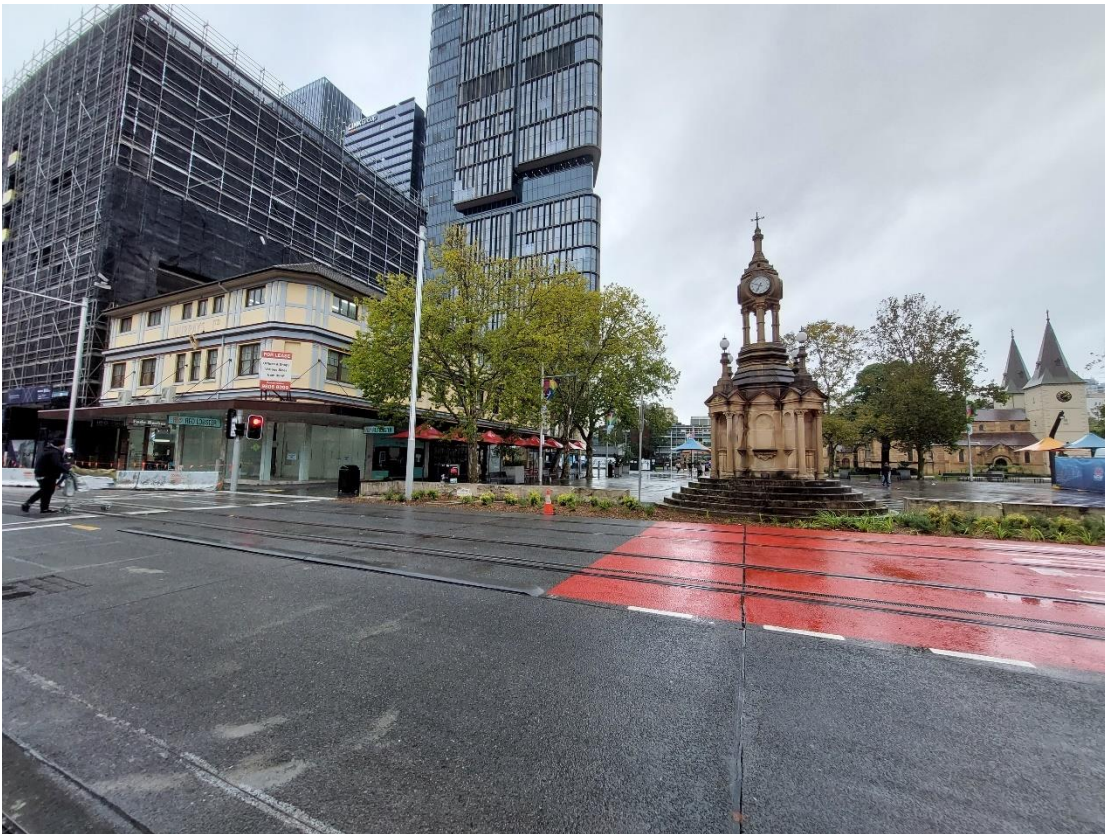


Plate 4.54: View south of *Murrays' Building (and potential archaeological site)* (Parramatta LEP Item No. I652), showing Stage 1 light rail tracks (RPS 2022)



Plate 4.55: View west of *Centennial Memorial Clock* (Parramatta LEP Item No. I654), showing Stage 1 light rail tracks (RPS 2022)



Plate 4.56: View east along Macquarie Street at intersection with Church Street, showing *Horse parapet façade* and potential archaeological site (Parramatta LEP Item No. I656) and Stage 1 light rail tracks (RPS 2022)



5 POTENTIAL HERITAGE ITEMS

Five potential heritage items were identified within the project site during the visual inspection:

- House at 46 John Street, Rydalmere
- House at 69 South Street, Rydalmere
- House at 71 South Street, Rydalmere
- House at 67 Boronia Street, Ermington
- House at 151 Wharf Road, Melrose Park.

Visual inspection of the potential heritage items was limited to publicly accessible areas. Descriptions of each potential heritage item is presented below, with their location in relation to the project site shown in Figure 5.1, Figure 5.2 and Figure 5.3.

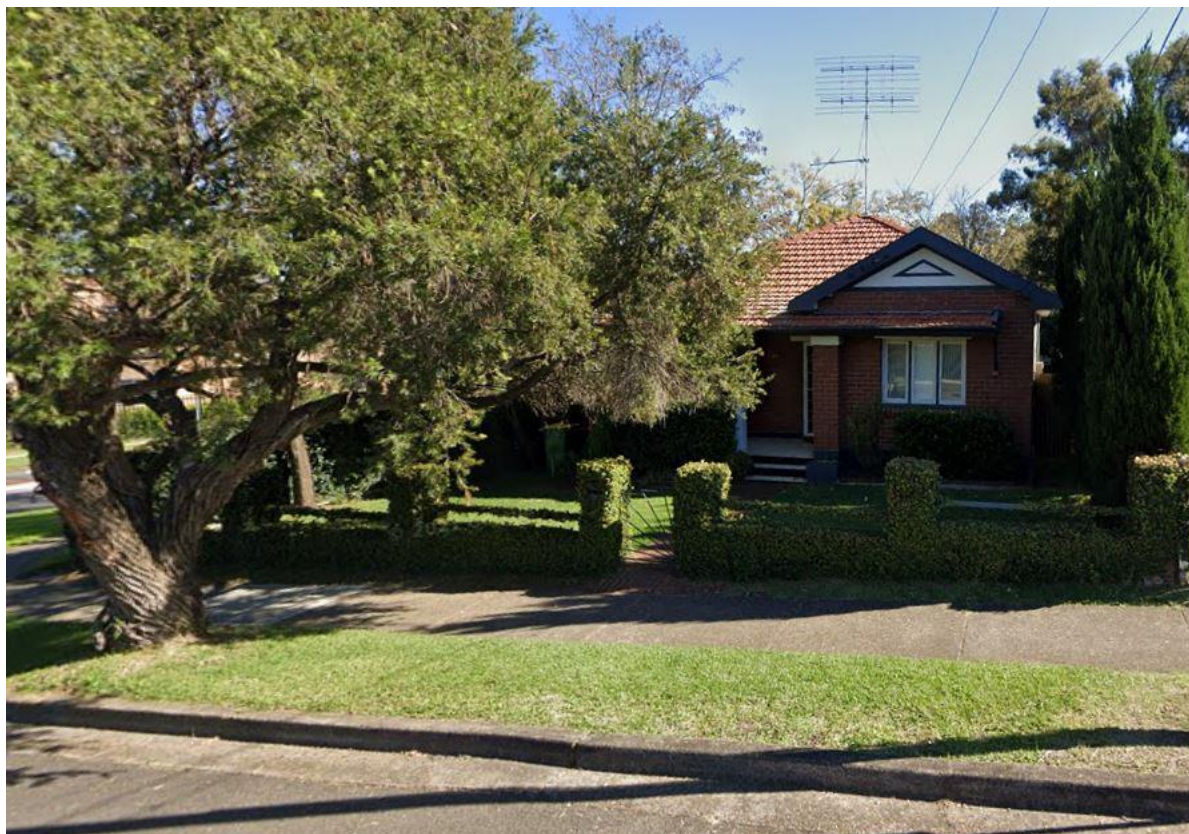
An assessment of significance for each potential heritage item is presented in Section 6.1.19.

5.1 46 John Street, Rydalmere

Located on a corner block at the intersection of South and John Streets, 46 John Street, Rydalmere is a Bungalow house dating to 1910 – 1930 (Plate 5.1). In typical bungalow style it is constructed from brick, has a gabled roof, porch and grouped windows. A creeper covered brick and metalwork fence, contemporary with the house, marks the front boundary of the property along John Street, with a large mature *Callistemon* (Bottlebrush) on the front nature strip. A row of mature conifers along the northern property boundary and a wide easement planted with Jacarandas along South Street add to the landscape setting of the property.

The house was one of the first houses to be built in Rydalmere after the area was subdivided into residential allotments (Plate 5.5). The wider streetscape setting of the house comprises predominantly post-war houses (1945-1965) interspersed with modern houses along John Street and industrial buildings along South Street.

Plate 5.1: Potential heritage item, 46 John Street, Rydalmere (Google Street View 2021)



5.2 69 South Street, Rydalmere

69 South Street, Rydalmere is a Californian Bungalow house dating to 1910 – 1930 (Plate 5.2 and Plate 5.3). The property fronts South Street and extends all the way through to Dorothy Street. It is set back from the street due to a wide easement running along the northern side of South Street. Constructed from red brick with a grey brick façade, the house is a typical example of a Californian bungalow, demonstrating attributes such as gabled roof, porch featuring brick piers and grouped front windows featuring Art Nouveau patterned stained glass.

The setting of the house comprises a manicured front garden bounded by modern fencing on all sides. The house is located immediately next to 71 South Street, another Californian Bungalow house dating to the same period. While the two houses are not identical, they were likely constructed together by the same owner or builder.

A 1930 aerial image of Rydalmere shows the two houses to be the only houses constructed on South Street at this time, making 69 South Street one of the earliest houses in the neighbourhood after Rydalmere was subdivided into residential allotments (Plate 5.5). The wider streetscape setting of the house comprises predominantly post-war houses (1945-1965).

Plate 5.2: Potential heritage item, 69 South Street, Rydalmere (RPS 2022)



Plate 5.3: 69 South Street (left) and 71 South Street (right) (RPS 2022)



5.3 71 South Street, Rydalmere

71 South Street, Rydalmere is a Californian Bungalow house dating to 1910 – 1930 (Plate 5.4). The property fronts South Street and extends all the way through to Dorothy Street. It is set back from the street due to a wide easement running along the northern side of South Street. Constructed from red brick, the house is a typical example of a Californian bungalow, demonstrating attributes such as gabled roof, porch featuring brick piers and grouped front windows featuring Art Nouveau patterned stained glass.

The setting of the house comprises a mature trees and shrubs and a later brick fence. The house is located immediately next to 71 South Street, another Californian Bungalow house dating to the same period. While the two houses are not identical, they were likely constructed together by the same owner or builder.

A 1930 aerial image of Rydalmere shows the two houses to be the only houses constructed on South Street at this time, making 71 South Street one of the earliest houses in the neighbourhood after Rydalmere was subdivided into residential allotments (Plate 5.5).

Plate 5.4: Potential heritage item, 71 South Street, Rydalmere (RPS 2022)



Plate 5.5: 1930 aerial image of Rydalmere showing potential heritage items (Historical Imagery Viewer)



5.4 67 Boronia Street, Ermington

67 Boronia Street, Ermington is a Bungalow house dating to 1910-1930 (Plate 5.6). In typical bungalow style it is constructed from red brick, has a gabled roof, porch featuring brick plinths and grouped windows. It is set back from the street due to a wide easement running along the northern side of Boronia Street. A later garage has been added to the front of the property and two mature conifers stand in front of the porch. The property has no front fence and sits open to the street.

The house pre-dates much of the surrounding houses, which primarily comprise post-war fibrocement homes constructed by the NSW Housing Commission.

The house seems to be the first house built on Boronia Street and one of the first in the neighbourhood after Ermington was subdivided into residential allotments (Plate 5.7). The wider streetscape setting of the house comprises predominantly post-war fibrocement houses constructed by the NSW Housing Commission.

Plate 5.6: Potential heritage item, 67 Boronia Street, Ermington



Plate 5.7: 1930 aerial image of Ermington showing potential heritage items (Historical Imagery Viewer)



5.5 151 Wharf Road, Melrose Park

151 Wharf Road, Melrose Park appears to be an Edwardian house dating to 1901-1919 (Plate 5.8, Plate 5.9 and Figure 5.4). The weatherboard house displays Edwardian features, including veranda and grouped windows. The front yard of the house features a manicured garden and a crimped wire fence along Wharf Road.

While the style of house predates surrounding houses, which comprise mainly post-war weatherboard or brick houses interspersed with contemporary houses, aerial images of Melrose Park do not show a house at this location until 1951 (Plate 5.10 to Plate 5.12). Further investigation suggests that a house was not added to the property until after the land changed hands in 1948. This is supported by a 1924 Valuer General's land valuation for the property which does not list any improvements, meaning the land was vacant in 1924, and the 1938 sewerage diagram also shows no house on the site in 1938.

While the house appears to be an Edwardian house, research indicates the house is likely of post-war construction consistent with its surrounds.

Plate 5.8: House at 151 Wharf Road, Melrose Park (RPS 2022)



Plate 5.9: House at 151 Wharf Road, Melrose Park (RPS 2022)



Plate 5.10: 1930 aerial image of Melrose Park showing Major Lockyers Road to Ermington House present at the site of 151 Wharf Road (Historical Imagery Viewer)

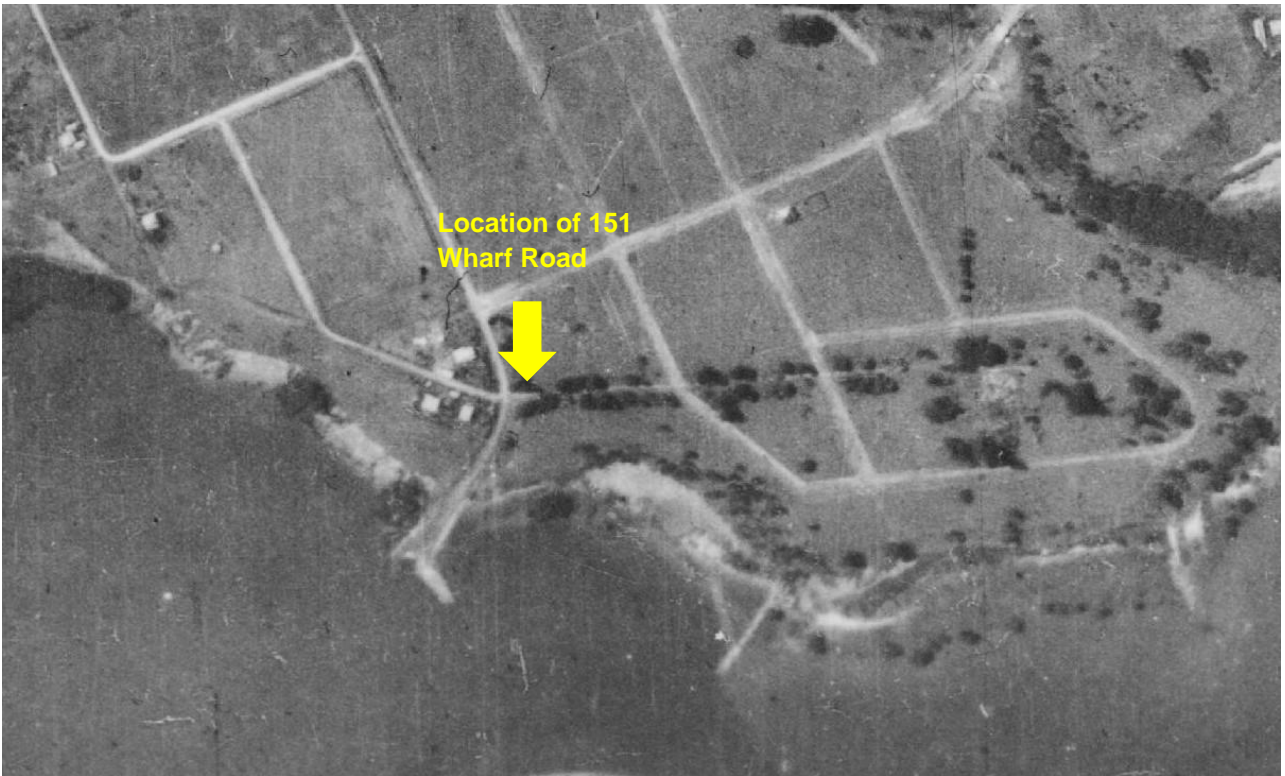


Plate 5.11: 1943 aerial image of Melrose Park showing remnants of Major Lockyers Road and 151 Wharf Road as vacant land (Historical Imagery Viewer)

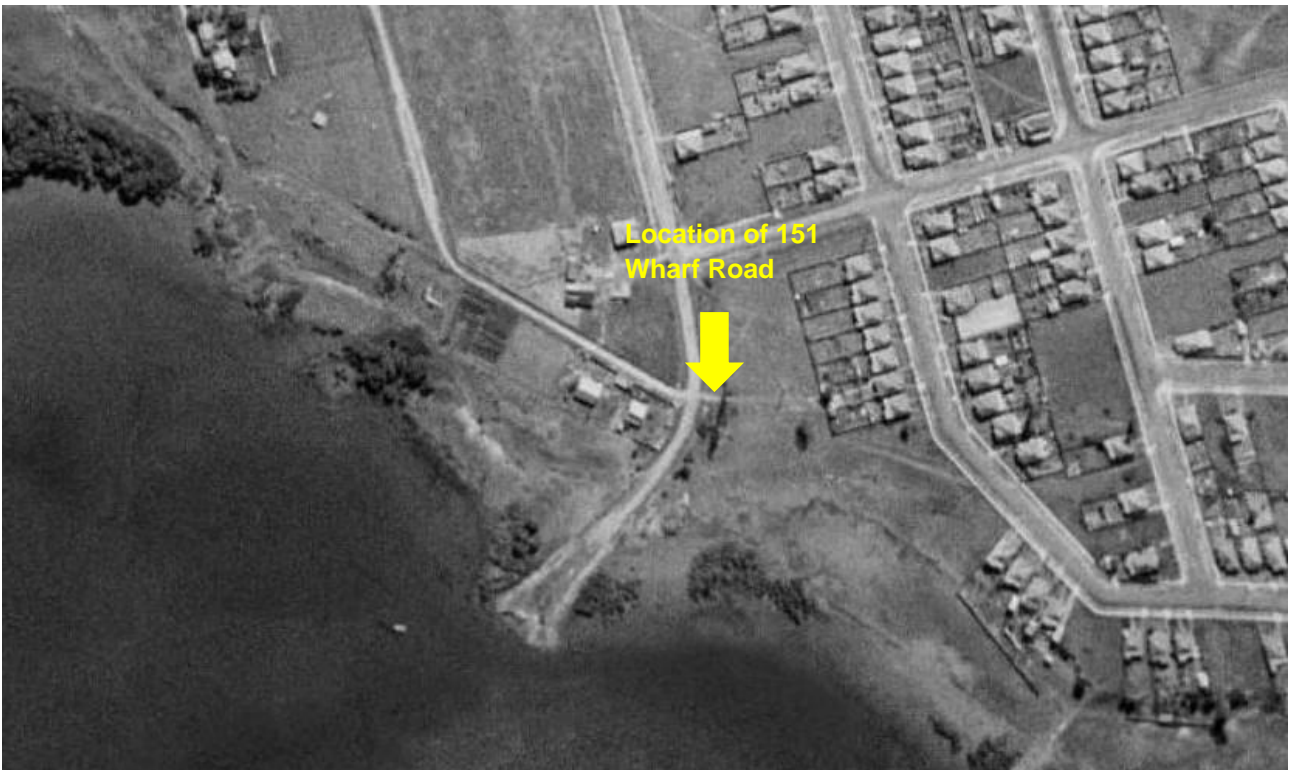
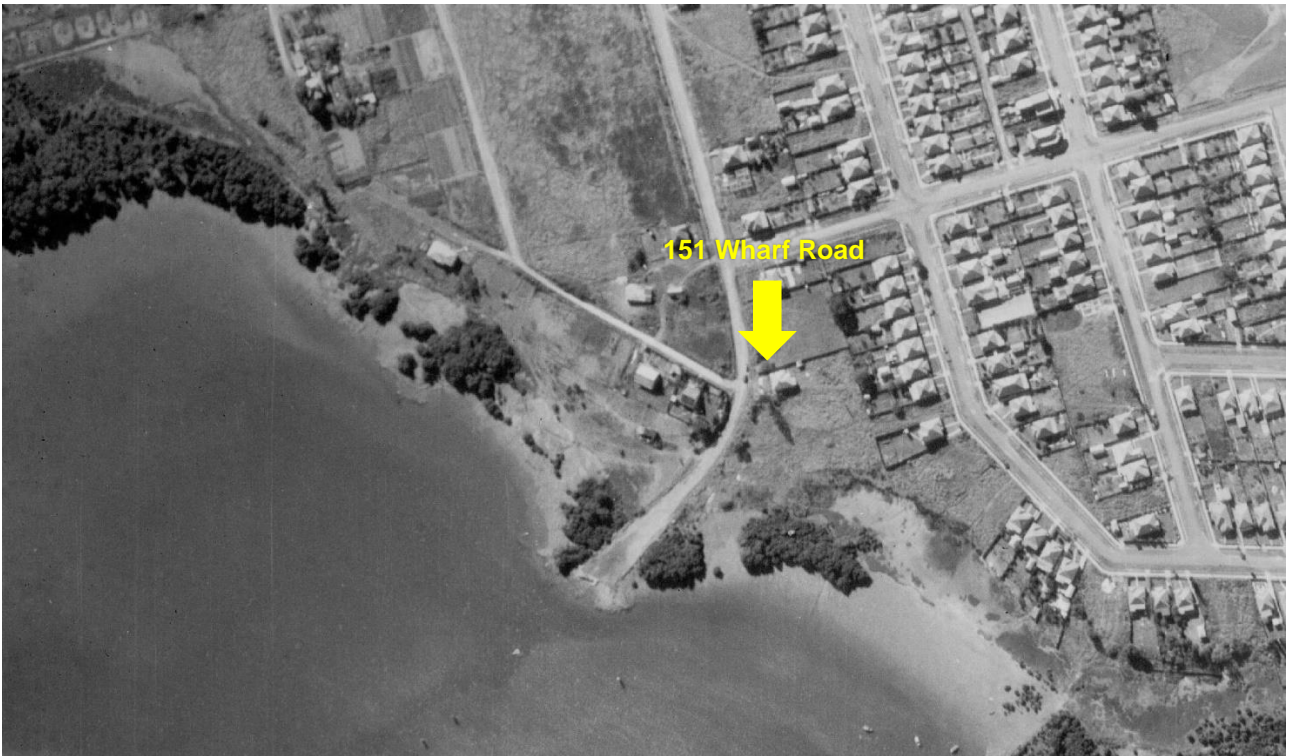


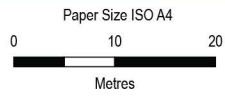
Plate 5.12: 1951 aerial image of Melrose Park showing house now situated on 151 Wharf Road (Historical Imagery Viewer)





Legend

- Project site
- Potential Heritage Items
- Cadastre



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Transport for NSW
Parramatta Light Rail Stage 2 EIS
Statement of Heritage Impact

Project No. 12557728
Revision No. A
Date 31/08/2022

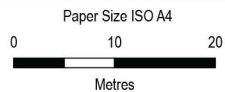
Potential heritage items in relation to the project site

FIGURE 5.1



Legend

- Project site
- Potential Heritage Items
- Cadastre



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Transport for NSW
Parramatta Light Rail Stage 2 EIS
Statement of Heritage Impact

Project No. 12557728
Revision No. A
Date 31/08/2022

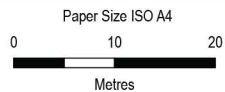
**Potential heritage items in relation
to the project site**

FIGURE 5.2



Legend

- Project site
- Potential Heritage Items
- Cadastre



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Transport for NSW
Parramatta Light Rail Stage 2 EIS
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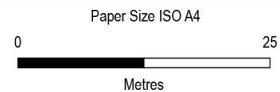
**Potential heritage items in relation
to the project site**

FIGURE 5.3



Legend

- Project site
- Discounted potential heritage
- Vibratory impact buffer



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Transport for NSW
Parramatta Light Rail Stage 2 EIS
Statement of Heritage Impact

**Potential heritage items in
relation to the project site**

Project No. 12557728
Revision No. C
Date 31/08/2022

FIGURE 5.4

6 ASSESSMENT OF SIGNIFICANCE

This section provides an assessment of the significance of heritage items located in, or within the immediate vicinity of, the project site in accordance with the NSW *Heritage Act 1977* (the Heritage Act).

