

Appendix I Technical Paper: Statement of Heritage Impact (non-maritime)



Barangaroo Ferry Hub

Statement of Heritage Impact

Prepared by:

RPS

Level 9, 17 York Street
Sydney NSW 2000

T: +61 2 8270 8300
F: +61 2 8270 8399
E: sydney@rpsgroup.com.au

Client Manager: Nick Johnson
Report Number: PR122512
Version / Date: Final, November 2014