In NSW, significance is assessed against the NSW Heritage Council criteria for assessing cultural and/or natural significance:

- Criterion (a): An item is important in the course, or pattern, of NSW's cultural or natural history (of the cultural or natural history of the local area)
- Criterion (b): An item has strong or special association with the life or work of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)
- Criterion (c): An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)
- Criterion (d): An item has strong or special association with a community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons
- Criterion (e): An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)
- Criterion (f): An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)
- Criterion (g): An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or a class of the local area's cultural or natural places or cultural or natural environments).

The Heritage Act also distinguishes between items of local and State significance:

- items of local significance demonstrate historical, cultural, social, archaeological, architectural, natural or aesthetic value of significance to an area
- items of State significance are of significance to the State in relation to the historical, cultural, social, archaeological, architectural, natural or aesthetic value of the item.

6.1 Established heritage significance for statutory heritage items

This section summarises information presented on statutory heritage lists.

6.1.1 Newington Armament Depot and Nature Reserve (SHR No.01850)

6.1.1.1 NSW heritage significance assessment criteria

The heritage significance of *Newington Armament Depot and Nature Reserve* is established on the SHR. The assessment of significance against the NSW criteria as presented on the SHR is below.

Criteria (a) Historical significance: *Newington Armament Depot and Nature Reserve is historically significant for its preservation of evidence of European occupation along the Parramatta River. It demonstrates the early occupation of lands at Homebush by Europeans, only nine years after the area was first sighted by members of the first fleet, who remarked upon the presence of Aboriginal people in the area. It was the site of an early land grant to pastoral and industrial entrepreneur John Blaxland (1769-1845) whose family were influential in the colony, and whose house is located on adjacent land. The site demonstrates the importance of Parramatta River in the opening up of the colony and the early rural settlement of areas close to Parramatta. Its historical importance as an Armament Depot lies in its demonstration of the evolution of systems and regulations of explosives handling and storage over 90 years*

and the role of Sydney as a major port for the Australian Navy fleet. It is highly illustrative of the extent of involvement of the Royal Australian Navy and US Navy in the Second World War and the logistics provided by Australia to the Allies.

Criteria (b) Historical association significance: The site of the Newington Armaments Depot has historical association with John Blaxland (1769-1845) who arrived as a free settler in 1806. Blaxland was the first European to substantially develop the land at Newington. He made a contribution to the economic development of the colony, held the office of magistrate and became well known for his disagreements with the early Governors, in particular Governor Bligh.

The place is associated with the Royal Australian Navy who occupied the site from 1921 until 1997. It is also associated with the Royal Navy (British) and the US Navy.

Criteria (c) Aesthetic/Technical significance: Newington Armament Depot's unusual mixture of historic buildings, some of which are partially submerged within earth mounds, with its open parkland setting bordered by the forest and wetland together with its relationship to the Parramatta River make a remarkable landscape. The complex features an outstanding collection of turn of the century brick structures which display the application of Federation design to purpose built industrial buildings.

Criteria (d) Social/Cultural significance: Newington Armaments Depot is of social value to the former Navy employees and their families who lived and worked on site up until the 1990's.

Criteria (e) Research potential: Newington Armaments Depot has high potential for interpretation and research into technological developments in explosives handling and storage. It illustrates the development of blast containment structures and design philosophies to accommodate changing international explosives regulations. The buildings constructed for the US Navy during the Second World War are significant examples of military storehouse technology. Specific building types demonstrate the adaptation of building technology for armaments handling and storage and the specific nature of armaments work practices.

Research conducted within the endangered estuarine wetland and forest communities is used to inform an adaptive management regime, thereby assisting conservation of these communities. This research has wider application to management of other lands that support similar ecological systems and species.

Criteria (f) Rarity: The Royal Australian Navy Armament Depot at Newington was unique in the history of NSW for its role as the major storage and supply depot of explosive navy armament to service the fleet facilities in Sydney Harbour from 1895 to 1998. It was the only place in NSW where there was a combination of operational activities and physical facilities for the Australian, the US and the Royal Navies on the one site.

Three "endangered ecological communities", listed under the Threatened Species Conservation Act 1995 (Coastal Saltmarsh; Swamp Oak Floodplain Forest; Sydney Turpentine Ironbark Forest) are found on the site. The Turpentine Ironbark Forest is also listed as critically endangered in the Environment Protection Biodiversity Conservation Act 1999. The nature reserve is the only remaining example on the Parramatta river of a complete estuarine zonation, from tidal mudflats, to mangroves, saltmarsh, swamp oak flood plain forest and eucalypt forest. Almost all similar sequences have been cleared in the Sydney Basin. The site is home to part of a listed "endangered population" of the White-fronted Chat and to the saltmarsh plant *Wilsonia backhousei*, both of which are listed as "vulnerable species" under the Threatened Species Conservation Act 1995. A Green and Golden bell frog population is found on site which is "endangered" under the Threatened Species Conservation Act 1995 and vulnerable under the Environment Protection Biodiversity Conservation Act 1999. The site is the only known maternity roost of the White striped Freetail Bat in the Sydney area and is also the only known maternity roost of this species in a building. The site is home to 144 species of birds, including migratory shorebirds and ten species of bats.

Criteria (g) Representativeness: The forest and wetland demonstrate the characteristics of their respective classes of ecological community. Newington Armaments Depot is an excellent example of an armament depot that has evolved over the course of the 20th century. The integrity of the precinct is significant as it is able to demonstrate all periods of the life of the facility.

Integrity/Intactness: The precinct has been reduced from its original size at the height of its operations. However, the remaining precinct has a high degree of integrity.

6.1.1.2 Established statement of significance

The statement of significance for the SHR item *Newington Armament Depot and Nature Reserve* as presented on the SHR is:

The former Royal Australian Navy (RAN) Armament Depot - Newington known as Newington Armament Depot and including the area now known as the Newington Nature Reserve, is potentially of State heritage significance as a place which demonstrates the historical and technical development of systems and regulations of explosives handling and storage from the 1890s to 1999 and also demonstrates the importance of Sydney as a Navy Port. Newington Armament Depot and Nature Reserve is historically significant as it contains physical evidence demonstrating the history of European occupation through to the end of the 20th century. The site is a valuable tool for research relating to the early settlement and development of the colony of NSW and the development of defence from colonial times.

*Newington Armament Depot and Nature Reserve is potentially of State significance as an extensive cultural landscape containing features from all periods of its human occupation as well as regionally rare forest and wetlands. Newington Nature Reserve is reserved under the NSW National Parks and Wildlife Act 1974 because of its significant ecological values; these extend beyond the boundaries of the Reserve into other parts of the site. The site's estuarine wetland and forest communities are rare remnants of ecological communities that once dominated this region. These provide a valuable resource for research and include a number of rare and endangered ecological communities, flora and fauna including Sydney Turpentine Ironbark Forest, Coastal Saltmarsh, the Green and Golden Bell Frog, *Wilsonia backhousei* and the White Fronted Chat. The site supports 144 bird species and ten bat species including the only known maternity roost of the White-striped Freetail bat in the Sydney area. In addition, it supports the only remaining example of a complete zonal succession from eucalypt forest, saltmarsh, mangroves and tidal mudflats on the Parramatta River estuary.*

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.2 Sewage Pumping Station 67 (SHR No. 01643, SHI No. 4571724, Parramatta LEP 2011 Item No. I01643)

6.1.2.1 NSW heritage significance assessment criteria

The heritage significance of *Sewage Pumping Station 67* is established on the SHR. The assessment of significance against the NSW criteria as presented on the SHR is below.

Criteria (a) Historical significance: *SP0067, Camellia was commissioned in 1931 and played an important role in the major advance in the protection of the public health of the Parramatta region by ending the discharge of treated sewage into the Parramatta River. The construction of SP0067 and the NSOOS helped pave the way for the continued growth of Parramatta, Auburn and surrounding region.*

Criteria (c) Aesthetic/Technical significance: *SP0067 is one of the largest low level sewage pumping stations in the Sydney Water Corporation system. The building was designed in a industrial version of the Federation Free Style, exploiting the use of good face brickwork and contrasting rendered string courses and cornices. Whilst the style of the building is not innovative for the period, it is unique due to its sheer scale and attention to detail, including the use of tuck pointed brickwork which is rare for a building of this size and age. It is visually prominent and makes a positive contribution to the local cultural landscape.*

Criteria (d) Social/Cultural significance: *Item is listed on the National Trust (NSW) Register and is thus recognised by an identifiable group, and as such has importance to the broader community. The development of the station greatly reduced pollution of the Parramatta River. It took sewage from Lidcombe Hospital, which was the responsibility of the Health Department.*

Criteria (e) Research potential: *SP0067 has the potential to reveal information about the construction techniques and design of the superstructure and substructure. The pumping station still fulfills its role over 70 years after its introduction as a low level sewage pumping station as originally designed and constructed albeit with some mechanical upgrading.*

Research conducted within the endangered estuarine wetland and forest communities is used to inform an adaptive management regime, thereby assisting conservation of these communities. This research has wider application to management of other lands that support similar ecological systems and species.

Criteria (f) Rarity: SP0067 is rare as the largest SPS at the time of its construction.

Criteria (g) Representativeness: The superstructure is a representative example of a Federation Free Style public utility building. SP0067 is a representative example of a low level sewage pumping station on the Northern Suburbs Ocean Outfall Sewer and SPS technology.

Integrity/Intactness: Building fabric substantially is intact.

6.1.2.2 Established statement of significance

The statement of significance for the SHR item Sewage Pumping Station 67 as presented on the SHR is:

SP0067 is of historic, aesthetic and technical/research significance. Historically it was the first low level sewage pumping station constructed in the Parramatta district. Its construction along with the completion of the NSOOS ended the discharge of treated sewage into the Parramatta River, which greatly improved the public health of Parramatta and paved the way for the continued urban expansion of the region. Aesthetically, it is an impressive example of an industrial utility building designed in the Federation Free Style and is noteworthy for the extensive use of tuck pointed brickwork, which is indicative of the public importance of the station at the time. Technically, it is a fine example of sewage pumping station design which has proved to be very effective, as evidenced by its continual use for over 70 years.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.3 St John's Anglican Cathedral (SHR No. 01805, Parramatta LEP Item No. I01805)

6.1.3.1 NSW heritage significance assessment criteria

The heritage significance of *St John's Anglican Cathedral* is established on the SHR. The assessment of significance against the NSW criteria as presented on the SHR is below.

Criteria (a) Historical significance: *St John's Cathedral, Parramatta has historical significance at State level as the site of one of the two earliest Anglican parishes established in Australia (1802); the site of the first parish church built in Australia (1803) and the only such site to have remained in continuous use as a church from 1803 to the present time; and for its towers built in 1817-19 which are the only surviving fabric of the first St John's church and a rare surviving legacy of Governor Lachlan and Elizabeth Macquarie to the built environment of NSW.*

Criteria (b) Historical association significance: *St John's Cathedral meets this criterion of State significance because it has strong associations with three early colonial governor's, with Elizabeth Macquarie (wife of one of these governors) and with Lt John Watts as an important early designer of colonial buildings, especially in Parramatta. It also has associations with colonial architectes John Houison and Cyril Blacket and with the regiment of Royal NSW Lancers stationed in Parramatta.*

Governor Lachlan Macquarie ordered the construction of the towers and his wife Elizabeth Macquarie provided the model for the tower design. Lt John Watts (who was also responsible for the design of Macquarie's extensions to Old Government House, Parramatta) implemented Elizabeth Macquarie's design for the towers.

Reverend Samuel Marsden, resident of Parramatta from 1794 to his death in 1838 and the first Rector of St John's, was long associated with this church and is regarded by Anglicans as one of their founding ministers.

The church is associated with Governor Hunter who left a major legacy in the infant colony by his promotion of religion and churches. He laid the foundation stone of the original brick church in 1797 or 1798. and in 1802 proclaimed the Parish of St John's Parramatta. St John's has been the parish church since 1803. The church of St John's was named in Governor Hunter's honour by Governor King when he set up the parishes in Parramatta and Sydney in 1802.

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

The site is associated with Governor King who proclaimed the Parish of St John's Parramatta in 1802 and named the parish church of St John's for Governor Hunter in 1803.

The Cathedral is significant as the work of three notable architects who worked in New South Wales in the nineteenth century: Lieutenant John Watts, James Houison and Cyril Blacket.

St John's is associated with the regiment of Royal NSW Lancers, stationed in Parramatta from 1897.

Criteria (c) Aesthetic/Technical significance: *St John's Cathedral meets this criterion of State significance because the towers of St John's Anglican Cathedral, Parramatta show the influence of Governor Lachlan Macquarie and his wife Elizabeth who suggested the use of the Reculver church for the design of the original St John's Chapel, and also by demonstrating the key role of Lt John Watts in advancing this design with speed and efficiency as well as Macquarie's wider programme of building in Parramatta.*

The design of St John's demonstrates the importance Macquarie placed on constructing civic buildings of style that would both improve and civilise the convict colony of NSW.

The towers of St John's Cathedral are an important surviving element of Macquarie's ambitious public works program.

The towers were a focal point in the nineteenth century townscape of Parramatta. Although hidden by higher more recent development from more distant views, they continue to be an important part of the streetscape of Parramatta. The twin spires of St John's have long been an important element of the civic identity and landscape of Parramatta. They dominate the town in almost every nineteenth century view of Parramatta.

The Cathedral is significant as the work of three notable architects who worked in New South Wales in the nineteenth century: Lieutenant John Watts, James Houison and Cyril Blacket.

The overall design is a fine example of the Victorian Romanesque style utilising the towers of the previous chapel on the site to frame the western front and to visually anchor the building.

Three extant churches survive from the Macquarie era; St James, King Street, Sydney; St Matthew's, Windsor; and St Luke's, Liverpool. All are churches designed by Macquarie's Civil Architect, ex-convict Francis Greenway. Their extant fabric and visual impact demonstrate Macquarie's grand scheme to enhance the built form and aesthetics of the colony as well as his programme of re-vitalising convict society through religion as well as education.

The towers of St John's Church, Parramatta, though not designed by Greenway, are an important demonstration of the same aims in the second town of the colony and illustrate Macquarie's desire to undertake the same re-vitalisation by boosting an existing church, as part of his wider scheme of improving Parramatta.

Criteria (d) Social/Cultural significance: *It meets this criterion of State significance as St John's has been the centre of an active Anglican community since its inception. This activity has continued to the present day.*

The parish of St John's Parramatta originally catered for the whole of the western Cumberland Plain. Parishioners came from surrounding districts to worship at St John's. As settlement progressed, St John's established satellite churches which evolved into separate parishes.

The Anglican Church has acknowledged its ongoing commitment to the continued preservation of the Cathedral as a significant item of Anglican heritage in Australia for the purpose of continued Christian worship. The commitment of its parishioners is ongoing.

St John's Cathedral has local heritage significance as a landmark site of community esteem in the Sydney's second city and demographic centre. The Cathedral is a prominent landmark located in park-like grounds that are daily traversed by Parramatta's large population of commuters en route to the bus and rail interchange.

Criteria (e) Research potential: *It appears to meet this criterion of State significance due to the potential archaeological remains on this site of the 1803 brick parish church of St John's, the first parish church built in Australia.*

Any surviving archaeology from the 1803 church would provide rare and significant evidence of the earliest establishment of Christian worship in the penal colony of NSW.

Criteria (f) Rarity: *It meets this criterion of State significance as the site of the original 1803 brick parish church which was the first parish church built in the colony. Archaeology of this building may still survive in the vicinity of the current Cathedral building as a rare resource with potential to reveal data about early church building in convict Australia.*

The two towers constructed in 1817-1819 are the only surviving fabric of this first church building. As such they have rarity at state level as the oldest remaining part of any Anglican church in Australia and as rare extant examples of the legacy of Governor Lachlan and Elizabeth Macquarie to the built environment of NSW. The towers are also rare in Australian ecclesiastical architecture as the only church towers constructed in the colonial period and one of the small number of church or cathedral towers built to date in Australia.

Integrity/Intactness: General condition including the render on the towers appears to be good.

6.1.3.2 Established statement of significance

The statement of significance for the SHR item *St John's Anglican Cathedral* as presented on the SHR is:

St John's Cathedral is of state significance as the oldest church site and continuous place of Christian worship in Australia, dating from 1803; as one of the two oldest parishes proclaimed in Australia in 1802; for potential archaeology of the 1803 parish church of St John's that was the first parish church built in Australia, and for the historical significance and rarity of the two towers built in 1817-19 by Governor Macquarie and his wife Elizabeth that are the only surviving fabric of the first church of St John's, the oldest remaining part of any Anglican church in Australia and a rare surviving legacy of Governor Lachlan and Elizabeth Macquarie to the built environment of NSW.

Governor King's 1802 proclamation of the first two parishes of the colony of NSW -- St John's Parramatta and St Phillip's Sydney -- demonstrated the colony's early spiritual development and the formal recognition of the Church of England as the recognised denomination of the colony. The present St John's parish church (now Cathedral) is built on the site of the first (1803) parish church, whereas the present St Phillip's Church, York Street, Sydney has moved from the site of the first (1809) St Phillip's parish church that was built at nearby Lang Park.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.4 State Abattoir heritage conservation area (SEPP (PCRC) Area No. 1) and State Abattoir locality (SEPP (PCRC) Items No. 1 & 2)

6.1.4.1 NSW heritage significance assessment criteria

The heritage significance of *State Abattoirs* is established in the CMP (GAO 2013) in accordance with the State Environmental Planning Policy (Precincts – Central River City) 2021. The assessment of significance against the NSW criteria as presented on the CMP is below.

Criteria (a) Historical significance: *The Abattoir Heritage Precinct has STATE Heritage Significance under this criterion.*

The land on which the administration buildings stand was part of an early land grant to D'Arcy Wentworth in 1810. The early granting of the site demonstrates the importance of the Parramatta River in the opening up of the colony, and the early settlement of the Homebush area. This estate was also the site of the Homebush Racecourse between 1840 and 1860, and the place where the Australian Jockey Club was formed in 1842.

The land on which the administration buildings stand was part of an early land grant to D'Arcy Wentworth in 1810. The early granting of the site demonstrates the importance of the Parramatta River in the opening up of the colony, and the early settlement of the Homebush area. This estate was also the site of the Homebush Racecourse between 1840 and 1860, and the place where the Australian Jockey Club was formed in 1842.

The Precinct is significant for its association with the Sydney 2000 Olympic and Paralympic Games and the construction of Sydney Olympic Park, for which the buildings were sympathetically modified and used as an administration and information centre. The preservation of the buildings, gardens and landscape features provides Sydney Olympic Park with an important link to the history of the site and the Abattoirs in particular.

The historical significance of the Abattoir Heritage Precinct is demonstrated by:

- *The complex of buildings.*

Criteria (b) Historical association significance: *The Abattoir Heritage Precinct has LOCAL Heritage Significance under this criterion.*

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

The Homebush Abattoir Heritage Precinct has an historical association with D'Arcy and William Charles Wentworth, as their estate. Home Bush encompassed the administration Precinct. The Wentworth's were influential public figures in the colony, notable for their support of emancipist causes, the fledgling racing industry and their enormous wealth.

Though the Homebush estate was where the Australian Jockey Club was formed in 1842, there is no known direct link to the study area.

The administration buildings were designed by Walter Liberty Vernon (1846-1914), and were some of the last buildings he designed as Government Architect. The Federation period gardens were designed by Joseph Maiden (1859-1925), Director of Sydney Botanic Gardens and Government Botanist.

As the last extant component of the State Abattoir, the is complex of buildings shows evidence of a significant human occupation.

The associational significance of the Abattoir Heritage Precinct is demonstrated by:

- *The complex of buildings*
- *Each building individually*
- *The landscape areas.*

Criteria (c) Aesthetic/Technical significance: *The Abattoir Heritage Precinct has LOCAL Heritage Significance under this criterion.*

Although its context has been dramatically altered since the development of Sydney Olympic Park, the Abattoir Heritage Precinct still has the ability to reflect the scale and importance of the State Abattoir enterprise. Designed in the Federation style, the ensemble of buildings is grouped attractively within landscaped gardens and lawns. This complex of buildings exhibit harmonious design, domestic scale, and similarity of materials, contributing to their collective value as a group.

The majority of development at Sydney Olympic Park dates from the late 20th century. Subsequently, the early twentieth century abattoir administration complex is a distinctive landmark within the Park.

The aesthetic significance of Abattoir Heritage Precinct is demonstrated by:

- *The complex of buildings in their garden setting.*

There are no particular elements that exhibit technical significance or creative achievement.

Criteria (d) Social/Cultural significance: *The Abattoir Heritage Precinct is likely to have LOCAL Heritage Significance under this criterion.*

The social significance of the Abattoir Heritage Precinct at Sydney Olympic Park has not been formally assessed through community or stakeholder consultation. As an integral part of a massive abattoir, the main supplier of meat and meat products to both local consumers and to the export trade, it may have significance to past employees. Currently, as a small scale complex of buildings within attractive landscaped grounds, it may have significance to local employees of Sydney Olympic Park.

There are no particular elements that exhibit social significance.

Criteria (e) Research potential: *The Abattoir Heritage Precinct has NO Heritage Significance under this criterion.*

The Abattoir Heritage Precinct has low historical archaeological potential. The earliest known non-indigenous occupation of the area was D'Arcy Wentworth's 1799 grant, with his house located away from this complex. There is no known development in the study area until the establishment of the State Abattoir from 1907, it has always comprised the administration precinct of the abattoir, and it appears that the complex of buildings remains largely as designed and originally constructed. Any remaining archaeological evidence associated with earlier garden configurations is unlikely to contribute substantially to our understanding of the site.

There are no particular elements that exhibit research significance.

Criteria (f) Rarity: *The Abattoir Heritage Precinct has STATE Heritage Significance under this criterion.*

At their peak in the 1920s, the State Abattoirs was one of the largest in the world, employing 1600 workers with a killing capacity of up to 20,000 sheep per day, 1500 beasts (cattle), 2000 pigs and 1300 calves. The complex of buildings and landscape is a rare intact and extant component of the State Abattoir, Homebush.

They are therefore remnant rare indicators of the use of the area for a significant enterprise, particularly the centralised control of meat slaughtering, sale and distribution in Sydney.

The rarity of the Abattoir Heritage Precinct is demonstrated by:

- *The complex of buildings reflecting the scale of the State Abattoirs.*

Criteria (g) Representativeness: *The Abattoir Heritage Precinct has LOCAL Heritage Significance under this criterion.*

The buildings of the complex are representative examples of Federation period architecture, with many elements, materials and details typical of this period. They are also representative of public buildings designed in the Government Architect's office under Walter Liberty Vernon. The garden within the complex is a good example of Federation period landscaping. The layout, plantations and tree species are representative of public gardens and parks in Sydney in the early 20th century.

The representativeness of the Abattoir Heritage Precinct is demonstrated by:

- *The complex of buildings*
- *Each building individually*
- *The landscaped gardens.*

6.1.4.2 Established statement of significance

The statement of significance for *State Abattoir* as presented in the CMP is:

The Abattoir Heritage Precinct is of State Significance as an 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. As such, the site is extremely rare. The site was also part of an early land grant to D'Arcy Wentworth in 1810, a notable figure in colonial society and politics. The Precinct became an integral part of the activities during the Sydney 2000 Olympic and Paralympic Games providing Sydney Olympic Park with an important link to the history of Homebush and the Abattoirs in particular.

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 and the construction of Sydney Olympic Park, for which the buildings were sympathetically modified and then used as an administration and information centre.

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 of the complex are representative examples of Federation period architecture, with many elements, materials and details typical of this period. They are also representative of public buildings designed in the Government Architect's office under Walter Liberty Vernon. The garden within the complex is a good example of Federation period landscaping. The layout, plantations and tree species are representative of public gardens and parks in Sydney in the early twentieth century.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.5 Millennium Parklands Heritage Precinct (SEPP (PCRC) Item No. A)³ and Explosive Stores (SEPP(PCRC) Item No. 87)

6.1.5.1 NSW heritage significance assessment criteria

The heritage significance of this area is established in the CMP (GBA 2003) in accordance with the State Environmental Planning Policy (Precincts – Central River City) 2021. While the *Explosive Stores* are listed at a separate item on the SEPP(PCRC) (Item No. 87), the CMP assesses them as part of the Millennium Parklands Heritage Precinct. The assessment of significance against the NSW criteria as presented in the CMP is below.

Criteria (a) Historical significance: *MPHP is historically significant for its preservation of evidence of Aboriginal and European occupation along the Parramatta River. It demonstrates the early occupation of lands at Homebush by Europeans, only nine years after the area was first sighted by members of the First Fleet, who remarked on the presence of Aboriginal people in the area. It was the site of an early land grant to pastoral and industrial entrepreneur John Blaxland (1769-1845) whose family were influential in the early history of the colony. The site demonstrates the importance of the Parramatta River in the opening up of the colony and the early rural settlement of areas close to Parramatta. Its historical importance as an Armament Depot lies in its demonstration of the evolution of systems and regulations of explosives handling and storage over 90 years and the role of Sydney as a major port for the Australian naval fleet. It is highly illustrative of the extent of involvement of the Royal Australian Navy and US Navy in the Second World War and the logistics support provided by Australia to her allies.*

Criteria (b) Historical association significance: *MPHP has historical associations with John Blaxland (1769-1845) who arrived as a free settler in 1806. He was a speculative and entrepreneurial man who held official posts as a magistrate and non-official member of the Legislative Council. The site has a long association with the personnel of the Royal and Royal Australian and US Navies, through its use, from 1895-1999, as the principal naval armament depot that supported fleet operations based in Sydney.*

Criteria (c) Aesthetic/Technical significance: *MPHP comprises a number of different landscape types - woodland, wetland, and an open park-like area with ornamental trees and landforms, which gives the area great visual interest, viewed from within the Parklands and from the river. The unusual patterns and formation of blast mounds, light rail and sunken roads, which cut through the landscape, provide a sense of interest and linkage. The different building types from different periods of expansion, such as Federation, Inter-war and Second World War, display interesting and picturesque details of lightning and spark prevention, safety and handling features. The working environment of the site provides a very pleasing landscape of built features interspersed by woodland and wetland, all of which provides architectural, engineering and aesthetic interest.*

Criteria (d) Social/Cultural significance: *The presence of stone artefacts provides evidence of Aboriginal occupation and use, and is likely to be of cultural significance to Aboriginal cultural and administrative organisations within whose boundaries the area lies. MPHP has great significance to the thousands of civilian naval employees and their families, who worked and sometimes lived, at the Armament Depot. The importance of the work carried out at the site and the occupational health and safety procedures that the dangerous work necessitated, is clearly illustrated by the remaining structures. The work of the Armament Depot has great social significance to the community as part of a network of sites, which provided for the general defence of Australia and her Allies during the Second World War. The nature of the work carried out at the Armament Depot has great significance to members of the community with an interest in armaments, explosive ordnance and military history.*

Criteria (e) Research potential: *The saltwater wetland area is significant as a research site that can benefit the wetland and provide a model for managing other wetlands. There are very few wetlands where the tidal regime can be similarly monitored and managed; this provides one of the best possible opportunities to understand such areas and test the outcomes of a range of management prescriptions. The woodland provides the opportunity to monitor and understand recovery processes of this ecological community and the*

³ As noted in Section 2.3.2, as this area is listed twice on the SEPP (PCRC) and one of these names coincides with the SHR item with a different heritage curtilage, this area is referred to as the Millennium Parklands Heritage Precinct to avoid confusion between the SHR item and the SEPP conservation area.

individual species within it. The soils of this area are a rare intact example that will provide information about management of soils that are generally disturbed by urban development.

MPHP displays a high degree of integrity of its structures, natural landscapes, buildings and movable heritage items. As such it has high potential for interpretation and research into technological developments in explosives handling and storage. It illustrates the development of blast containment structures and design philosophies to accommodate changing international explosives regulations. The buildings constructed for the US Navy during the Second World War are significant examples of military storehouse technology. Specific building types demonstrate the adaptation of building technology for armaments handling and storage and the specific nature of armaments work practices. The natural environment contains habitats that are increasingly rare in the area and which Harbour rare flora and fauna species that provide opportunities for scientific research. The presence of stone artefacts suggests that there may be further physical evidence present that illustrates the associations of the Aboriginal people to the place.

Criteria (f) Rarity: *The precinct includes the only remaining example in the Sydney region of a complete estuarine zonation, from Cumberland Plain Woodland through to Casuarina Closed forest, and then saltmarsh to mangroves in the intertidal zone. Almost all similar vegetation sequences have been cleared in this part of the Sydney Basin.*

*The precinct's woodland is Sydney Turpentine Ironbark Forest one of the Cumberland Plain's seventeen ecological communities. It is listed as an Endangered Ecological Community under the Threatened Species Conservation Act, 1995 and listed as vulnerable nationally under the Environment Protection and Biodiversity Conservation Act, 1999. Sydney Turpentine Ironbark Forest has been almost entirely cleared. Forty-one bird species have been recorded in the woodland, which have a high density of hollows and nesting places. A pair of White-bellied Sea-Eagles (*Haliaeetus leucogaster*) nests there; this species is listed on China Australia Migratory Birds Agreement (CAMBA). There is a breeding population of the Red-romped Parrot (*Psephotus haematonotus*), a species uncommon elsewhere in the Sydney region.*

This is the most varied and extensive wetland / lagoon complex of saltmarsh and mangrove habitat within the Upper Parramatta River system. The saltmarsh wetland habitat in this precinct is an important component of the remaining saltmarsh community in New South Wales; since European settlement, over eighty percent of the saltmarsh habitat in the Sydney region has been lost, and in the Upper Parramatta River area, there has been a loss of 92% of the original saltmarsh area.

*The precinct's saltmarsh flora has biogeographical interest. Three plant species are important: *Wilsonia backhousei*, listed as vulnerable in NSW, is present in the largest remaining stands in the Sydney region; the *Halosarcia pergranulata* population is the only known location of this species occurring on the New South Wales Coast; and *Lampranllus tegans*, known only from the Sydney region and Victorian coast, has its status in terms of natural or cultural heritage significance yet unresolved, but there is agreement that it should be conserved here.*

*The combination of saltmarsh, intertidal and freshwater wetland around Homebush Bay provides one of the few secure regional habitats for migratory waders because almost all other wetland areas on the Parramatta River are subject to extreme human disturbance pressure. Twenty bird species recorded for the wetland are listed in the Japan Australia Migratory Birds Agreement (JAMBA), and nineteen species in China Australia Migratory Birds Agreement (CAMBA). Listed species include support Black-winged Stilt (*Himantopus himantopus*), Latham's Snipe (*Gallinago hardwickii*) and Curlew Sandpiper (*Calidris ferruginea*). The Mangrove Gerygone (*Gerygone laevigaster*) is recorded here, near its southern limit of distribution. The saltmarsh community provides habitat for Sydney's largest population of White-fronted Chat (*Ephhianura albifrons*). Over 50 non-migratory bird species also use the wetland areas.*

*The endangered Green and Golden Bell Frog (*Litoria aurea*) have been recorded within the brackish pond (Wharf Pond) located between the freshwater catchment and intertidal wetland.*

The relatively unmodified habitats provide a reference and benchmark with which to compare and understand original vegetation and soils of Sydney coastal estuarine zones.

Criteria (g) Representativeness: *The woodland and wetland areas of the site demonstrate the characteristics of their respective classes of ecological community, and in each case, these communities are no longer widespread, and so they are now very significant in this respect. MPHP is a fine example of an historic former armament depot. It exhibits characteristics, which are typical of many other Australian armament depots, but is unique in the extent of its preservation of a variety of elements from the full extent of its history. An outstanding setting further enhances it and the integrity of the natural and cultural elements combined.*

6.1.5.2 Significance of precincts

6.1.5.2.1 Original establishment precinct

The original establishment precinct is significant for its historical association with the earliest European land grants on the site as well as the period of occupation by Blaxland.

It contains structures, which demonstrate the C19th occupation of the site as a powder magazine and the subsequent evolution of explosives handling, blast containment and storage technologies until the 1940s.

It contains a significant collection of Inter-War, Second World War and Federation buildings with picturesque and interpretive design elements, such as signage and operational fixtures.

The 1897 powder magazine, gatehouse and workshops have architectural and technical significance.

The landscape is a significant open area on the Parramatta River with views up and downstream and the wharf demonstrates the relationship of the site to the Harbour and naval sites downstream.

6.1.5.2.2 Early naval occupancy period

The wetland in the Early Naval Occupancy precinct is a significant landscape and ecological community, with, native species, and habitats that are now rare in the Sydney region.

The Early Naval Occupancy precinct is significant for its demonstration of the expansion of the site under the Royal Australian Navy at the beginning of the twentieth century.

It contains a number of workshops, explosives storehouses and magazines, which demonstrate the development of explosives handling, blast containment and storage technologies at a time when explosives were inherently unstable and before pre-packaged munitions.

It contains a significant collection of buildings from the Inter-War and Second World War periods with picturesque and interpretive design elements, such as signage and operational fixtures.

The integration of buildings and landscape in this precinct is significant as it demonstrates the scarcity of dry, flat land at the time and the industrial exploitation of the wetland. The remains of the 1890s fascine banks and sandstone sea wall which enclose the wetland are highly significant.

It contains a significant portion of landfilled riverfront from the nineteenth Century.

6.1.5.2.3 RAN wartime expansion precinct

The RAN Wartime Expansion precinct contains a remnant of Cumberland Plain woodland (Sydney Turpentine Ironbark Forest, an Ecological Endangered Community), which contains several stone artefacts testifying to the Aboriginal usage of the area. As evidence of Aboriginal occupation within the generally highly altered landscape of Homebush Bay, this is likely to be of some cultural significance to Aboriginal cultural and administrative organisations within whose boundaries the area lies. However, this will need to be established through further research.

The RAN Wartime Expansion precinct is significant for its demonstration of the rapid building program and expansion of the site at the beginning of the Second World War and the development of the site into a major defence facility.

It contains a significant collection of explosives storehouses from 1939-1942, which demonstrate changing explosives technology and design principles. The storehouses and a number of workshops from the 1930s, have picturesque and interpretive design elements, such as signage and operational fixtures.

The use of the woodland rises for natural blast containment and the creation of flat contours for the light rail clearly demonstrate the topographical limitations of the site at this time.

6.1.5.2.4 US Navy utilisation precinct

The US Navy Utilisation precinct is significant for its demonstration of the involvement of the United States Navy in the Pacific War, and the role of Sydney as a base for the Allies.

It contains a significant collection of underground explosives storehouses, which demonstrate US pre-fabrication, and explosives technology.

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Its use of road networks rather than light rail demonstrates the greater role of trucks during the Second World War and the use of sloping ground for storehouses, which were dug into earth berms.

Plate 6.1: Historic precincts of Millennium Parklands Heritage Precinct (GBA 2003)

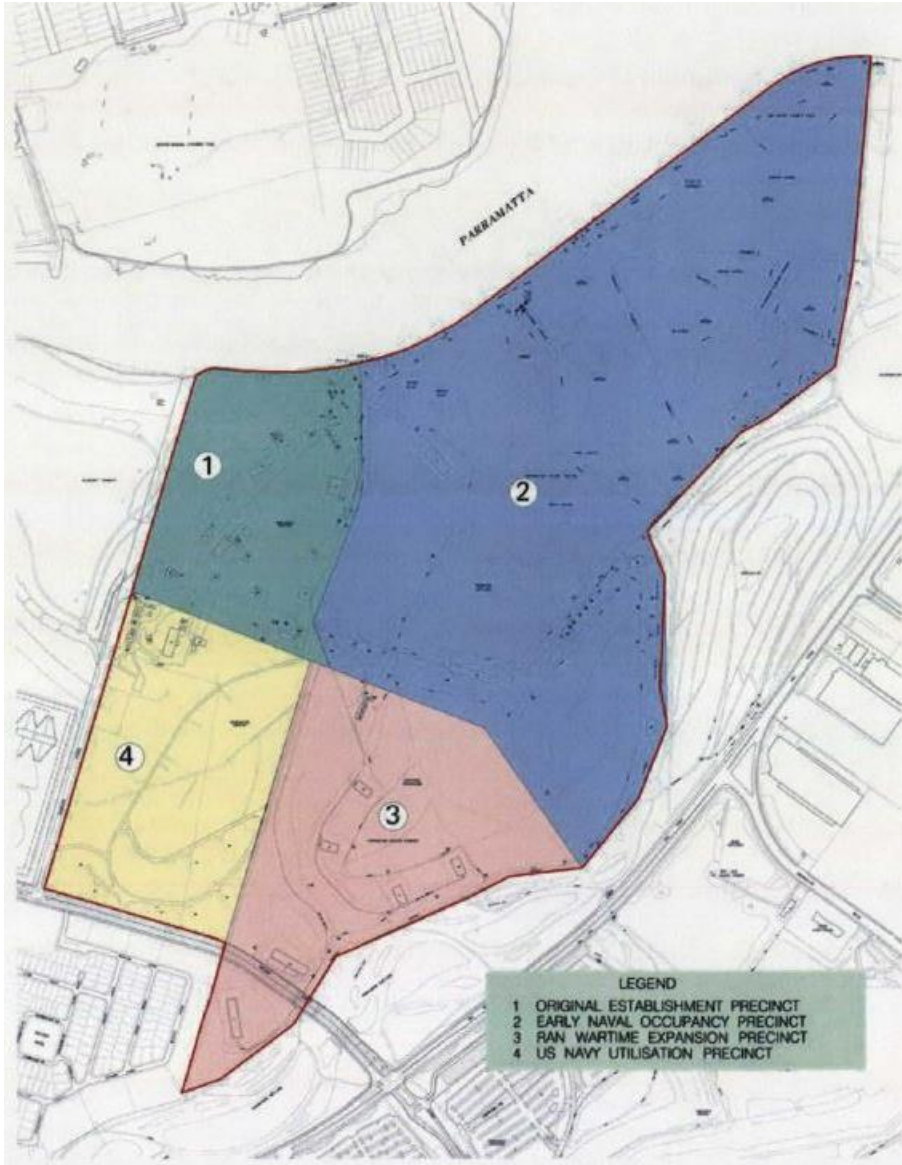


Plate 6.2: Landscape character of Millennium Parklands Heritage Precinct (GBA 2003)



6.1.5.3 Established statement of significance

The statement of significance for the *Millennium Parklands Precinct* as presented on the CMP is:

The MPHP at Newington is of State significance as a rare and extensive military/industrial landscape, with largely intact natural, Aboriginal and Historic cultural features, which clearly demonstrate the natural and cultural development of the site.

The wetland and woodland areas have high natural heritage values because they are rare remnants of ecological communities and ecosystems that once dominated this region.

Within the woodland area there is evidence of Aboriginal occupation of the site in the form of several stone artefacts, which are likely to be of historic and social significance to the Aboriginal community. This needs to be established by further research.

The Precinct contains a wide variety of functionally related blast containment structures, support buildings, transport networks, landforms and movable items associated with the storage and handling of explosive ordnance, all of which were closely integrated with the topography and other natural features of the site. It also contains significant natural landscapes, which preserve regionally rare ecological systems.

The site clearly demonstrates the combination of factors that influenced its evolution and development since the 1890s. These factors include the growth of the Royal Australian Navy, the advent of the Second World War, changing explosives technology and explosive ordnance regulations and the availability of land. This is reflected in the minimum separation distances between explosives storehouses, the evolving technology of the building stock, ribbon development through the wetland, the isolation of buildings around the woodland and the development of the light rail system.

All of the structures in combination with their operational fixtures and equipment and the way in which the natural landscapes have been utilised and modified, contribute significantly to an understanding of explosives storage and the evolution of the Armament Depot.

The Armament Depot formed part of a historically significant network of naval sites in the metropolitan area that express the strategic importance of Sydney in the Pacific region in the early decades of the twentieth century. The Armament Depot played a vital role in naval fleet operations, being the major depot for the storage of explosive ordnance, and historically linked to other magazine sites such as Goat and Spectacle Islands. MPHP still contains a rare combination of buildings and landscape features which were constructed by and for the Royal Australian Navy and US Navy, which are of National significance in demonstrating the logistics support which Australia gave to her allies during the Second World War.

The cultural landscape of MPHP includes evidence of early 19th century industrial ventures and pastoral activities of the Blaxland family.

The landscape of the river edge wetland, mangroves and woodland areas, although influenced by a century of pastoral and military utilisation, exhibit important aesthetic features, in great visual contrast to the carefully maintained grassland of the operational areas.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.6 Ermington Wharf (Parramatta LEP 2011 Item No. 182); Wharf (Ryde LEP 2014 Item No. 165); Former Pennant Hills Wharf (SEPP (BC) Item No. 40)

6.1.6.1 NSW heritage significance assessment criteria

The heritage significance of *Ermington Wharf / Wharf / Former Pennant Hills Wharf* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *The wharf remains are historically significant as evidence of a 19th century stone wharf, on the site of an early riverside wharf. The stone from the Pennant Hills Government quarry, shipped from a wharf in this location, was used for road-surfacing in Sydney from the 1850s till 1912. Timber was also shipped from a wharf in this location from convict timber industry in the early 19th century. A wharf at this location was also significant in the 19th century for shipping out local produce to Sydney, and in the late 19th century as a stopping point for the Parramatta steam ferries.*

Criteria (b) Historical association significance: *The wharf remains and site have historical association with convict timber industry in the early nineteenth century (from circa 1817), with the transport of basaltic rock from the Pennant Hills government quarry to Sydney from 1833 till 1912, with the transport of local produce to Sydney throughout the 19th century, and with the Parramatta steam ferry companies in the late 19th century. The wharf remains also have historical association with the Sydney Municipal Council, which leased the Government quarry and the wharf from the 1850s.*

Criteria (e) Research potential: *The wharf site is considered to have some archaeological research significance.*

Criteria (f) Rarity: *The remains of the stone wharf are rare along the Parramatta River.*

Criteria (g) Representativeness: *The site is representative of 19th century wharf sites along Parramatta River.*

Integrity/Intactness: *The wharf site is remains only.*

6.1.6.2 Established statement of significance

The statement of significance for the Parramatta LEP item *Ermington Wharf* as presented on the SHI is:

The Ermington Wharf is of significance for Parramatta local area for historical reasons and as a representative example of this type of structure in the 19th Century. The Wharf demonstrates the importance of the river as an early transport route. The site also possesses potential to contribute to an understanding of traditional wharf construction techniques.

The statement of significance for the Ryde LEP item *Wharf* as presented on the SHI is:

The wharf remains are historically significant as evidence of a 19th century stone wharf, on the site of an early riverside wharf. The stone from the Pennant Hills Government quarry, shipped from a wharf in this location, was used for road-surfacing in Sydney from the 1850s till 1912. Timber was also shipped from a wharf in this location from convict timber industry in the early 19th century. A wharf at this location was also significant in the 19th century for shipping out local produce to Sydney, and in the late 19th century as a stopping point for the Parramatta steam ferries. The wharf remains also have historical association with the Sydney Municipal Council, which leased the Government quarry and the wharf from the 1850s. The wharf remains are rare evidence of a 19th century stone wharf on the Parramatta River.

Historical research and review of site conditions confirms these statements are an accurate assessment of the heritage significance of this item.

6.1.7 Wetlands (Parramatta LEP Item No. I1)

6.1.7.1 NSW heritage significance assessment criteria

The heritage significance of *Wetlands* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (g) Representativeness: *This item is representative.*

6.1.7.2 Established statement of significance

The statement of significance for the LEP item *Wetlands* as presented on the SHI is:

The wetlands along Parramatta River are of significance for the Parramatta area as remnant representative areas of mangroves and salt marshes which once extensively lined the foreshores and tidal water flats of the region.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.8 Pumping Station (Parramatta LEP Item No. I5)

6.1.8.1 NSW heritage significance assessment criteria

The heritage significance of *Pumping Station* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

6.1.8.2 Established statement of significance

The statement of significance for the LEP item *Pumping Station* as presented on the SHI is:

Amenities & services - regional or local. This site also makes a notable contribution to the townscape.

Historical research confirms this is an accurate assessment of the heritage significance of this item.

6.1.9 Tram Alignment (Parramatta LEP Item No. I6)

6.1.9.1 NSW heritage significance assessment criteria

The heritage significance of *Tram alignment* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (g) Representativeness: *This item is representative.*

6.1.9.2 Established statement of significance

The statement of significance for the LEP item *Tram alignment* as presented on the SHI is:

The wide street alignment (tram alignment) is demonstrative of the former tramway line, an important private development associated with the river's use as a corridor and physical evidence remains in the alignment of Grand Avenue and in the remaining tracks along the eastern end of this road.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.10 Rose Farm House (Parramatta LEP Item No. I63)

6.1.10.1 NSW heritage significance assessment criteria

The heritage significance of *Rose Farm House* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (e) Research potential: *This item is technically or scientifically significant.*

Criteria (r) Rarity: *The item is rare.*

Criteria (g) Representativeness: *This item is representative.*

6.1.10.2 Established statement of significance

The statement of significance for the LEP item *Rose Farm House* as presented on the SHI is:

Rose Farm House is of significance for the local area for historical reasons and as a representative example of early (1820s) Colonial Georgian style cottages in the area, and a rare surviving example of the development further to the original grants. The historic property has the potential to reveal further information on the history of the wider area. Few of the houses erected along the river by the original grantees now remain and this is both a good example of a Georgian cottage and an important remnant from the early years of European settlement in the area. The property demonstrates the importance of the river as an early transport route and the site grounds possess archaeological potential to contribute to an understanding of eighteenth and nineteenth century farming settlement.

Historical research confirms this is an accurate assessment of the heritage significance of this item.

6.1.11 Bulla Cream Dairy (Willowmere) (Parramatta LEP Item No. I64)

6.1.11.1 NSW heritage significance assessment criteria

The heritage significance of *Bulla Cream Dairy* (also known as Willowmere) is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *The property Willowmere, 64 Hughes Avenue, Ermington constructed in c1924, is of historical significance on a Local level, for being built and resided in by the Swane family for a*

period over 40 years. The subject property was the domestic centre of the Swane families' horticultural and commercial operations and the garden and former paddock (western half of the allotment) were both used at one time for the propagation of plants sold at the adjacent nursery, Swane Bros. Enterprise Nursery on Hope Street. The original house, garage and laundry (albeit altered) and the early addition billiards room, all built for Ted (Edgar Norman) Swane, survive together with a garden that contains plantings associated with the establishment period of the house. The Phoenix *canariensis* Canary Island date palms located along its southern boundary are of historical value for their association with the period the Swane family lived at the property, when they owned and managed their Ermington nurseries.

The place is also of historical significance for forming part of the Marsden Estate lands in Ermington, granted to Rev. Samuel Marsden in c1796. The allotment of land that holds No. 64 Hughes Avenue remained in the hands of Marsden's descendants for a period of 124 years, via his daughter, grand-daughter and grand-son, until the property was sold to the Swane family in 1920.

This historic link connects the place to an important period in the early settlement of New South Wales and decisions by Governor Arthur Phillip based on the agricultural capabilities of the northern riverbanks of Parramatta River which were identified soon after establishment of Parramatta in 1788. Cultivation of these riverbanks by grants initiated a period of agriculture which was to continue up until the 1960s, as found at the subject property.

The place meets the criteria for historical significance on a Local level.

The place is of historical associational significance on a Local level, for being associated with the origins of the Swane Brother's Enterprise Nursery, a successful Sydney-based plant nursery owned and operated by a significant horticultural family until 2000. The nursery operated from adjacent lands from c1919 to c1967 and the subject property at 64 Hughes Avenue was the domestic centre of its horticultural and commercial operations.

Criteria (b) Historical association significance: The place is associated with significant Swane family members including:

- Ted (Edgar Norman) Swane who initiated the business with his brother Tim (Harold), acknowledged for raising standards in the nursery industry and was a founder, and president of the Nursery Association both state and federally;
- Ben Swane, who "raised" the Swane's Golden Cypress Pencil Pine, a popular domestic garden plant in the 20th century, is a founding and life member of the International Plant Propagators' Society in Australia and made valuable contributions as a member of an industry committee to achieve breeders rights for plants which resulted in the Plant Variety Rights Act 1987;
- Geoff Swane who made significant contributions to rose breeding in Australia and internationally;
- Elwyn Swane, a significant contributor to the horticultural industry with her writings; and
- Valerie Swane, who was an extremely influential horticulturalist, the first woman President of the NSW Association of Nurserymen, she made significant contribution to Greening Australia as the first chair of its committee and was influential as the chair of the national committee of the National Tree Program. She received an OBE for her contribution to horticulture in Australia and was the first recipient of the Waratah Award, a special award given by the Nursery Association. Valerie made significant contributions to education and training in the horticultural industry and through her lecturing on plants at the University of New South Wales in early to mid-1970s, the forerunner to the School of Landscape Architecture's bachelor's degree she impacted generations of landscape architects.

All these members lived at 64 Hughes Avenue, during the formation years of the nursery and called it 'home'.

Through the Swane family, the place is also associated with Edgar Henry Swane, the father of Edgar Norman, a long-time resident of the Ermington area, former town clerk for the Municipality of Ermington and Rydalmere and former Mayor of Ermington & Rydalmere (1900-1902). Swane Street, Ermington is named for Edgar Henry Swane.

The place is also associated with the Rev. Samuel Marsden and his descendants who held the land from c1796 through to 1920, a period of 124 years.

The property also has some associations with the family run company Bulla Cream Dairy, a Victorian based company that has operated since 1910; although this association only dates from the late 1960s.

The place meets the criteria for historical associational significance on a Local level.

Criteria (c) Aesthetic/Technical significance: *The place is of aesthetic significance on a Local level as a largely intact, Californian Bungalow style residence. Occupying a corner allotment, the bungalow has been designed to be viewed from both street frontage and is a good example of its kind. Typical of the style, the house is of dark face brick, tuck pointed to its north and east elevations, with a Marseilles tile roof and retains the majority of its original detailing including pine floors, decorative fibrous plaster ceilings and joinery (doors, windows, architraves and skirtings).*

Located in a mature domestic garden, the green mass of trees within the front garden of the 1920s bungalow, collectively form the most recognisable feature of the place from the streetscape and the Canary Island Phoenix palms make a strong visual contribution to the wider landscape of the area and clearly identify the location of the former home of the Swane family.

The place meets the criteria for aesthetic significance on a Local level.

Criteria (d) Social/Cultural significance: *The subject property has no known associations with a particular community or cultural group in the local area.*

The place does not meet the criteria for social significance on a Local level.

Criteria (e) Research potential: *As the allotment was first developed in the 20th century, following subdivision in the 1890s from the Marsden Estate and the estate lands were (assumed) used for cultivation and agricultural, it is considered unlikely that the place has the potential to yield further information relating to its early historic development.*

The place does not meet the criteria for research potential on a Local level.

Criteria (f) Rarity: *Given the known associations with the Swane family and links to the long-running Swane Bros. Enterprise Nursery, the place is considered to be a rare remnant of an important phase of history in the local area. Although the Ermington locality was once dominated by orchards, plant nurseries and fruit growers from the mid 19th century through to the mid 20th century, little physical evidence remains of this historical period of development and 64 Hughes Avenue is one of only a small number of places in the locality known to survive with direct links to this era.*

The weatherboard billiards room is a rare surviving early component of the place; once a much sought-after feature of the 1920s home that today rarely survives without later conversion.

The item is also a potentially rare vestige of the long-term continuous use of the area for agricultural pursuits from 1791, when the area was first farmed at Vineyard (Rydalmere), Field of Mars in 1792 (Dundas Valley, Ermington and Melrose Park) and Eastern Boundary 1792 (Ermington and Melrose Park), up to the 1890s - 1960s when the soils of Ermington and Rydalmere were utilised extensively for orchards, poultry farms, dairies and nurseries.

The place meets the criteria for rarity on a Local level.

Criteria (g) Representativeness: *Willowmere, 64 Hughes Avenue is a good, largely intact example of a Californian Bungalow style dwelling and is representative of an Inter War Californian Bungalow style residence of a type found throughout the local area (although built to be seen in the round and with a somewhat unusual configuration). The place is representative of the progressive subdivision of the agricultural/cultivated lands for suburban residential uses that dominated the suburb of Ermington and surrounds during the latter half of the 19th century into the early 20th century.*

The surviving house is a representative example of a suburban Californian Bungalow style residence, the dominant style of residence constructed throughout the suburbs of Sydney in the early 20th century, following the subdivision of the large estate lands in the late 19th century.

The subsequent development of the western half of the allotment (former horse paddock) for the Bulla Cream Dairy factory is also representative of the dramatic change in land use that occurred as a result of the introduction of the County of Cumberland Planning Scheme along the Parramatta River in the suburb of Ermington and Rydalmere and beyond, transforming the land from orchards and plant nurseries to industrial land uses.

The Bulla Cream Dairy factory building is representative of a small scale, late 20th century factory building and of little significance.

The place meets the criteria for representational significance on a Local level.

Integrity/Intactness: *The integrity of the eastern portion of the allotment of 64 Hughes Avenue, Ermington is highly intact to its 1920s configuration although with some minor later alterations to the main house and historical changes to the main garden, although evidence remains of its original/early configuration. The billiards room remains relatively intact, although in poor condition, while the original garage and laundry buildings have been substantially altered and have somewhat lost their integrity. The western portion of the allotment is highly intact to its late 1960s configuration.*

6.1.11.2 Established statement of significance

The statement of significance for the LEP item *Bulla Cream Dairy* (Willowmere) as presented on the SHI is:

The property Willowmere, 64 Hughes Avenue, Ermington constructed in c1924, is of historical significance on a Local level, for being built and resided in by the Swane family for a period over 40 years. The house and garden were the domestic centre of the Swane families’ horticultural and commercial operations and the garden and former paddock (western half of the allotment) were both used at one time for the propagation of plants sold at the adjacent nursery, Swane Bros. Enterprise Nursery on Hope Street. The original house, garage and laundry (albeit altered) and the early addition billiards room, all built for Ted (Edgar Norman) Swane, survive together with a garden that contains plantings associated with the establishment period of the house. The Phoenix canariensis Canary Island date palms located along its southern boundary are of historical value for their association with the period the Swane family lived at the property.

As the Swane family home, the place is associated with notable members of the Swane family including Ben Swane, who “raised” the Swane’s Golden Cypress Pencil Pine, a popular domestic garden plant in the late 20th century and a founding and life member of the International Plant Propagators’ Society in Australia; and with Valerie Swane, who was an extremely influential horticulturalist and the first woman President of the NSW Association of Nurserymen.

Although a representative example of a suburban Californian Bungalow style residence, the house is of some significance for being largely intact and unusual in configuration, designed to be viewed from two street frontages. The weatherboard billiards room is also of significance as a rare, surviving early structure. The place also contains three historically significant Canary Island Phoenix palms that date to the establishment period of the 1920s and make a strong visual contribution in the broader landscape, clearly identifying the location of the Swane’s family home.

The place is one of a very small number of properties surviving in the local area known to be associated with the historically significant period of development that occurred from the mid 19th to mid 20th century in Ermington, when the area was dominated by orchards, plant nurseries and fruit growers, making No. 64 Hughes Avenue rare on a Local level.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.11.3 Grading of significance

Individual components of the heritage item were assessed during an *Assessment of Cultural Significance* (LSJP, 2018) conducted on *Bulla Cream Dairy* (Willowmere) on behalf of City of Parramatta Council. This assessment has been presented below in Table 6.1.

Table 6.1: Grades of significance for principal components of *Bulla Cream Dairy* (Willowmere, 64 Hughes Avenue)

Grade	Justification	Principal component
Exceptional	Rare or outstanding element directly contributing to an item’s local and State significance.	Nil
High	High degree of original fabric. Demonstrates key element of the item’s significance. Alterations do not detract from significance.	<ul style="list-style-type: none"> main house (c1924) including overall form and all original and early features internally and externally: the Marseilles tile roof with timber boarded gables, steel framed French doors and windows to the north and south elevations, pine flooring throughout, original internal joinery and decorative fibrous cement ceilings.

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

Grade	Justification	Principal component
		<ul style="list-style-type: none"> • Billiards Room- Outbuilding 4 (early addition) • allotment boundaries of Lot 1 DP 128594 • residential use of the eastern portion of the allotment • alignment of the driveway • southern boundary garden bed with three Canary Island date palms (<i>Phoenix canariensis</i>) Oleander (<i>Nerium oleander</i>) and Crepe Myrtle (<i>Lagerstroemia indica</i>).
Moderate	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	<ul style="list-style-type: none"> • later fitouts to kitchen and bathroom to main house • later alterations to Main house including mid-century fireplaces • contributory plant species: <ul style="list-style-type: none"> – <i>Xylosma senticososa</i> (Shiny Xylosma) – <i>Ficus benjamina</i> (Weeping fig) – <i>Phoenix roebelinii</i> (Miniature date palm) – <i>Jacaranda mimosifolia</i> (Jacaranda) – <i>Melaleuca decora</i> (White Feather Honeymyrtle).
Little	Alterations detract from significance. Difficult to interpret.	<ul style="list-style-type: none"> • Bulla Cream Dairy (Willowmere) factory building with associated car parking and landscape features • light industrial use of the western portion of the allotment • Former Garage- Outbuilding 5 (original-substantially altered) • Former Laundry- Outbuilding 6 (original-substantially altered) • Cubby house- Outbuilding 7 (late 20th century) • wire mesh fencing along southern boundary.
Intrusive	Damaging to the item’s heritage significance	<ul style="list-style-type: none"> • high timber paling fence to north and east boundary • concrete patio with flat roofed awning (late 20th century) • rear (west) skillion with laundry (late 20th century).

Plate 6.3: Aerial view of Bulla Cream Dairy (Willowmere) showing aspects of significance across the allotment (reproduced from LSJP 2018)



Plate 6.4: Layout plan of the buildings within the eastern portion of the allotment at 64 Hughes Avenue, Ermington showing indicative grades of significance for the individual structures (reproduced from LSJP 2018)

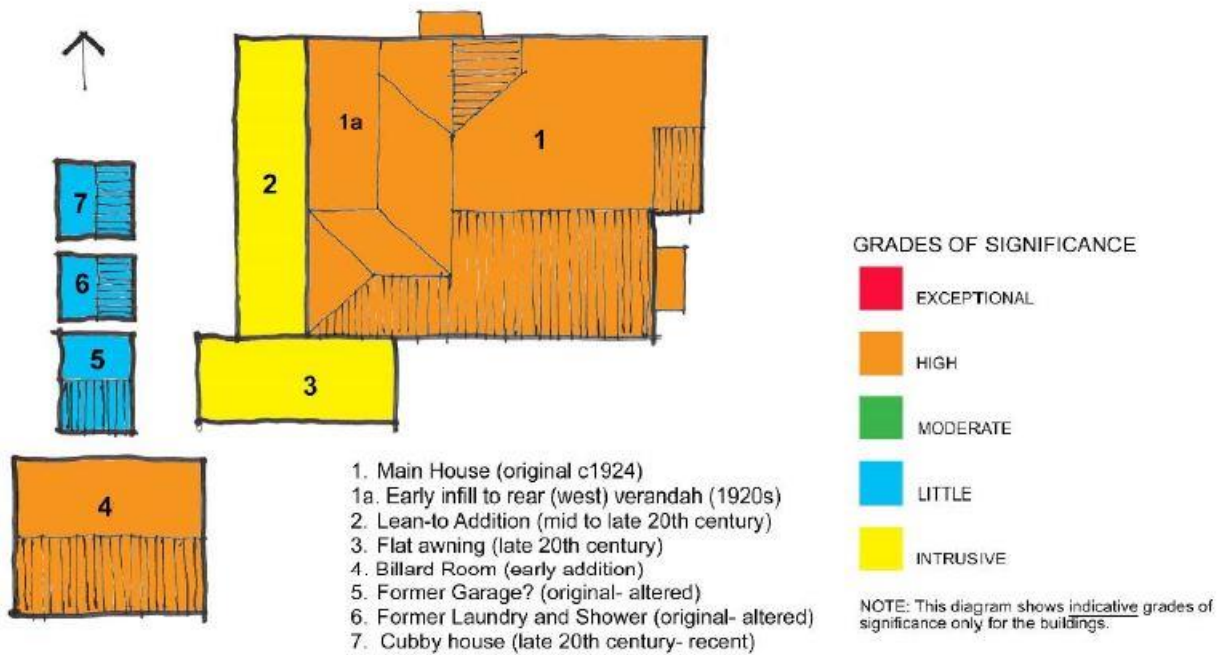


Plate 6.5: Floor plan of the Main House at 64 Hughes Avenue, Ermington showing indicative grades of significance for internal spaces, noting individual components within these spaces may be of higher or lower significance (reproduced from LSJP 2018)

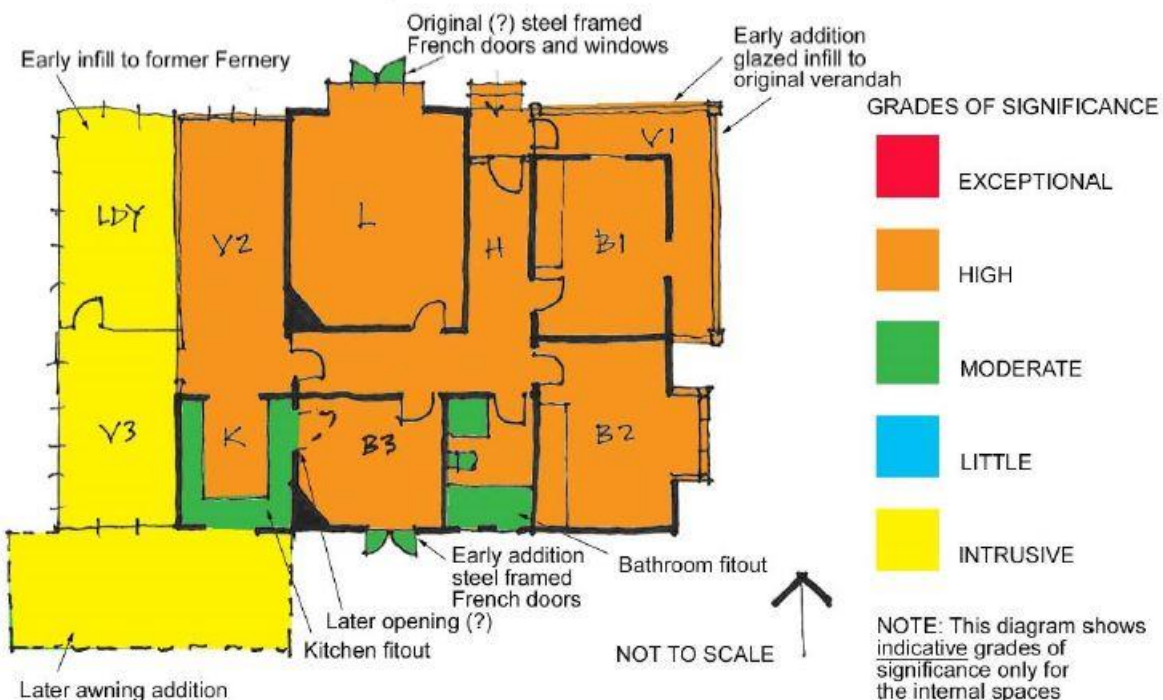


Plate 6.6: Aerial view of *Bulla Cream Dairy (Willowmere)* showing location of significant (high significance) and contributory (moderate significance) plant species (reproduced from LSJP 2018)



Significant species (circled in orange)

- 1 *Phoenix canariensis*
(Canary Island Date Palm)
- 2 *Phoenix canariensis*
- 3 *Phoenix canariensis*

Contributory species (circled in blue)

- 4 *Xylomsma senticososa*
(Shiny Xylosma)
- 5 *Ficus benjamina*
(Weeping Fig)
- 6 *Phoenix roebelinii*
(Miniature Date Palm)
- 7 *Jacaranda mimosifolia*
(Jacaranda)
- 8 *Melaleuca decora*
(White Feature Honeymyrtle)

6.1.12 Parramatta Town Hall (and potential archaeological site) (Parramatta LEP Item No. I650)

6.1.12.1 NSW heritage significance assessment criteria

The heritage significance of *Parramatta Town Hall* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (f) Rarity: *This item is rare.*

Criteria (g) Representativeness: *This item is representative.*

6.1.12.2 Established statement of significance

The statement of significance for the LEP item *Parramatta Town Hall (and potential archaeological site)* as presented on the SHI is:

Parramatta Town Hall is of significance for the local area for historical and aesthetic reasons, as a representative (locally unique) example of its type, and as a major local landmark. The building provides evidence of local Parramatta initiatives separate from Sydney and evidence of role of local government. Site possesses the potential to contribute to an understanding of early urban development in Parramatta.

6.1.13 Bicentennial Square and adjoining buildings (Parramatta LEP Item No. I651)

6.1.13.1 NSW heritage significance assessment criteria

The heritage significance of *Bicentennial Square and adjoining buildings* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (f) Rarity: *This item is rare.*

6.1.13.2 Established statement of significance

The statement of significance for the LEP item *Bicentennial Square and adjoining buildings* as presented on the SHI is:

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.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.14 Murrays' Building (and potential archaeological site) (Parramatta LEP Item No. I652)

6.1.14.1 NSW heritage significance assessment criteria

The heritage significance of *Murrays' Building (and potential archaeological site)* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

6.1.14.2 Established statement of significance

The statement of significance for the LEP item *Murrays' Building (and potential archaeological site)* as presented on the SHI is:

Association with notable events or people - Building or work associated with notable people. Namely the major department store of Murray Bros. Site possesses potential to contribute to an understanding early urban development in Parramatta. An important element of the buildings around Bicentennial Square, at the heart of Parramatta. National Trust (Parramatta Branch): Site has potential to contribute to an understanding of early urban development. - Association with notable people or events- Building or work associated with notable local people. Namely the major department store of Murray Bros. - An important element of the buildings around Bicentennial Square, at the heart of Parramatta.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.15 Warden's cottage (verger's cottage) (Parramatta LEP Item No. I653)

6.1.15.1 NSW heritage significance assessment criteria

The heritage significance of *Murrays' Building (and potential archaeological site)* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (g) Representative: *This item is representative.*

6.1.15.2 Established statement of significance

The statement of significance for the LEP item *Warden's cottage (verger's cottage)* as presented on the SHI is:

Professional, trade and manufacturing practice - example of an intact house.

6.1.16 Centennial Memorial Clock (Parramatta LEP Item No. I654)

6.1.16.1 NSW heritage significance assessment criteria

The heritage significance of *Centennial Memorial Clock* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

6.1.16.2 Established statement of significance

The statement of significance for the LEP item *Centennial Memorial Clock* as presented on the SHI is:

Association with notable events or people - Monuments. National Trust (Parramatta Branch): Association with notable people or events- monuments.

6.1.17 Shop (and potential archaeological site) (Parramatta LEP Item No. I655)

The heritage significance of *Shop (and potential archaeological site)* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (g) Representativeness: *This item is representative.*

6.1.17.1 Established statement of significance

The statement of significance for the LEP item *Shop (and potential archaeological site)* as presented on the SHI is:

Building at 197 Church Street is of significance for Parramatta area for historical and aesthetic reasons and as a representative example of Inter-War period Stripped Classical architectural style building 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.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.18 Horse parapet façade and potential archaeological site (Parramatta LEP Item No. I656)

The heritage significance of *Horse parapet façade and potential archaeological site* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (g) Representativeness: *This item is representative.*

6.1.18.1 Established statement of significance

The statement of significance for the LEP item *Horse parapet façade and potential archaeological site* as presented on the SHI is:

The group collectively known as "Horse parapeted shops" is of significance for the Parramatta area for historical and aesthetic reasons and as representative example of Victorian Italianate shops in the area. Built c. 1881, it makes a major contribution to the streetscape and presents a landmark in the centre of Parramatta. This group of commercial buildings 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.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.19 Telstra House (former post office) (and potential archaeological site) (Parramatta LEP Item No. I657)

The heritage significance of *Telstra House (former post office) (and potential archaeological site)* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (g) Representativeness: *This item is representative.*

6.1.19.1 Established statement of significance

The statement of significance for the LEP item *Telstra House (former post office) (and potential archaeological site)* as presented on the SHI is:

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 a post office in the area. Built c. 1880, it makes a major contribution to the streetscape and it is an example of the work of notable architect James Barnett.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.20 HMV (former Commonwealth Bank) (and potential archaeological site) (Parramatta LEP Item No. I658)

The heritage significance of *Telstra House (former post office) (and potential archaeological site)* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (g) Representativeness: *This item is representative.*

6.1.20.1 Established statement of significance

The statement of significance for the LEP item *Telstra House (former post office) (and potential archaeological site)* as presented on the SHI is:

Building at 215-217 Church Street, built c. 1927, is of significance for Parramatta area for historical and aesthetical reasons and as a representative example of Inter-War 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.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.1.21 St John's Parish Hall (Parramatta LEP Item No. I713)

The heritage significance of *St John's Parish Hall* is established on the SHI to be of Local significance. The assessment of significance against the NSW criteria as presented on the SHI is below.

Criteria (a) Historical significance: *This item is historically significant.*

Criteria (b) Historical Association Significance: *This item has a significant level of association.*

Criteria (c) Aesthetic/Technical significance: *This item is aesthetically significant.*

Criteria (d) Social/cultural significance: *This item is socially significant.*

Criteria (f)Rarity: *This item is rare.*

Criteria (g) Representativeness: *This item is representative.*

6.1.21.1 Established statement of significance

The statement of significance for the LEP item *St John's Parish Hall* as presented on the SHI is:

St John's Church Hall is of significance for the local area for historical and aesthetic reasons and as a representative example of a 20th Century church hall in the area, also as a rare example of this age and architectural quality in the local area. The hall makes a major contribution to the Parramatta townscape in unison with the associated church building. The site possesses potential to further

contribute to an understanding of early urban development in Parramatta. The item is a related place to the adjoining St John's Church which is separately listed in the LEP.

Historical research and review of site conditions confirms this is an accurate assessment of the heritage significance of this item.

6.2 Assessment of significance of potential heritage items

Preliminary heritage assessments of each potential heritage item have been provided to determine whether they are likely to meet the criteria for heritage listing. If, through the next stages of design or construction, the project is likely to result in a direct impact to any of the potential heritage items, a full heritage assessment of that item would be required to confirm the significance against all criteria.

6.2.1 House at 46 John Street, Rydalmere

6.2.1.1 NSW heritage significance assessment criteria

Criteria (a) Historical significance: The house is of historical significance at a local level for its association with the late nineteenth and early twentieth century subdivision and subsequent residential development of the Rydalmere area. It is one of the first houses constructed during this period in Rydalmere.

The item meets the criteria for historical significance on a Local level.

Criterion (b) Associative significance: Preliminary research does not indicate the house to be associated with a significant event, person, or group of persons.

The item does not meet the criteria for associative significance on a Local level.

Criteria (c) Aesthetic/Technical significance: The house appears to be a largely intact example of a Bungalow style residence. The house is aesthetically significant at a local level as one of few Bungalow style houses in Rydalmere, a neighbourhood typically characterised by post-war houses. Its mature plantings and period fence add to its setting.

The item meets the criteria for aesthetic significance on a Local level.

Criteria (d) Social significance: Preliminary research does not indicate any special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.

The item does not meet the criteria for social significance on a Local level.

Criterion (e) Research potential: As the allotment was first developed in the twentieth century, following subdivision in the late nineteenth to early twentieth century, and the lands were previously used for cultivation and agriculture, it is considered unlikely that the item has the potential to yield further information relating to its early historic development.

The item does not meet the criteria for research potential on a Local level.

Criteria (f) Rarity: The house is rare on a local level as it is one of a very small number of Bungalow houses constructed in the Rydalmere area still surviving and known to be associated with the 1920s Fairmount Estate residential subdivision of the area. The item meets the criteria for rarity on a Local level.

Criteria (g) Representativeness: The house is a representative example of a suburban Inter War Bungalow style residence, the dominant style of residence constructed throughout the suburbs of Sydney in the early 20th century, following the residential subdivision of the large estate lands.

The item meets the criteria for representativeness on a Local level.

6.2.1.2 Preliminary statement of significance

The house at 46 John Street, Rydalmere is of local significance. It is of historical significance as one of the first houses constructed in association with the late nineteenth and early twentieth century subdivision and subsequent residential development of the Rydalmere area. It is also both rare and aesthetically significant for its architectural style in Rydalmere and surrounds.

6.2.2 House at 69 South Street, Rydalmere

6.2.2.1 NSW heritage significance assessment criteria

Criteria (a) Historical significance: The house is of historical significance at a local level as one of the first houses constructed in association with the early twentieth century residential development of the Rydalmere area.

The item meets the criteria for historical significance on a Local level.

Criterion (b) Associative significance: Preliminary research does not indicate the house to be associated with a significant event, person, or group of persons.

The item does not meet the criteria for associative significance on a Local level.

Criteria (c) Aesthetic/Technical significance: The house appears to be a fine, largely intact, example of a Californian Bungalow style residence. The house is aesthetically significant at a local level as one of few Californian Bungalow style dwelling in Rydalmere. Its placement beside 71 South Street, another largely intact Californian Bungalow style residence, provides a prominent Californian Bungalow streetscape in a neighbourhood typically characterised by post-war houses.

The item meets the criteria for aesthetic significance on a Local level.

Criteria (d) Social significance: Preliminary research does not indicate any special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.

The item does not meet the criteria for social significance on a Local level.

Criterion (e) Research potential: As the allotment was first developed in the twentieth century, following subdivision in the late nineteenth to early twentieth century, and the lands were previously used for cultivation and agriculture, it is considered unlikely that the item has the potential to yield further information relating to its early historic development.

The item does not meet the criteria for research potential on a Local level.

Criteria (f) Rarity: The house is rare on a local level as it is one of a very small number of Bungalow houses constructed in the Rydalmere area still surviving and known to be associated with the 1920s Fairmount Estate residential subdivision of the area. The house, together with 71 South Street, creates a rare streetscape of two Californian Bungalow houses in a neighbourhood typically characterised by later, post-war houses.

The item meets the criteria for rarity on a Local level.

Criteria (g) Representativeness: 69 South Street is a good, seemingly intact example of a Californian Bungalow style dwelling and is representative of an Inter War Californian Bungalow style residence of a type found throughout the local area. The item is representative of the progressive subdivision of the agricultural lands for suburban residential uses that dominated the suburb of Rydalmere and surrounds during the late nineteenth and early twentieth centuries.

The item meets the criteria for representativeness on a Local level.

6.2.2.2 Preliminary statement of significance

The house at 69 South Street is of local significance. It is of historical significance as one of the first houses constructed in association with the residential development of the Rydalmere area. It is a fine example of a Californian Bungalow, and together with 71 South Street, creates a rare streetscape within in Rydalmere as a group of two Californian Bungalow houses in a neighbourhood typically characterised by later, post-war houses.

6.2.3 House at 71 South Street, Rydalmere

Criteria (a) Historical significance: The house is of historical significance at a local level as one of the first houses constructed in association with the early twentieth century the residential development of the Rydalmere area.

The item meets the criteria for historical significance on a Local level.

Criterion (b) Associative significance: Preliminary research does not indicate the house to be associated with a significant event, person, or group of persons.

The item does not meet the criteria for associative significance on a Local level.

Criteria (c) Aesthetic/Technical significance: The house appears to be a fine, largely intact, example of a Californian Bungalow style residence. The house is aesthetically significant at a local level as one of few Californian Bungalow style dwellings in Rydalmere. Its placement beside 69 South Street, another largely intact Californian Bungalow style residence, provides a prominent Californian Bungalow streetscape in a neighbourhood typically characterised by post-war houses.

The item meets the criteria for aesthetic significance on a Local level.

Criteria (d) Social significance: Preliminary research does not indicate any special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.

The item does not meet the criteria for social significance on a Local level.

Criterion (e) Research potential: As the allotment was first developed in the twentieth century, following subdivision in the late nineteenth to early twentieth century, and the lands were previously used for cultivation and agriculture, it is considered unlikely that the item has the potential to yield further information relating to its early historic development.

The item does not meet the criteria for research potential on a Local level.

Criteria (f) Rarity: The house is rare on a local level as it is one of a very small number of Bungalow houses constructed in the Rydalmere area still surviving and known to be associated with the 1920s Fairmount Estate residential subdivision of the area. The house, together with 69 South Street, creates a rare streetscape of two Californian Bungalow houses in a neighbourhood typically characterised by later, post-war houses.

The item meets the criteria for rarity on a Local level.

Criteria (g) Representativeness: 71 South Street is a good, seemingly intact example of a Californian Bungalow style dwelling and is representative of an Inter War Californian Bungalow style residence of a type found throughout the local area. The item is representative of the progressive subdivision of the agricultural lands for suburban residential uses that dominated the suburb of Rydalmere and surrounds during the late nineteenth and early twentieth centuries.

The item meets the criteria for representativeness on a Local level.

6.2.3.1 Preliminary statement of significance

The house at 71 South Street is of local significance. It is of historical significance as one of the first houses constructed in association with the residential development of the Rydalmere area. It is a fine example of a Californian Bungalow, and together with 69 South Street, creates a rare streetscape within in Rydalmere as a group of two Californian Bungalow houses in a neighbourhood typically characterised by later, post-war houses.

6.2.4 House at 67 Boronia Street, Ermington

Criteria (a) Historical significance: The house is of historical significance at a local level for its association with the late nineteenth and early twentieth century subdivision and subsequent residential development of Ermington. It is one of the first houses constructed during this period in Ermington.

The item meets the criteria for historical significance on a Local level.

Criterion (b) Associative significance: Preliminary research does not indicate the house to be associated with a significant event, person, or group of persons.

The item does not meet the criteria for associative significance on a Local level.

Criteria (c) Aesthetic/Technical significance: The house appears to be a fairly intact example of a Bungalow style residence. The house is aesthetically significant at a local level as it is one of few Bungalow houses constructed in the Ermington area.

The item meets the criteria for aesthetic significance on a Local level.

Criteria (d) Social significance: Preliminary research does not indicate any special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.

The item does not meet the criteria for social significance on a Local level.

Criterion (e) Research potential: As the allotment was first developed in the twentieth century and the lands were previously used for cultivation and agriculture, it is considered unlikely that the item has the potential to yield further information relating to its early historic development.

The item does not meet the criteria for research potential on a Local level.

Criteria (f) Rarity: The house is rare on a local level as it is one of a very small number of Bungalow houses constructed in the Ermington area still surviving and known to be associated with the Ermington Riverview Estate residential subdivision of the area

The item meets the criteria for rarity on a Local level.

Criteria (g) Representativeness: The house is a representative example of a suburban Inter War Bungalow style residence, the dominant style of residence constructed throughout the suburbs of Sydney in the early 20th century, following the residential subdivision of the large estate lands.

The item meets the criteria for representativeness on a Local level.

6.2.4.1 Preliminary statement of significance

The house at 67 Boronia Street, Ermington is of local significance. It is of historical significance as one of the first houses constructed in association with the early twentieth century subdivision and subsequent residential development of Ermington. It is also both rare and aesthetically significant for its architectural style in Ermington and surrounds.

6.2.5 House at 151 Wharf Road, Ermington

Criteria (a) Historical significance: Historical research indicates that while the house has been constructed in the Edwardian style, it is contemporary with its surroundings and was likely constructed in the late 1940s after much of the surrounding neighbourhood lots had been built on.

The item does not meet the criteria for historical significance on a Local level.

Criterion (b) Associative significance: Preliminary research does not indicate the house to be associated with a significant event, person, or group of persons.

The item does not meet the criteria for associative significance on a Local level.

Criteria (c) Aesthetic/Technical significance: The house is not aesthetically or technically significant as it imitates an earlier period style.

The item does not meet the criteria for aesthetic/technical significance on a Local level.

Criteria (d) Social significance: Preliminary research does not indicate any special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.

The item does not meet the criteria for social significance on a Local level.

Criterion (e) Research potential: The house is not of historical significance, therefore it has no research potential.

The item does not meet the criteria for research potential on a Local level.

Criteria (f) Rarity: The house is unique in its landscape as it imitates an earlier period of home not found within the surrounding streets or wider suburb of Ermington. However, it is not an actual Edwardian house, removing the possibility for it to be a rare remnant of an earlier period of residential occupation in Ermington or the wider LGA.

The item does not meet the criteria for rarity on a Local level.

Criteria (g) Representativeness: The house imitates an earlier period style and is not representative of the period in which it was constructed.

The item does not meet the criteria for representativeness on a Local level.

6.2.5.1 Preliminary statement of significance

The house at 151 Wharf Road, Ermington does not meet the NSW assessment criteria for heritage significance. The house is not a potential heritage item.

7 HERITAGE IMPACT ASSESSMENT

This section assesses the impact of the project on items of heritage significance located in, or in the immediate vicinity of, the project site. The level of impact is assessed in accordance with the definitions in Table 7.1 as defined in the *Material Threshold Policy* (Heritage NSW, February 2020). While this policy is geared towards State significance, the definitions and levels of impact are directly transferable to other levels of significance. Therefore, the following impact assessment considers the impact against the significance of an item.

Table 7.1: Defining levels of impact

Impact	Definition
Total loss of significance	Major adverse impacts to the extent where the place would no longer meet the criteria for listing on the SHR.
Adverse impact	Major (that is, more than minor or moderate) adverse impacts to State heritage significance. Moderate adverse impacts to State heritage significance Minor adverse impacts to State heritage significance
Little to no impact*	An alteration to State heritage significance that is so minor that it is considered negligible. * Little to no impact (as opposed to no impact) acknowledges that any change will result in some level of impact/alteration to State heritage significance.
Positive impact	Alterations that enhance the ability to demonstrate the State heritage significance of an SHR listed place.

7.1 Impact assessment discussion

7.1.1 Newington Armament Depot and Nature Reserve (SHR No.01850)

The bridge between Melrose Park and Wentworth Point lands within the Sanctuary Wentworth Point high density residential development. The bridge would be a six span, concrete bridge. The alignment travels around the Sanctuary residential development along the edge of Newington Nature Reserve before travelling along the western side of Hill Road.

The project would have a **little to no direct impact** on the *Newington Armament Depot and Nature Reserve* (SHR No.01850) as the project site does not encroach on the heritage curtilage.

The bridge between Melrose Park and Wentworth Point would have a **moderate visual impact** on the urban visual landscape of this section of the Parramatta River through the introduction of a new built form. See Appendix A of Technical Paper 1 (Design, Place and Movement) for further discussion of visual impacts. However, the bridge would be located away from areas of highest significance and would not impact any significant views or vistas associated with the heritage item, which are all internal views and vistas between significant elements. Heritage interpretation has been recommended as an additional mitigation measure.

Proposed works along Hill Road would have **little to no visual impact** on the heritage items as the proposed alignment would not alter the current setting of the heritage item. The alignment would run along Hill Road which is currently screened from the heritage item by trees and shrubs. While some vegetation would require removal within the project site, the existing setting of the heritage item would be retained.

The project is consistent with policies and guidelines outlined in *Newington Armament Depot and Nature Reserve, Sydney Olympic Park Conservation Management Plan* (Tanner Architects 2013), specifically:

- *Policy 6 Conserve the diverse natural and cultural values of the site by minimising impacts and ongoing deterioration of the buildings, landscape, infrastructure and moveable heritage such that reuse options and opportunities are available into the future.*

7.1.2 Sewage Pumping Station 67 (SHR No. 01643, SHI No. 4571724, Parramatta LEP 2011 Item No. I01643)

This heritage item is located at the interface of the Stage 1 and Stage 2 alignments. The part of the alignment directly adjacent to the heritage item was completed as part of construction for Stage 1. Works during Stage 2 would include installation of active transport, property adjustments and installation of traffic signals.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.3 St John's Anglican Cathedral (SHR No. 01805, Parramatta LEP Item No. I01805)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street. *St John's Anglican Cathedral* is located around 50 metres south of the project site at 195 Church Street, Parramatta.

The project would have **little to no direct impact** on the heritage item as it would not impact significant fabric or its heritage curtilage. Visual impact would be negligible as proposed works would be in keeping with the current views and surrounding landscape of the heritage item. The heritage item is located outside of the sensitive receiver zone for vibrations, therefore indirect impact would also be negligible.

Works may require use of an excavator with breaker attachment. Modelling indicates that while the heritage curtilage of the heritage item falls within the vibratory impact buffer, no vibratory impacts are anticipated as the significant building structure itself does not fall within the 66 metre buffer (see Technical Paper 3 (Noise and Vibration)). Therefore, indirect impacts would be negligible.

Potential impacts on archaeological remains of the heritage item, and associated management recommendations, are discussed further in Technical Paper 6 (Historical Archaeological Assessment).

7.1.4 State Abattoir heritage conservation area (SEPP (PCRC) Area No. 1) and State Abattoir locality (SEPP (PCRC) Items No. 1 & 2)

The State Abattoir heritage conservation area (SEPP (PCRC) Area No. 1) and *State Abattoir locality* (SEPP (PCRC) Items No. 1 & 2) is located on the corner of Dawn Fraser Avenue and Showground Road. The alignment would travel along the centre of Dawn Fraser Avenue and require minor road widening and landscaping to facilitate construction of the alignment. Minor modification to Showground Road would also be required.

The project would have **little to no direct impact** on the heritage item. While the project site falls within the heritage curtilage of the heritage item, works within the heritage curtilage would be contained to existing roads and road reserves and would not impact on significant building and landscape fabric.

The project would have a **minor visual impact** on the heritage item. Non-significant planted tree species within the existing road reserve would likely require removal. However, the existing streetscape setting of the heritage item would be retained. To achieve this, a wire free track is proposed along Dawn Fraser Avenue adjacent to the heritage item to reduce visual clutter. Containing new transport infrastructure within an existing designated transport alignment consolidates infrastructure, reducing visual impact. Additionally, the area surrounding the heritage item has been redeveloped into Sydney Olympic Park. Directly opposite the heritage item on the opposite side of Dawn Fraser Avenue is the forecourt area for Olympic Park Station, while on the opposite side of Showground Road is a contemporary building. The heritage item would remain a historic landmark within a contemporary urban landscape. Recommendations have been made to avoid

placing a light rail stop in front of the heritage item. Potential impacts would be managed through implementation of the mitigation measures provided in Technical Paper 1 (Design, Place and Movement).

Works may require use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

The project is consistent with policies and guidelines outlined in the *Abattoir Heritage Precinct, Sydney Olympic Park Conservation Management Plan* (Government Architect's Office, 2013), specifically:

- *Policy 2 - Manage the precinct to ensure that the key aspects of heritage significance outlined in the guidelines below are maintained*
- *Policy 7 - Though the setting of the precinct does not contribute particularly to its significance, assess the impact of any nearby large-scale development upon the heritage significance of the site*
- *Policy 8 - Any proposed new large-scale development in the vicinity should not overshadow the open spaces in the Abattoir Heritage Precinct.*

7.1.5 Millennium Parklands Heritage Precinct (SEPP (PCRC) Item No. A)⁴

The bridge between Melrose Park and Wentworth Point lands within the Sanctuary Wentworth Point high density residential development at Wentworth Point. The bridge would consist of a six span concrete bridge consisting of a larger span over the navigational channel of the Parramatta River and several smaller spans positioned to carry the bridge over mangrove vegetation and existing active transport infrastructure. Three piers would be required in the Parramatta River. The alignment travels around the Sanctuary residential development along the edge of Newington Nature Reserve before travelling along the western side of Hill Road.

The project would have a **minor direct impact** on the heritage item through the reduction of its heritage curtilage. Where the project site encroaches on the heritage curtilage, this section of the heritage curtilage is currently an electricity easement with high voltage overhead powerlines. No significant built fabric or conservation landscape is present in this area. The project site is located within land reclaimed during the late nineteenth century. The biodiversity assessment completed for Technical Paper 9 (Biodiversity Development Assessment Report) identified planted vegetation within the project site. Planted native vegetation was planted for functional and aesthetic purposes as part of the landscaping works for the Millennium Parklands in the 1990s. However, it should be noted that the significant wetland area is located adjacent to the project site (see Plate 6.2). Containing the project site to the electricity easement and avoiding significant wetlands conservation landscape has mitigated this impact to some degree. Biodiversity impacts to this heritage item are detailed in Technical Paper 9 (Biodiversity Development Assessment Report).

The bridge between Melrose Park and Wentworth Point would have a **moderate visual impact** on the urban visual landscape of this section of the Parramatta River through the introduction of a new built form. See Appendix A of Technical Paper 1 (Design, Place and Movement) for further discussion regarding visual impact. However, the bridge would be located away from the high significance area of the original establishment precinct (see Plate 6.1). It would also not impact any significant views or vistas associated with the heritage item, identified in the CMP as being the integration of buildings and landscape and views up and down the Parramatta River from the original establishment precinct as the bridge would be located around the bend in the Parramatta River around 800 metres downstream. Heritage interpretation has been recommended as an additional mitigation measure.

Proposed works along Hill Road would have **little to no visual impact** on the heritage item as the proposed alignment would not alter the current setting of the heritage item. The alignment would run along Hill Road

⁴ As noted in Section 2.3.2, as this area is listed twice on the SEPP (PCRC) in Appendix 4 and Appendix 12 and one of these names coincides with the SHR item with a different heritage curtilage, this area is referred to as the Millennium Parklands Heritage Precinct to avoid confusion between the SHR item and the SEPP conservation area.

which is currently screened from the heritage items by trees and shrubs. While some vegetation would require removal within the project site, the existing setting of the heritage item would be retained.

The project is consistent with policies and guidelines outlined in *Millennium Parklands Heritage Precinct Conservation Master Plan* (Graham Brooks and Associates 2003), specifically *Section 16: Landscape Conservation Management Policies*.

7.1.6 Ermington Wharf (Parramatta LEP Item No. I82); Wharf (Ryde LEP Item No. I64); Former Pennant Hills Wharf (SEPP (BC) Item No. 40)

A bridge is proposed to cross the Parramatta River between Melrose Park and Wentworth Point. The bridge would carry two light rail tracks across the river as well as two active transport links located on either side of the bridge. The bridge would also include rest areas on the sides of the bridge to allow people using the links to rest while on the bridge outside the extent of the path. The bridge would comprise a six span concrete bridge consisting of a larger span over the navigational channel of the Parramatta River and several smaller spans positioned to carry the bridge over mangrove vegetation and existing active transport infrastructure. Three piers would be required in the Parramatta River.

Road widening and re-alignment, as well as provision of car parks, footpaths and landscaping would be required to facilitate the light rail alignment at the Melrose Park end of the bridge.

Construction of the bridge between Melrose Park and Wentworth Point would have **little to no direct impact** on *Ermington Wharf* (Parramatta LEP Item No. I82), *Wharf* (Ryde LEP Item No. I64), *Former Pennant Hills Wharf* (SEPP (BC) Item No. 40) (the heritage item). While the project site is located within the heritage curtilage of the heritage item, the bridge structure and associated road and landscaping works are located outside the heritage curtilage of the heritage item. Impact to archaeological resources associated with the heritage item, and associated management recommendations, are discussed in Technical Paper 6 (Historical Archaeological Assessment). Ermington Boat Ramp has been identified as a location for a temporary work platform and the surrounding area would be required to support construction activities and, these areas contain both a known archaeological resource (visible evidence of Ermington Wharf) as well as additional archaeological potential. These areas should be managed as exclusion zones, and no works should occur within the fenced preservation area.

The bridge between Melrose Park and Wentworth Point would have a **moderate visual impact** on the heritage item. While located around 100 metres east of the heritage item, the bridge would introduce a new built form to the urban visual landscape of this section of the Parramatta River. See Technical Paper 1 (Design, Place and Movement) for further details and photomontages. Heritage interpretation has been recommended as an additional mitigation measure.

Works may require use of an excavator with breaker attachment and vibratory roller. Modelling indicates that significant heritage fabric from this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.7 Wetlands (Parramatta LEP Item No. I1)

As noted in Section 7.1.6, a bridge is proposed to cross the Parramatta River between Melrose Park and Wentworth Point. A second bridge is proposed to cross the Parramatta River between Camellia and Rydalmere. The bridge would be a three-span, balanced cantilever concrete box girder. The bridge would consist of a larger central span over the river. Smaller spans would be located to the south over the mangrove vegetation, and to the north within Eric Primrose Reserve. One pier would be located within the river for the southern span, just north of the mangrove vegetation.

Construction of the bridge between Camellia and Rydalmere would have a **direct minor adverse impact** on *Wetlands* (Parramatta LEP Item No. I1) through the installation of one pier on the southern side of the river within the heritage item. The pier would require piling with concrete infill to be driven into the ground within the heritage item to provide support for the superstructure of the bridge. This impact has been mitigated to some degree through the engineering design development process which made use of natural gaps in mangrove vegetation. The use of temporary work platforms during construction would also create an elevated work area above the mangroves to limit the areas to be disturbed during construction. Impact has

been further mitigated through biodiversity offsets under the *Biodiversity Conservation Act 2016* as discussed in Technical Paper 9 (Biodiversity Development Assessment Report).

The proposed alignment along Waratah Street, Melrose Park to the Parramatta River would have **little to no direct impact** on the heritage item at this location. While the project site encroaches on the heritage curtilage, no works are proposed within the heritage item at this location. Potential indirect impacts include erosion and sedimentation, and mobilisation of contaminants. Management and mitigation measures outlined in Technical Paper 9 (Biodiversity Development Assessment Report) should be adhered to.

Both bridges across the Parramatta River would have a **moderate visual impact** on the heritage item through the addition of a new built form to the urban visual landscape of this section of the river (see Technical Paper 1 (Design, Place and Movement) for further details on visual impacts and photomontages). The bridge between Camellia and Rydalmere would be located around 200 metres from the existing Thackeray Street pedestrian and utility bridge, which already interrupts views of the heritage item from the ground but provides an aerial view of the Parramatta River and the heritage item to pedestrians. The new bridge would further interrupt these views of the heritage item to the east. This visual impact has been mitigated to some degree with the bridge between Melrose Park and Wentworth Point being located outside the heritage curtilage of the heritage item. While the bridge between Melrose Park and Wentworth Point would visually interrupt views of this section of the Parramatta River, it is located around 200 metres east of the eastern extent of the heritage item and would not interrupt internal views of the natural landscape in which the heritage item sits.

The proposed removal of mangroves within the project area would have a moderate adverse impact on *Wetlands* (Parramatta LEP Item No. 11). Mitigation measures for this area are further discussed in Technical Paper 9 (Biodiversity Development Assessment Report).

Heritage interpretation has been recommended as an additional mitigation measure to help customers appreciate and interact with the heritage item.

7.1.8 Pumping Station (Parramatta LEP Item No. 15)

Works proposed along Grand Avenue immediately adjacent to this heritage item include road resurfacing and minor alignment modifications.

The project would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current setting of the structure.

Works may require use of an excavator with breaker attachment. Modelling indicates that this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.9 Tram alignment (Parramatta LEP Item No. 16)

The Stage 2 project site connects into the Stage 1 project site at Grand Avenue North in Camellia. The alignment then follows the former industrial railway corridor of the Sandown Line between Grand Avenue and the Parramatta River. The alignment crosses Grand Avenue to the stabling and maintenance facility on the southern side of Grand Avenue beside Rosehill Gardens Racecourse. The proposed alignment then continues along the northern boundary of Grand Avenue, with this section of Grand Avenue redeveloped to facilitate construction of the light rail. At the eastern extent of Grand Avenue, the alignment turns north before crossing the Parramatta River via a new bridge and landing.

The project would have a **minor to moderate adverse direct impact** on *Tram alignment* (Parramatta LEP Item No. 16) through the potential removal or covering of remnant tram tracks at the eastern end of Grand Avenue. While the proposed alignment is along the northern boundary of Grand Avenue, new road construction is proposed within Grand Avenue where physical remains in the form of remnant tram tracks are present. This impact has been mitigated to some degree by the project retaining the existing wide street alignment of Grand Avenue, which is demonstrative of the former tramway line. Retention of the tram tracks *in situ*, either below the new road surface or level with the new road surface (as per the current situation) and heritage interpretation have been recommended as additional mitigation measures.

Works may require use of an excavator with breaker attachment and vibratory roller. Modelling indicates that this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

An assessment of the archaeological potential of the heritage item, and associated impact discussion and management recommendations, are considered in Technical Paper 6 (Historical Archaeological Assessment).

7.1.10 Rose Farm House (Parramatta LEP Item No. I63)

The alignment travels along Boronia Street around 140 metres north of *Rose Farm House* (Parramatta LEP Item No. I63). Adjustments to the road alignment and pavement along Honor Street at its intersection with Boronia Street would also be required up to a distance of around 40 metres from the heritage item. No light rail infrastructure is proposed within Honor Street itself.

The project would have **little to no impact** on the heritage item as works would not encroach on its heritage curtilage or impact on its significant heritage values. Modelling indicates that while the heritage curtilage of the heritage item falls within the vibratory impact buffer, no vibratory impact is anticipated as significant fabric associated with the heritage item is located outside of the sensitive receiver zone for vibrations (see Technical Paper 3 (Noise and Vibration)). Therefore, indirect impact would also be negligible.

7.1.11 Bulla Cream Dairy (Willowmere) (Parramatta LEP Item No. I64)

From Boronia Street, Ermington, the alignment heads east, skirting around the southeast corner of heritage item, *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64), located at the corner of Hope Street and Hughes Avenue. A light rail stop is proposed to the east of Atkins Road. Road widening and re-alignment, as well as provision of footpaths and landscaping, would be required to facilitate the light rail alignment. This would require resumption of land, and demolition of some existing structures along the southern side of Hope Street in line with Boronia Street between Atkins Road and Hughes Avenue.

The whole property containing *Bulla Cream Dairy* (Willowmere) is nominated for acquisition to facilitate construction and operation of the project. Fabric of high significance associated with the main house, *Willowmere*, would be retained. The Bulla Cream Factory building and associated infrastructure, rated as little significance, would be demolished (see Figure 7.1). Significant plantings, of both high and moderate significance, would also be removed. The alignment runs close to the highly significant Billiards Room and it is possible construction would require the structure to be demolished (see Figure 7.1). The residual land around the heritage item would likely become public open space with a section of green track around the Atkins Road stop to sympathetically integrate the stop with the surrounding open space. Residual land is to be repurposed as new and improved open space and recreation facilities for the community as detailed in Technical Paper 1 (Design, Place and Movement). A residual land management plan would be prepared to define the approach to managing residual land, including the future use of the land, determined in consultation with the community and key stakeholders.

Directing the alignment along Hope Street to the north of *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) was considered. However, this option would have required construction of the light rail in close proximity to the main house structure (Willowmere) risking adverse impacts (including potential demolition) and a lost opportunity for adaptive reuse. It was also not possible to locate the alignment further north in the road reserve to provide a greater clearance to the main house building due to the presence of major underground water utilities. This option also required alterations to road configurations and impacts to property access along the northern side of Hope Street. These issues have been resolved with the current proposed alignment which provides greater clearance to significant fabric of the main house structure (Willowmere) ensuring its retention and proposed adaptive reuse.

Overall, the project would have a **moderate to major adverse direct impact** on the heritage item through reduction of its heritage curtilage, removal of the driveway alignment, potential demolition of significant fabric and removal of its significant setting. Additionally, while the Swane family no longer live in the property, the house is still currently used as a private residence. Proposed works and acquisition would necessitate a change in use of the building, further impacting its heritage significance. This impact has been mitigated to some degree through the retention of the main house structure (Willowmere) and the realignment of the light

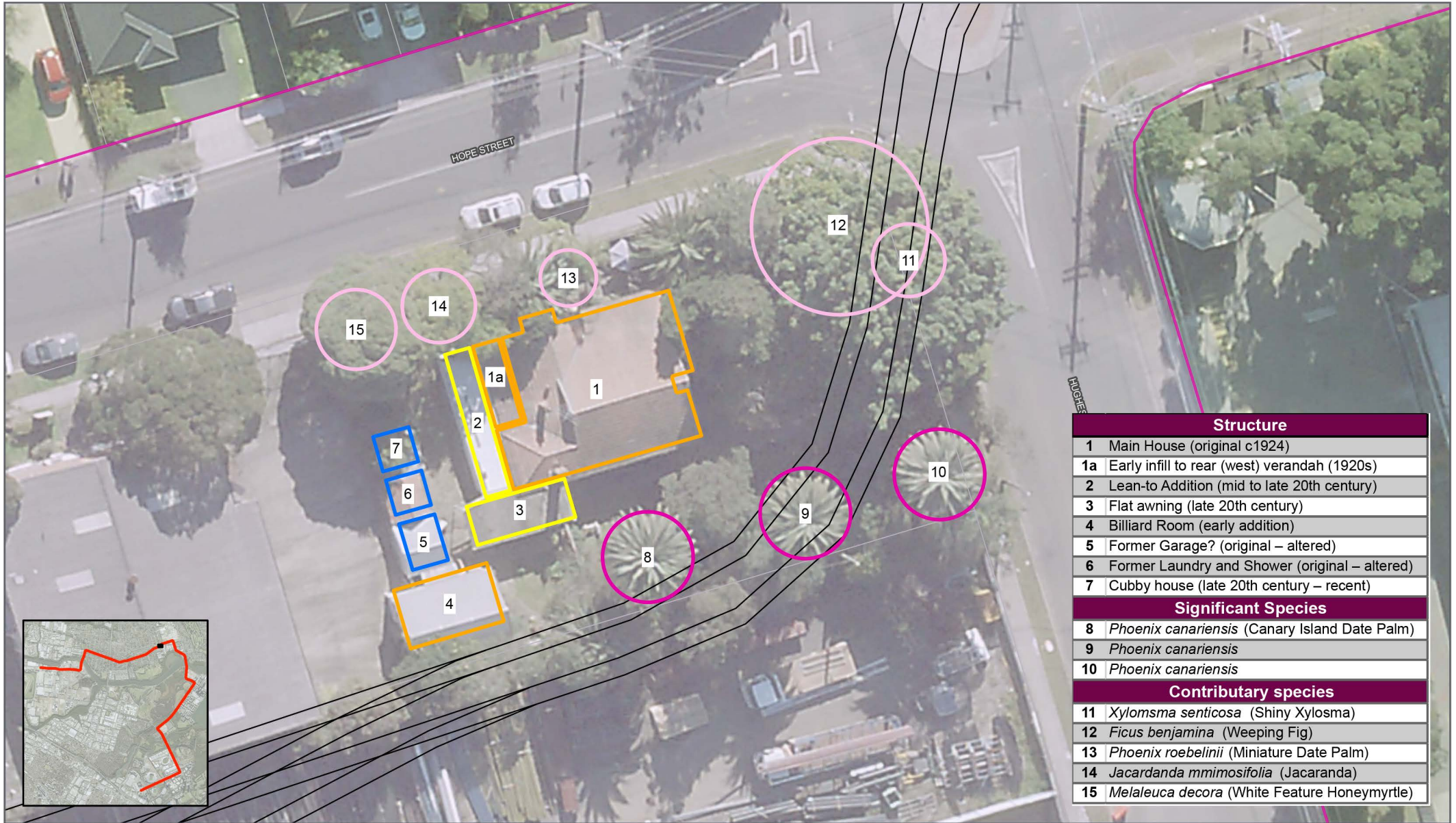
rail to provide greater clearance to the significant main house. Retention of significant fabric and plantings, protection of significant fabric during works, archival recording of the heritage item, adaptive re-use and heritage interpretation have been recommended as additional mitigation measures.

The proposed alignment would have a **major adverse visual impact** on the significant setting of the heritage item through not only the reduction of its heritage curtilage, but the removal of significant plant species. All plantings of high and moderate significance (see Plate 6.6) would be removed to facilitate construction and operation of the project. This has been mitigated, albeit inadvertently, through the ability to view the house once again from two street frontages, as originally designed by the architect. Impact has been further mitigated by the proposed creation of open space around the heritage item, indicative of the former nursery and house setting. Options are also being explored for the relocation of plant species of both high and moderate significance to a suitable location within the surrounding residual open space. The project has committed to provide offset plantings for trees where it is not possible to avoid impacts and relocation is not undertaken, in accordance with the Tree Offset Strategy. Recommendations have been made for design refinement to retain significant heritage fabric and plantings, create sympathetic open space around the residual heritage complex, and use sympathetic light rail infrastructure design and placement to further mitigate this impact. An arboricultural impact assessment has also been recommended to determine the feasibility of transplanting the significant and contributory plantings impacted by the project.

Works may require use of a vibratory roller and an excavator with breaker attachment. Modelling indicates that this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

A detailed impact assessment against each individual significant element of the heritage item is presented in Table 7.2.

An assessment of the archaeological potential of the heritage item, and associated impact discussion and management recommendations, are considered in Technical Paper 6 (Historical Archaeological Assessment).



Structure	
1	Main House (original c1924)
1a	Early infill to rear (west) verandah (1920s)
2	Lean-to Addition (mid to late 20th century)
3	Flat awning (late 20th century)
4	Billiard Room (early addition)
5	Former Garage? (original – altered)
6	Former Laundry and Shower (original – altered)
7	Cubby house (late 20th century – recent)
Significant Species	
8	<i>Phoenix canariensis</i> (Canary Island Date Palm)
9	<i>Phoenix canariensis</i>
10	<i>Phoenix canariensis</i>
Contributory species	
11	<i>Xylomsma senticoso</i> (Shiny Xylosma)
12	<i>Ficus benjamina</i> (Weeping Fig)
13	<i>Phoenix roebelinii</i> (Miniature Date Palm)
14	<i>Jacardanda mimosifolia</i> (Jacaranda)
15	<i>Melaleuca decora</i> (White Feature Honeymyrtle)

- Legend**
- Project site
 - Cadastre
 - Project alignment
 - Significant species
 - Contributory Species

- Grades of Significance**
- Exceptional
 - High
 - Moderate
 - Little
 - Intrusive

Paper Size ISO A4
 0 10
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Transport for NSW
 Parramatta Light Rail Stage 2 EIS
 Statement of Heritage Impact
Bulla Cream Dairy (Willowmere)
 and its individual elements in
 relation to the project

Project No. 12557728
 Revision No. A
 Date 06/10/2022

FIGURE 7.1

Table 7.2: Impact assessment of significant elements of *Bulla Cream Dairy (Willowmere)*

Heritage fabric	Significance (according to LSJP 2018)	Impact to specific element
Main house (c1924) including overall form and all original and early features internally and externally: the Marseilles tile roof with timber boarded gables, steel framed French doors and windows to the north and south elevations, pine flooring throughout, original internal joinery and decorative fibrous cement ceilings.	High	Little to no adverse impact Structure would be retained. Potential indirect impact from vibration during construction works. Vibration monitoring and protection of significant fabric during works have been recommended to mitigate this impact.
Billiards Room- Outbuilding 4 (early addition)	High	Total loss of significance Where physical construction of the alignment requires demolition of structure. Little to no adverse impact If the structure can be retained and adaptively re-used. Potential indirect impact from vibration during construction works. Retention of significant fabric, vibration monitoring and protection of significant fabric during works have been recommended to mitigate these potential impacts.
Allotment boundaries of Lot 1 DP 128574	High	Moderate adverse impact The whole property would be acquired for the project and the project would reduce the allotment size and southern and eastern boundaries. This has been mitigated to some degree through the creation of public open space across the western portion of the allotment. Recommendations have been made to consider the former Swane Brothers Enterprise Nursery in the design of the public open space to further mitigate this impact.
Residential use of the eastern portion of the allotment	High	Major adverse impact It is anticipated that the construction footprint and subsequent operational phase of the project would not facilitate the continued residential use of the eastern portion of the allotment. Heritage interpretation and adaptive re-use of the site have been recommended to mitigate this impact.
Alignment of the driveway	High	Total loss of significance The driveway would be completely removed to facilitate the light rail alignment. Archival recording has been recommended to mitigate this impact.
Southern boundary garden bed with three Canary Island date palms (<i>Phoenix canariensis</i>) Oleander (<i>Nerium oleander</i>) and Crepe Myrtle (<i>Lagerstroemia indica</i>).	High	Total loss of significance The project would require the removal of the southern garden bed. Retention of the southern garden bed and its highly significant species in situ has been recommended to be investigated during the next stages of design. Where plantings are removed, an arboricultural impact assessment has been recommended to determine the feasibility of relocating the plantings, with archival recording recommended as an additional mitigation measure.

STATEMENT OF HERITAGE IMPACT – BUILT HERITAGE

Heritage fabric	Significance (according to LSJP 2018)	Impact to specific element
Later fitouts to kitchen and bathroom to main house	Moderate	Little to no impact The project would not impact interiors of the main house.
Later alterations to Main house including mid-century fireplaces	Moderate	Little to no impact The project would not impact interiors of the main house.
Contributory plant species: <ul style="list-style-type: none"> • Shiny Xylosma (<i>Xylosma senticosa</i>) • Weeping fig (<i>Ficus benjamina</i>) • Miniature date palm (<i>Phoenix roebelinii</i>) • Jacaranda (<i>Jacaranda mimosifolia</i>) • White Feather Honeymyrtle (<i>Melaleuca decora</i>). 	Moderate	Total loss of significance The project would likely require the removal of all contributory plant species. Retention of the moderately significant contributory plant species in situ has been recommended to be investigated during the next stages of design. Where plantings are removed, an arboricultural impact assessment has been recommended to determine the feasibility of relocating the plantings, with archival recording recommended as an additional mitigation measure.
Bulla Cream Dairy factory building with associated car parking and landscape features	Little	Total loss of significance The project would require demolition of the factory building and associated car parking and landscape features for creation of public open space. Archival recording has been recommended to mitigate this impact.
Light industrial use of the western portion of the allotment	Little	Total loss of significance The project would require demolition of industrial structures in the western portion of the allotment for creation of public open space. Archival recording has been recommended to mitigate this impact.
Former Garage- Outbuilding 5 (original-substantially altered)	Little	Little to no impact Structure would be retained. Potential indirect impact from vibration during construction works. Vibration monitoring and protection of significant fabric during works have been recommended to mitigate this impact.
Former laundry- Outbuilding 6 (original-substantially altered)	Little	Little to no impact Structure would be retained. Potential indirect impact from vibration during construction works. Vibration monitoring and protection of significant fabric during works have been recommended to mitigate this impact.
Cubby house- Outbuilding 7 (late 20 th century)	Little	Little to no impact Structure would be retained. Potential indirect impact from vibration during construction works. Vibration monitoring and protection of significant fabric during works have been recommended to mitigate this impact.
Wire mesh fencing along southern boundary	Little	Total loss of significance The project would require removal of the fence.
High timber paling fence to north and east boundary	Intrusive	Total loss of significance The project would remove the fence.
Concrete patio with flat roofed awning (late 20 th century)	Intrusive	Little to no impact Structure would be retained.
Rear (west) skillion with laundry (late 20 th century)	Intrusive	Little to no impact

Heritage fabric	Significance (according to LSJP 2018)	Impact to specific element
		Structure would be retained.

7.1.12 Parramatta Town Hall (and potential archaeological site) (Parramatta LEP Item No. I650)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street around 60 metres northwest of *Parramatta Town Hall (and potential archaeological site)* (Parramatta LEP Item No. I650). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street. The turnback would be accessed via a new turnout from the Parramatta Light Rail Stage 1 line, located east of the Macquarie Street and Church Street intersection.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require use of an excavator with breaker attachment. Modelling indicates that while the heritage curtilage of the heritage item falls within the vibratory impact buffer, no vibratory impacts are anticipated as significant fabric associated with the heritage item is located outside of the sensitive receiver zone for vibrations (see Technical Paper 3 (Noise and Vibration)). Therefore, indirect impacts would be negligible.

Potential impacts on archaeological remains of the heritage item, and associated management recommendations, are discussed further in Technical Paper 6 (Historical Archaeological Assessment).

7.1.13 Bicentennial Square and adjoining buildings (Parramatta LEP Item No. I651)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street adjacent to *Bicentennial Square* (Parramatta LEP Item No. I651). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street. The facility would allow light rail vehicles to change tracks and travel in the opposite direction and enable the temporary layover of light rail vehicles. The turnback would be accessed via a new turnout from the Parramatta Light Rail Stage 1 line, located east of the Macquarie Street and Church Street intersection.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require the use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.14 Murrays' Building (and potential archaeological site) (Parramatta LEP Item No. I652)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street adjacent to *Murrays' Building* (Parramatta LEP Item No. I652). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street. The turnback would be accessed via a new turnout from the Parramatta Light Rail Stage 1 line, located east of the Macquarie Street and Church Street intersection.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require the use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.15 Warden's cottage (verger's cottage) (Parramatta LEP Item No. I653)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street. *Warden's cottage (verger's cottage)* (Parramatta LEP Item No. I653) is located within the grounds of *St John's Anglican Cathedral*, over 70 metres south of the project site. The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street.

Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would not impact current views from the building.

Works may require use of an excavator with breaker attachment. Modelling indicates that while the heritage curtilage of the heritage item falls within the vibratory impact buffer, no vibratory impact is anticipated as significant fabric associated with the heritage item is located outside of the sensitive receiver zone for vibrations (see Technical Paper 3 (Noise and Vibration)). Therefore, indirect impact would be negligible.

7.1.16 Centennial Memorial Clock (Parramatta LEP Item No. I654)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street adjacent to *Centennial Memorial Clock* (Parramatta LEP Item No. I654).

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require the use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.17 Shop (and potential archaeological site) (Parramatta LEP Item No. I655)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street and minor road adjustments to Church Street and Marsden Street adjacent to *Shop* at 197 Church Street (Parramatta LEP Item No. I655). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require the use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which

may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.18 Horse parapet façade and potential archaeological site (Parramatta LEP Item No. I656)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street adjacent to *Horse parapet façade* (Parramatta LEP Item No. I656). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require the use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.19 Telstra House (former post office) (and potential archaeological site) (Parramatta LEP Item No. I657)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street around 50 metres south of *Telstra House (former post office) (and potential archaeological site)* (Parramatta LEP Item No. I657). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require the use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

Potential impacts on archaeological remains of the heritage item, and associated management recommendations, are discussed further in Technical Paper 6 (Historical Archaeological Assessment).

7.1.20 HMV (former Commonwealth Bank) (and potential archaeological site) (Parramatta LEP Item No. I658)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street around 60 metres south of *HMV (former Commonwealth Bank) (and potential archaeological site)* (Parramatta LEP Item No. I658). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street.

Impact to the heritage item was assessed during Stage 1 (Artefact 2017). Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage. Visual impact would also be negligible as proposed works would be in keeping with the current views from the building.

Works may require use of an excavator with breaker attachment. Modelling indicates that while the heritage curtilage of the heritage item falls within the vibratory impact buffer, no vibratory impacts are anticipated as significant fabric associated with the heritage item is located outside of the sensitive receiver zone for vibrations (see Technical Paper 3 (Noise and Vibration)). Therefore, indirect impact would be negligible.

Potential impacts on archaeological remains of the heritage item, and associated management recommendations, are discussed further in Technical Paper 6 (Historical Archaeological Assessment).

7.1.21 St John's Parish Hall (Parramatta LEP Item No. I713)

The project alignment along Macquarie Street was completed during Stage 1 of the project. Works during Stage 2 comprise a turnback facility along Macquarie Street around 50 metres north of *St John's Parish Hall* (Parramatta LEP Item No. I713). The facility would consist of two tracks, about 100 metres long, between Church Street and Marsden Street.

Works during Stage 2 would have **little to no direct impact** on the heritage item as works would not encroach on its heritage curtilage nor impact any existing views or settings of the heritage item.

Works may require the use of an excavator with breaker attachment. Modelling indicates that the closest façade of this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

7.1.22 House at 46 John Street, Rydalmere (potential heritage item)

The proposed alignment travels north along John Street and turns east on to South Street. A light rail stop is proposed on John Street for interchange with the Rydalmere Wharf. Minor road improvements and realignments are required to John Street, including widening of the intersection with South Street to facilitate the alignment.

House at 46 John Street is situated on the north-west corner of the intersection of John and South Streets. The project would have a **moderate adverse direct impact** on the item as the project site encroaches on the property boundary. The project would likely require acquisition of around 50 square metres of land. Use of the acquired land may also require the demolition of existing period fence contemporary with the house structure.

The project would have a **moderate visual impact** on the existing setting of the house through alteration of its urban setting by the removal of the wide easement along the southern side of the property, reduction of its curtilage, removal of its existing period fence and removal of mature plantings. Demolition of adjacent industrial buildings and introduction of light rail infrastructure would impact the wider streetscape setting of the potential heritage item, however this would not impact views of the house itself. To mitigate this impact, recommendations have been made for design refinement to avoid or minimise impacts to the property boundary and to keep the house and its setting intact, and to include consideration of sympathetic light rail stop design.

Work may require use of vibratory roller and an excavator with breaker attachment. Modelling indicates that this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

Archival recording of this property has been recommended as mitigation measure against these impacts, where impact to the property cannot be avoided.

7.1.23 House at 69 South Street, Rydalmere (potential heritage item)

The proposed alignment travels along South Street, with a light rail stop proposed at Nowill Street just east of the potential heritage item. Road widening and turn lanes would be required along South Street to facilitate the light rail alignment. Road works would require use of existing road reserve and easement along the northern side of South Street. Retaining walls would be provided as a result of the difference between

the height of the existing ground surface and the proposed alignment along the northern side of South Street up to about 1.6 metres high.

House at 69 South Street is situated on the northern side of South Street. The project would have a **little to no direct impact** on the item as the project site does not encroach on the property boundary or impact potential significant fabric.

However, the project would have a **moderate visual impact** on the existing setting of the house through removal of the wide easement in front of the property, placement of a retaining wall across the front of the property and introduction of infrastructure associated with the Nowill Street stop, however this would not impact views of the potential heritage item itself. To mitigate urban visual impact, recommendations have been made for design refinement to consider moving the light rail stop further away from the property or using sympathetic light rail stop design.

Works may require the use of an excavator with breaker attachment. Modelling indicates that this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

As there are no direct impacts to this site, no further assessment of significance is required in relation to the project.

7.1.24 House at 71 South Street, Rydalmere (potential heritage item)

The proposed alignment travels along South Street, with a light rail stop proposed at Nowill Street just east of the potential heritage item. Road widening and turn lanes would be required along South Street to facilitate the light rail alignment. Road works would require use of existing road reserve and easement along the northern side of South Street. Retaining walls would be provided as a result of the difference between the height of the existing ground surface and the proposed alignment along the northern side of South Street up to about 1.6 metres high.

House at 71 South Street is situated on the northern side of South Street. The project would have a **little to no direct impact** on the item as the project site does not encroach on the property boundary or impact potential significant fabric.

The project would have a **moderate visual impact** on the existing setting of the house through removal of the wide easement in front of the property, minor reduction of its property boundary, placement of a retaining wall across the front of the property and introduction of infrastructure associated with the Nowill Street stop, however this would not impact views of the potential heritage item itself. To mitigate urban visual impact, recommendations have been made for design refinement to consider moving the light rail stop further away from the property or using sympathetic light rail stop design.

Works may require the use of an excavator with breaker attachment. Modelling indicates that this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

As there are no direct impacts to this site, no further assessment of significance is required in relation to the project.

7.1.25 House at 67 Boronia Street, Ermington (potential heritage item)

The proposed alignment travels along Boronia Street. Road widening, including the addition of a shared path along the northern side of Boronia Street to facilitate the light rail alignment. Road works would require use of existing road reserve and easement along both sides of Boronia Street.

House at 67 Boronia Street is location on the northern side of Boronia Street. The project would **have little to no impact** to the potential heritage item as neither the project site or proposed works would impede on the property boundary.

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The project would have a **minor visual impact** on the existing urban setting of the house through reduction of the wide easement in front of the property, and introduction of light rail infrastructure.

Works may require the use of an excavator with breaker attachment. Modelling indicates that this item would experience vibration levels above the screening level for cosmetic damage, which may have a **minor indirect impact**. Potential vibration impacts would be managed through implementation of the mitigation measures provided in Technical Paper 3 (Noise and Vibration). Any other potential impacts from construction activities would be minimised and managed by the preparation of a CEMP for the project as outlined in Section 8 of this report.

As there are no direct impacts to this site, no further assessment of significance is required in relation to the project.

7.2 Summary of heritage impact and mitigation measures

Table 7.3 provides an overview of heritage impact and mitigation measures for each heritage item. Detailed recommendations are presented in Section 8 of this report.

Table 7.3: Summary of heritage impact and mitigation measure by heritage item

Heritage item	Significance	Assessed impact	Recommended mitigation measures
<i>Newington Armament Depot and Nature Reserve (SHR No.01850)</i>	State	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works outside of heritage curtilage. <p>Moderate visual impact</p> <ul style="list-style-type: none"> Introduction of a new built form in the urban landscape. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 1 (Design, Place and Movement). Heritage interpretation.
<i>Sewage Pumping Station 67 (SHR No. 01643, SHI No. 4571724, Parramatta LEP Item No. 101643)</i>	State	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works outside of heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration).
<i>St John's Anglican Cathedral (SHR No. 01805)</i>	State	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works outside of heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>State Abattoir heritage conservation area (SEPP(PCRC) Area No. 1 & Area A) and State Abattoir locality (SEEP (PCRC) Items No. 1 & 2)</i>	State	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Encroachment of heritage curtilage but no impact on significant building or landscape fabric. <p>Minor visual impact</p> <ul style="list-style-type: none"> Alteration of existing streetscape setting through removal of planted species in road reserve. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration).

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Heritage item	Significance	Assessed impact	Recommended mitigation measures
<i>Millennium Parklands Heritage Precinct</i> (SEPP (PCRC) Item A)	State	<p>Minor direct impact</p> <ul style="list-style-type: none"> Project encroaches on heritage curtilage. <p>Moderate visual impact</p> <ul style="list-style-type: none"> Introduction of a new built form in the urban landscape. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 1 (Design, Place and Movement). Heritage interpretation.
<i>Wharf</i> (Ryde LEP 2014 Item No. 165) <i>Ermington Wharf</i> (Parramatta LEP Item No. 182) <i>Former Pennant Hills Wharf</i> (SEPP (BC) Item No. 40)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Encroachment of heritage curtilage but no impact on significant fabric. <p>Moderate visual impact</p> <ul style="list-style-type: none"> Introduction of a new built form in the urban landscape. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Heritage interpretation. Follow recommendations in Technical Paper 1 (Design, Place and Movement). Follow recommendations in Technical Paper 3 (Noise and Vibration). Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>Wetlands</i> (Parramatta LEP Item No. 11)	Local	<p>Minor direct impact</p> <ul style="list-style-type: none"> Physical impact through installation of one pier within the heritage item of the proposed bridge between Camellia and Rydalmere. <p>Moderate visual impact</p> <ul style="list-style-type: none"> Introduction of a new built form in the urban landscape. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Indirect ecological impact through changes to surrounding environment. 	<ul style="list-style-type: none"> Heritage interpretation. Follow recommendations in Technical Paper 1 (Design, Place and Movement). Follow recommendations in Technical Paper 9 (Biodiversity Development Assessment Report).
<i>Pumping Station</i> (Parramatta LEP Item No. 15)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works outside of heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration).
<i>Tram alignment</i> (Parramatta LEP Item No. 16)	Local	<p>Minor to moderate direct impact</p> <ul style="list-style-type: none"> Removal or covering of remnant tram track at eastern end of Grand Avenue. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Retain remnant tracks <i>in situ</i>. Heritage interpretation. Follow recommendations in Technical Paper 3 (Noise and Vibration). Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>Rose Farm House</i> (Parramatta LEP Item No. 163)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works outside of heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting. 	None.
<i>Bulla Cream Dairy</i> (Willowmere)	Local	Moderate to major direct impact	<ul style="list-style-type: none"> Design refinement to consider:

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Heritage item	Significance	Assessed impact	Recommended mitigation measures
(Parramatta LEP Item No. I64)		<ul style="list-style-type: none"> Reduction of heritage curtilage. Removal of significant plantings and landscape features of high and moderate significance. Removal of driveway alignment of high significance. Removal of built elements of little significance. Potential removal of significant fabric, and inadvertent harm, from construction works associated with the project. Change in use. <p>Major visual impact</p> <ul style="list-style-type: none"> Removal of significant setting through removal of significant plantings and landscape features, reduction of heritage curtilage and introduction of light rail infrastructure. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> avoid property boundary reduction retain Billiards Room structure retention of significant plantings of high and moderate significance sympathetic light rail stop design and placement sympathetic open space design. Protection of significant fabric during works. Arboricultural impact assessment to determine feasibility of relocating plantings of high and moderate significance. Archival recording. Adaptive re-use. Heritage interpretation. Follow recommendations in Technical Paper 1 (Design, Place and Movement). Follow recommendations in Technical Paper 3 (Noise and Vibration). Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>Parramatta Town Hall</i> (Parramatta LEP Item No. I650)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works outside of heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>Bicentennial Square and adjoining buildings</i> (Parramatta LEP Item No. I651)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration).
<i>Murrays' Building (and potential archaeological site)</i> (Parramatta LEP Item No. I652)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration). Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>Warden's cottage (verger's cottage)</i> (Parramatta LEP Item No. I653)		<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. 	None.

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Heritage item	Significance	Assessed impact	Recommended mitigation measures
<i>Centennial Memorial Clock</i> (Parramatta LEP Item No. I654)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration).
<i>Shop (and potential archaeological site)</i> (Parramatta LEP Item No. I655)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration). Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>Horse parapet façade and potential archaeological site</i> (Parramatta LEP Item No. I656)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration). Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>Telstra House (former post office) (and potential archaeological site)</i> (Parramatta LEP Item No. I657)	Local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration). Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>HMV (former Commonwealth Bank) (and potential archaeological site)</i> (Parramatta LEP Item No. I658)		<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 6 (Historical Archaeological Assessment).
<i>St John's Parish Hall</i> (Parramatta LEP Item No. I713)		<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on its heritage curtilage. <p>Little to no visual impact</p> <ul style="list-style-type: none"> No change to existing setting <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration).

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Heritage item	Significance	Assessed impact	Recommended mitigation measures
House at 46 John Street, Rydalmere (potential heritage item)	Potential local	<p>Moderate direct impact</p> <ul style="list-style-type: none"> Reduction of potential heritage curtilage. Demolition of contributory potential significant fabric. <p>Moderate visual impact</p> <ul style="list-style-type: none"> Alteration of existing setting through removal of southern easement, reduction of property boundary, introduction of light rail infrastructure. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Design refinement to: <ul style="list-style-type: none"> avoid reduction of property boundary consider sympathetic light rail stop design and placement. Archival recording. Follow recommendations in Technical Paper 3 (Noise and Vibration).
House at 69 South Street, Rydalmere (potential heritage item)	Potential local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on property boundary. <p>Moderate visual impact</p> <ul style="list-style-type: none"> Alteration of existing setting through removal of southern easement, reduction of property boundary, introduction of light rail infrastructure. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Design refinement to consider sympathetic light rail stop design. Follow recommendations in Technical Paper 3 (Noise and Vibration).
House at 71 South Street, Rydalmere (potential heritage item)	Potential local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on property boundary. <p>Moderate visual impact</p> <ul style="list-style-type: none"> Alteration of existing setting through removal of southern easement, reduction of property boundary, introduction of light rail infrastructure. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Design refinement to consider sympathetic light rail stop design. Follow recommendations in Technical Paper 3 (Noise and Vibration).
House at 67 Boronia Street, Ermington (potential heritage item)	Potential local	<p>Little to no direct impact</p> <ul style="list-style-type: none"> Works would not encroach on property boundary. <p>Minor visual impact</p> <ul style="list-style-type: none"> Alteration of existing setting through removal of southern easement. <p>Minor indirect impact</p> <ul style="list-style-type: none"> Vibration levels above the screening level for cosmetic damage. 	<ul style="list-style-type: none"> Follow recommendations in Technical Paper 3 (Noise and Vibration).

7.3 Cumulative impact assessment

When considered in isolation, the environmental impacts and benefits of an individual project may not be significant. However, when combined with the effects of other developments, the cumulative effects can

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potentially result in a greater extent, magnitude or duration of impacts. Identifying potential cumulative impacts assists in developing appropriate management measures and provides a basis for coordinated regional planning and environmental monitoring.

The cumulative impacts of the project would consist of the introduction of new infrastructure along the alignment. For the project, this includes light rail track and stops, wires, poles, and associated ancillary works, as well as the introduction of bridges, most notably two across the Parramatta River. The cumulative impacts to heritage across the project site are considered **low to moderate** as:

- the new infrastructure would be largely visually consistent along the length of the alignment, except for river and creek crossings where new bridges would be installed
- installation of two bridges over the Parramatta River would introduce large new structures which would have a moderate adverse visual impact on the surrounding landscape and minor direct impact on heritage items, *Millennium Parklands Heritage Precinct* and *Wetlands*
- a small section of the alignment would be within an existing rail corridor (*Tram alignment*), enhancing the historic values of this corridor, and the interpretation of heritage sites and archaeology would be used to mitigate impact and enhance other heritage values
- once operational, the project would facilitate in bringing additional members of the community to numerous heritage items, improving the appreciation and understanding of these items through new interpretation.

The cumulative impacts of the Parramatta Light Rail Stage 2 project with other developments within the vicinity of the project site has been assessed in Table 7.4.

Table 7.4: Cumulative impacts of the project with other developments in the vicinity of the project site

Project	Location & description	Interaction with project
Parramatta Leagues Club Hotel	17-19 O’Connell Street (Lot 369 of DP752058, Lot 7054 of DP1074335). The site is commonly known as 1 Eels Place, Parramatta. It is south of the current Parramatta Leagues Club building and north of Western Sydney Stadium. The site of the building and public domain work has an area of approx. 4,360m ² .	The project is located approximately one kilometre north from the project site along Macquarie Street. The cumulative impact of this project would be negligible due to its distance from the project site. Cumulative impacts to historical archaeology have been considered separately in Technical Paper 6.
Private hospital and hotel	41-43 Hunter Street, Parramatta (Lot 1 of DP27310) The site is located on the corner of Hunter Street and Marsden Street and is approximately 200 metres south of the project site along Macquarie Street.	The project would interact with the project site along Marsden Street. The cumulative impact would be negligible as the existing setting of Marsden Street would not be altered. Once operational, the proposed light rail alignment would provide customers better access to the hospital.
Sydney Metro West	Sydney Metro West will service Westmead, Greater Parramatta, Sydney Olympic Park, The Bays Precinct and the Sydney CBD linking new communities to rail services with intermediate stations. Works include construction of new underground metro service, metro stations, stabling and maintenance facilities, and associated infrastructure.	The Clyde stabling and maintenance facility is located approximately 800 metres south of the project site at Camellia on Colquhoun Street. The cumulative impact of this would be negligible due to its distance from the project site. The Parramatta Sydney Metro West Station construction site would be located on the north-eastern boundary of the project site bounded by George, Macquarie, Church and Smith streets. The cumulative impact of this would be minor visual from the introduction of a new built form adjacent to heritage items along Macquarie and Church Streets, and minor indirect through vibration from proximity to sensitive receivers. Once operational, the light rail and Sydney Metro West would provide Parramatta customers better access to the public transport network. The proposed Sydney Metro West station at Sydney Olympic Park construction site is approximately 50 metres to the project site along Dawn Fraser Avenue.

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Project	Location & description	Interaction with project
		<p>The cumulative impact of this would be negligible. The visual impact of the introduction of a new metro station would not alter the current setting the <i>State Abattoirs</i> and both projects pose a minor indirect impact to <i>State Abattoirs</i> through vibration from their proximity to sensitive receivers. Once operational, the light rail and Sydney Metro West would provide customers better access to <i>State Abattoirs</i> and <i>Olympic Cauldron at Sydney Olympic Park</i> to view and appreciate them.</p>
Powerhouse Parramatta	34-54 & 30B Phillip Street and 338 Church Street, Parramatta (Lot 1 of DP128474, Lot 2 of DP1247122 and Lot 1 of DP1247122)	<p>The project is located approximately 550 metres north from the project site at Macquarie Street. The cumulative impact would be negligible due to the distance from the project site. Once operational, the light rail would provide customers better access to Powerhouse Parramatta.</p>
Mixed-use development – retail, commercial and hotel	<p>197 Church Street, Parramatta.</p> <p>The development would see the redevelopment of heritage item <i>Shop (and potential archaeological site)</i> (Parramatta LEP Item No. I655)</p> <p>Two tower mixed-use development comprising two storey retail podium, 25 storey commercial office tower and 32 storey hotel accommodation tower; and four basement levels for car parking and hotel ballroom.</p>	<p>The project site interacts with the mixed-use development at the corner of Church and Macquarie Streets.</p> <p>While the mixed use development would have an adverse visual impact to the setting of Church and Macquarie Streets, the cumulative impact of the project would be negligible. Parramatta Light Rail Stage 1 has already been completed along Church Street and the installation of a turnback facility along Macquarie Street would be in keeping with the current setting of Macquarie Street.</p>
Draft Camellia-Rosehill Precinct (Place Strategy)	<p>The master plan includes three sub precincts and covers approximately 320 hectares across Camellia, Rosehill, and a portion of Clyde.</p> <p>Development within the immediate vicinity of this project site includes a proposed town centre, a foreshore linear park along Parramatta River, a new urban plaza at James Ruse Drive and a new primary school and central local park.</p>	<p>The master plan interacts with the project site along Grand Avenue and the proposed stop ‘Sandown Boulevard’.</p> <p>The cumulative impact would be minor adverse. While the heritage item <i>Tram alignment</i> would be impacted by the installation of the light rail, re-use of the former tram alignment respects its heritage values. Redevelopment of the long-standing industrial area through the master plan would alter the historic industrial setting of Camellia but once operational, the light rail would provide customers and residents better access to the Camellia-Rosehill Precinct.</p> <p>Development of a foreshore park and active transport network along the Parramatta River as part of the master plan would have a direct physical impact on <i>Wetlands</i>, through the construction of pathways and associated amenities. However, both the active transport network and the light rail would provide customers better access to the Wetlands, to appreciate and enjoy them.</p>

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Project	Location & description	Interaction with project
Viva Energy Clyde Western Area	Remediation of the south-western part of the Clyde Terminal site. The site is located at Durham Street on the Camellia Peninsula and consists of the following lots: <ul style="list-style-type: none"> • Lot 398 DP41324 • Lots 100 and 101 of DP1168951 • Lot 101 of DP809340 • Lot 2 of DP224288 • Lot 1 of DP383675 	The northern boundary of the site directly interacts with the project site along Grand Avenue (including a section of Durham Street) as it extends across the Parramatta River to John Street. The cumulative impact of these works would be negligible. Remediation works would not impact <i>Tram alignment</i> along Grand Avenue, nor would they alter the current industrial/commercial setting.
Camellia Waste Facility	37 Grand Avenue Camellia (Lot 1 of DP539890) The site is approx. 2.3ha in area and is zoned IN3 Heavy Industrial.	The waste facility site interacts with the project site on the southern boundary along Grand Avenue and the eastern boundary as it runs across Parramatta River. The cumulative impact of this would be minor. Construction of the Camellia Waste Facility may have a direct adverse impact on <i>Wetlands</i> along the southern side of the Parramatta River adjacent to the proposed Camellia to Rydalmere light rail bridge. There would be no cumulative impact to <i>Tram alignment</i> along Grand Avenue as the Camellia Waste Facility would be in keeping with the current industrial setting.
Melrose Park North Planning Proposal	The Melrose Park North Planning Proposal applies to the Northern Precinct of the Melrose Park Urban Renewal Precinct.	The Melrose Park North Planning Proposal site would interact with the project site along Hope Street, Hughes Avenue and Wharf Road. The cumulative impact would be negligible. Conversion of the existing industrial area into a residential area under the Melrose Park North Planning Proposal, would have no impact on <i>Bulla Cream Dairy</i> (Willowmere) as it is in keeping with the wider Melrose Park residential setting. The new open space around <i>Bulla Cream Dairy</i> (Willowmere) created by the project would provide greater visibility and access to the heritage item. Both the development and the project would increase visitor numbers and accessibility to the area, enabling the community to interact and appreciate the heritage item.
Holdmark Planning Proposal (Melrose Park Southern Precinct)	The Melrose Park South precinct comprises of land bounds by Hope Street to the north, Wharf Road to the east, Parramatta River to the south and Atkins Road to the west. The eastern boundary is shared with the City of Ryde Council	The site would interact with the project site along Hope Street, Hughes Avenue, Wharf Road, Waratah Street and Mary Street. The cumulative impact would be negligible. Conversion of the existing industrial area into a residential area, would have no impact on <i>Bulla Cream Dairy</i> (Willowmere), <i>Wetlands</i> or <i>Ermington Wharf</i> as it is in keeping with the wider Melrose Park residential setting. Additionally, the new open space around <i>Bulla Cream Dairy</i> (Willowmere) created by the project would provide greater visibility and access to the heritage item. The development and the project would increase visitor numbers and accessibility to the area, enabling the community to interact and appreciate the heritage items.

7.4 Overview of heritage impact

The following questions are required to be addressed in a SOHI, as established in the publication *Statements of Heritage Impact* (Heritage Office and Department of Urban Affairs & Planning 1996, revised 2002)

The following aspects of the project respect or enhance the heritage significance of the item or conservation area for the following reasons:

- Avoidance of impact to significant building or landscape fabric of *State Abattoir heritage conservation area* (SEPP (PCRC) Area No. 1) and *State Abattoir locality* (SEPP (PCRC) Items No. 1 & 2) through containment of project site to existing road alignments
- Containment of the project site to existing electricity easement and avoiding significant built fabric or conservation landscapes within *Millennium Parkland Heritage Precinct* (SEPP (PCRC) Item No. A)
- Retention of the existing wide street alignment of Grand Avenue, which is demonstrative of the former tramway line, *Tram alignment* (Parramatta LEP Item No. I6)
- Avoidance of significant fabric associated with *Ermington Wharf* (Parramatta LEP Item No. I82); *Wharf* (Ryde LEP Item No. I64); *Former Pennant Hills Wharf* (SEPP (BC) Item No. 40)
- The optioneering and definition design for the bridge between Camellia and Rydalmere was able to reduce direct impacts to *Wetlands* (Parramatta LEP Item No. I1) through making use of natural gaps in mangrove vegetation, where possible. The use of temporary work platforms during construction would also create an elevated work area above the mangroves to limit the areas to be disturbed during construction.
- Retention of significant building fabric of the main house (Willowmere) of *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) and providing ability to view the house once again from two street frontages, as originally designed by the architect
- Provision of public open space around the residual heritage complex of *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64), which is demonstrative of the former nursery.
- Avoidance of impact to heritage curtilage of:
 - *Newington Armament Depot and Nature Reserve* (SHR No. 01850)
 - *Sewage Pumping Station 67* (SHR No. 01643, SHI No. Parramatta LEP Item No. I01643)
 - *Olympic Cauldron at Sydney Olympic Park* (SHR No. 01839)
 - *St John's Anglican Cathedral* (SHR No. 01805, Parramatta LEP Item No. I01805)
 - *Pumping Station* (Parramatta LEP Item No. I5)
 - *Rose Farm House* (Parramatta LEP Item No. I63)
 - *Well* (Parramatta LEP Item No. I74)
 - *Parramatta Town Hall (and potential archaeological site)* (Parramatta LEP Item No. I650)
 - *Bicentennial Square and adjoining buildings* (Parramatta LEP Item No. I651)
 - *Murrays' Building (and potential archaeological site)* (Parramatta LEP Item No. I652)
 - *Warden's cottage (verger's cottage)* (Parramatta LEP Item No. I653)
 - *Centennial Memorial Clock* (Parramatta LEP Item No. I654)
 - *Shop (and potential archaeological site)* (Parramatta LEP Item No. I655)
 - *Horse parapet façade and potential archaeological site* (Parramatta LEP Item No. I656)
 - *Telstra House (former post office) (and potential archaeological site)* (Parramatta LEP Item No. I657)
 - *HMV (former Commonwealth Bank) (and potential archaeological site)* (Parramatta LEP Item No. I658)
 - *St John's Parish Hall* (Parramatta LEP Item No. I713)

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- House at 69 South Street, Rydalmere (potential heritage item)
- House at 71 South Street, Rydalmere (potential heritage item)
- House at 67 Boronia Street, Ermington (potential heritage item).

The following aspects of the project could detrimentally impact on heritage significance. The reasons are explained as well as the measures taken to minimise impacts:

- The bridge between Melrose Park to Wentworth Point would have a direct impact on *Millennium Parklands Heritage Precinct* (SEPP (PCRC Area No. 1) through placement of the bridge structures and alignment within the heritage curtilage. Impact to *Millennium Parklands Heritage Precinct* has been mitigated to some degree through placement of the alignment beneath an existing electricity easement located within the exiting heritage curtilage.
- The bridge between Camellia to Rydalmere and between Melrose Park to Wentworth Point would have a direct impact on *Wetlands* (Parramatta LEP Item No. 1) through placement of bridge footings within the heritage curtilage. Potential indirect impacts include erosion and sedimentation, and mobilisation of contaminants as outlined in Technical Paper 9 (Biodiversity Development Assessment Report). This impact has been mitigated to some degree through the engineering design development process which made use of natural gaps in mangrove vegetation. The use of temporary work platforms during construction would also create an elevated work area above the mangroves to limit the areas to be disturbed during construction.
- Realignment and widening of Grand Avenue southwards to facilitate the alignment along Grand Avenue may require removal of remnant tram tracks associated with *Tram alignment* (Parramatta LEP Item No. I6) at the eastern end of Grand Avenue. This impact has been mitigated to some degree through the retention of the wide street alignment of Grand Avenue, which is demonstrative of the former tramway alignment. Retention of the tram tracks *in situ*, either below the new road surface or level with the new road surface and heritage interpretation have been recommended as additional mitigation measures.
- Location of the alignment in relation to *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) requires the removal of significant plantings and setting, potential removal of significant fabric and reduction of its heritage curtilage. Proposed works may also necessitate a change in use of the building, further impacting its heritage significance.
- Impact has been mitigated to some degree to *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) through the retention of the main house structure (Willowmere) by extending the light rail alignment to the south to provide greater clearance (also see next section for more details on alignment options considered). Impact has been further mitigated by a commitment to establishing open space around the heritage item, indicative of the former nursery setting, with options being explored for the relocation of significant plantings of both high and moderate significance to a suitable location within the surrounding residual open space. In addition, green track would be installed in this area, providing soft landscaping which would further mitigate visual impact to the setting.
- Recommendations have been made for design refinement to retain significant heritage fabric and selected plantings *in situ*, create sympathetic open space around the residual heritage complex, and use sympathetic light rail infrastructure design and placement to further mitigate this impact. Protection of significant fabric during works, archival recording of the heritage item, adaptive re-use and heritage interpretation have been recommended as additional mitigation measures. An arboricultural impact assessment has also been recommended to determine the feasibility of moving the significant species, of both high and moderate significance, impacted by the project where retention *in situ* is not possible.
- Reduction of property boundary and alterations to existing setting (including fencing and landscape plantings) of *House at 46 John Street* (potential heritage item). Recommendations have been made for design refinement to avoid property size reduction and impact to the potential heritage item.
- Removal of existing wide easement and introduction of light rail stop infrastructure immediately adjacent to potential heritage items at 69 and 71 South Street would have a moderate adverse visual impact on their setting. This impact may be mitigated to some degree through the design development process by sympathetic light rail infrastructure design and placement.

The following sympathetic solutions have been considered and discounted for the following reasons:

- Directing the alignment along Hope Street to the north of *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) was considered. However, this option would have required construction of the light rail in close proximity to the main house structure (Willowmere) risking adverse impacts (including potential demolition) and a lost opportunity for adaptive reuse. It was also not possible to locate the alignment further north in the road reserve to provide a greater clearance to the main house building due to the presence of major underground water utilities. This option also required alterations to road configurations and impacts to property access along the northern side of Hope Street. These issues have been resolved with the current proposed alignment which provides greater clearance to significant fabric of the main house structure (Willowmere) ensuring its retention and proposed adaptive reuse.

8 RECOMMENDATIONS

The following mitigation measures are recommended to ensure that the project would not cause any further impact to heritage items than outlined in this report. Failure to implement these measures may result in additional or inadvertent impact to heritage.

Recommendation 1: Design refinement

The design development process should refine and aim to further minimise the impact of the project, with particular reference to:

- a. Changes to the proposed alignment shall be considerate of identified heritage items contained in this report, where the preferred alignment must respond to the following key principals in order of precedence within each design report:
 - Avoid – avoid impact, in whole or part, to retain heritage values by considering option in alignment and design, where demonstrated as reasonable and feasible.
 - Mitigate – where impact occurs, mitigate the affect to preserve heritage significance to the fullest extent possible, where demonstrated as reasonable and feasible and in consultation with a suitably qualified heritage consultant.
 - Manage – manage the impacts to preserve heritage fabric through preparation of archival records.
- b. The bridges between Camellia and Rydalmere and between Melrose Park and Wentworth Point shall be subject to design refinement that considers the use of appropriate form, proportion and materials in consultation with a suitably qualified Bridge Architect, where direct and/or indirect heritage impact may occur. Regardless of heritage impact status, bulk in the bridge design should be minimised, and where appropriate, the design should also respond to the surrounding landscape as per recommendations in Technical Paper 1 (Design, Place and Movement).
- c. Avoiding property size reduction of potential and listed heritage items, where possible. The project design should aim to minimise impact to the settings of potential and listed heritage items, as identified in this report, through retention of existing heritage curtilages and property boundaries.
- d. Light rail infrastructure, including stops, should be designed to remain non-obtrusive with limited bulk and consideration of wireless track and grass track to minimise visual impact on heritage items in the vicinity and to respect the surrounding landscape of the route. Form, fabric and palette should respond to place and context, and respect the heritage values of the area. Placement of light rail stops in front of potential and listed heritage items should be avoided.
- e. The residual land / open space strategy for the Atkins Road stop should consider sympathetic open space design with reference to *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64) and the former Swane Brothers Enterprise Nursery.
- f. A heritage architect should be consulted throughout design refinement in relation to *Bulla Cream Dairy* (Willowmere), and a condition assessment conducted of the heritage item.
- g. Each design phase should consider heritage interpretation (Recommendation 2) with the aim that as many reasonable and feasible recommendations are incorporated into the design as possible.
- h. Designs for the realignment and resurfacing of Grand Avenue should consider the retention of the tram tracks *in situ*, either below the new road surface or level with the new road surface.

Recommendation 2: Heritage interpretation

- a. A Heritage Interpretation Strategy should be formulated for the project and implemented in accordance with the Heritage NSW, *Interpreting Heritage Places and Items* (Heritage Office (former) 2005). This is to be undertaken with the consent and co-operation of authorised owners or land managers as well as Sydney Olympic Park Authority, City of Parramatta Council and City of Ryde Council.
- b. Heritage interpretation should communicate the history of the suburbs around the project site, with reference to identified heritage items and potential heritage items, and enable audiences to engage with the significance of these places and the wider Parramatta River cultural landscape.

- c. The Heritage Interpretation Strategy should address heritage interpretation for heritage as a whole and incorporate any interpretation recommendations in Technical Paper 4 (Preliminary Aboriginal Cultural Heritage Assessment Report) and Technical Paper 6 (Historical Archaeological Assessment).
- d. The Heritage Interpretation Strategy should be prepared prior to the design development process to allow heritage interpretation to feed into the design process. A Heritage Interpretation Plan should then be prepared for the final project design including relevant detail to support delivery of the design and its content. Heritage interpretation should be incorporated into design elements through architectural references, design features, and communication panels.

Recommendation 3: Protection and management of significant trees

A qualified arborist should be engaged to undertake an Arboricultural Impact Assessment of plantings of high (significant species) and moderate (contributory species) significance associated with *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64). The Arboricultural Impact Assessment should assess both the feasibility of retaining the plantings in situ and, where that is not possible, their potential relocation. Management and protection measures recommended in the Arboricultural Impact Assessment should be implemented accordingly to ensure the protection and management of significant trees throughout the implementation of the project.

Recommendation 4: Protection and management of visual setting

Recommendations made within Technical Paper 1 (Design, Place and Movement) for the following heritage items should be implemented accordingly to ensure the protection and management of these heritage items throughout the construction and operation of the project:

- *Newington Armament Depot and Nature Reserve* (SHR No.01850)
- *Millennium Parklands Heritage Precinct* (SEPP (PCRC) Item A)
- *Ermington Wharf* (Parramatta LEP Item No. I82) / *Wharf* (Ryde LEP 2014 Item No. 165) / *Former Pennant Hills Wharf* (SEPP (BC) Item No.40)
- *Wetlands* (Parramatta LEP Item No. I1)
- *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64).

Recommendation 5: Management of vibration levels on listed and potential heritage items during construction

Recommendations made within Technical Paper 3 (Noise and Vibration) for the following heritage items should be implemented accordingly to ensure the protection and management of these heritage items throughout the construction of the project:

- *Sewage Pumping Station 67* (SHR No. 01643, SHI No. 4571724, Parramatta LEP Item No. I01643)
- *State Abattoir heritage conservation area* (SEPP(PCRC) Area No. 1) and *State Abattoir locality* (SEPP (PCRC) Items No. 1 & 2)
- *Ermington Wharf* (Parramatta LEP Item No. I82) / *Wharf* (Ryde LEP 2014 Item No. 165) / *Former Pennant Hills Wharf* (SEPP (BC) Item No.40)
- *Pumping Station* (Parramatta LEP Item No. I5)
- *Tram alignment* (Parramatta LEP Item No. I6)
- *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64)
- *Bicentennial Square and adjoining buildings* (Parramatta LEP Item No. I651)
- *Murrays' Building (and potential archaeological site)* (Parramatta LEP Item No. I652)
- *Centennial Memorial Clock* (Parramatta LEP Item No. I654)
- *Shop (and potential archaeological site)* (Parramatta LEP Item No. I655)
- *Horse parapet façade and potential archaeological site* (Parramatta LEP Item No. I656)

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- *Telstra House (former post office) (and potential archaeological site)* (Parramatta LEP Item No. I657)
- *St John's Parish Hall* (Parramatta LEP Item No. I713)
- House at 46 John Street, Rydalmere (potential heritage item)
- House at 69 South Street, Rydalmere (potential heritage item)
- House at 71 South Street, Rydalmere (potential heritage item)
- House at 67 Boronia Street, Ermington (potential heritage item).

Recommendation 6: Protection and management of historical archaeology

If recommendations are made within Technical Paper 6 (Historical Archaeological Assessment) for the following heritage items, these should be implemented accordingly to ensure the protection and management of any archaeological resources associated with these heritage items throughout the construction of the project:

- *St John's Anglican Cathedral* (SHR No. 01805, Parramatta LEP Item No. I01805)
- *Ermington Wharf* (Parramatta LEP Item No. I82) / *Wharf* (Ryde LEP 2014 Item No. 165) / *Former Pennant Hills Wharf* (SEPP (BC) Item No.40)
- *Tram alignment* (Parramatta LEP Item No. I6)
- *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64)
- *Parramatta Town Hall (and potential archaeological site)* (Parramatta LEP Item No. I650)
- *Murrays' Building (and potential archaeological site)* (Parramatta LEP Item No. I652)
- *Shop (and potential archaeological site)* (Parramatta LEP Item No. I655)
- *Horse parapet façade and potential archaeological site* (Parramatta LEP Item No. I656)
- *Telstra House (former post office) (and potential archaeological site)* (Parramatta LEP Item No. I657)
- *HMV (former Commonwealth Bank) (and potential archaeological site)* (Parramatta LEP Item No. I658).

Recommendation 7: Protection and management of wetlands

Recommendations made within Technical Paper 9 (Biodiversity Development Assessment Report) for *Wetlands* (Parramatta LEP Item No. I1) and *Millennium Parklands Heritage Precinct* (SEPP (PCRC) Item No. A) should be implemented accordingly to ensure the protection and management of the heritage item throughout the construction and operation of the project.

Recommendation 8: Archival photographic recording

Prior to construction, an archival photographic recording of the heritage items impacted by the project is to be prepared in accordance with the NSW Heritage Division of the Department of Environment and Heritage guidelines titled "*Photographic Recording of Heritage Items using Film or Digital Capture*". The photographic should be prepared by a heritage consultant and must document significant heritage elements and items that would be impacted by the project. The record should also document significant views and vistas as selected by the heritage consultant.

The archival recording should include, but is not limited to, the following:

- *Bulla Cream Dairy* (Willowmere) (Parramatta LEP Item No. I64)
- *House at 46 John Street, Rydalmere* (potential heritage item).

Where impact is avoided, archival recording is not required.

Recommendation 9: Heritage Management Plan

A Heritage Management Plan (HMP) should be prepared as part of the Construction Environmental Management Plan (CEMP) in consultation with Heritage NSW. Specific measures would be identified in

consultation with a qualified heritage specialist. The objectives and strategies of the sub-plan in relation to built heritage would include the following:

- minimise impacts on items or places of heritage value
- details on management measures to be implemented to prevent and minimise impacts on heritage items (including archival recordings and/or measures to protect unaffected sites during construction works in the vicinity)
- procedures for the reinstatement of areas of heritage value that would be temporarily impacted by construction following the completion of construction
- heritage monitoring and auditing requirements.

Recommendation 10: Non-Aboriginal heritage awareness training

- a. Works are being undertaken in an area of heritage significance. Prior to works commencing, contractors shall be briefed as to the sensitive nature of the project site and informed of any recommended mitigation measures or controls required.
- b. Non-Aboriginal heritage awareness training must be provided for all contractors and personnel prior to commencement of works to outline the identification of heritage items and associated procedures to be implemented in the event of the discovery of non-Aboriginal heritage materials, features or deposits (that is, unexpected finds), or the discovery of human remains.

Recommendation 11: Protection of significant fabric for listed heritage items

Works should be undertaken with care. To avoid impact to significant fabric during the construction of the project, it is recommended:

- a. *State Abattoir heritage conservation area* (SEPP (PCRC) Area No. 1) and *State Abattoir locality* (SEPP (PCRC) Items No. 1 & 2)
 - i. Machinery should be placed with sufficient clearance to significant heritage structures to avoid any inadvertent harm to significant fabric.
 - ii. Follow recommendations in Technical Paper 3 (Noise and Vibration).
- b. *Bulla Cream Dairy (Willowmere)* (Parramatta LEP Item No. I64)
 - iii. Machinery should be placed with sufficient clearance to significant heritage structures to avoid any inadvertent harm to significant fabric.
 - iv. Follow recommendations in Technical Paper 3 (Noise and Vibration).
 - v. Prior to the commencement of, and throughout works, protective barriers or temporary fencing should be erected around Willowmere main house and associated structures of heritage significance to ensure no inadvertent harm occurs.

Recommendation 12: Adaptive re-use

Adaptive reuse options for *Bulla Cream Dairy (Willowmere)* (Parramatta LEP Item No. I64) should be investigated and implemented in accordance with *New Uses for Heritage Places: Guidelines for the Adaptation of Historic Buildings and Sites* (Heritage Council of NSW & Royal Australian Institute of Architects NSW Chapter, 2008). This is to be undertaken with the consent and co-operation of authorised owners or land managers as well as City of Parramatta Council.

Future use of the site should give consideration opportunities highlighted in Technical Paper 1 (Design, Place and Movement), and to the recommendations and opportunities identified in *Willowmere, 64 Hughes Avenue, Ermington Assessment of Cultural Significance* (LSJP 2018), in particular:

- restoring the main house to its original configuration
- renaming the heritage item, Willowmere
- re-establish the garden based on evidence of its early configuration or introduction of an early twentieth century planting scheme typically available from the Swane Brothers Nursery of the period

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- conserving the house and garden as part of open space / public park
- incorporate the property into interpretation of the history of Ermington and surrounds, using it as a key agricultural / cultivation locality for orchards, plant nurseries and fruit growers
- connect the place to existing natural and cultural heritage sites including the Parramatta River, adjacent parkland, Ermington Wharf, Marsden's grant boundaries, Brush Farm and existing trails that demonstrate a related historical context such as that at Wharf Road near Ermington Wharf.

Recommendation 13: Further assessment required for any design modification

If the proposed works, or project site, are modified to those discussed in this report, additional heritage advice may be required to appropriately manage and mitigate any potential impacts caused by these changes.

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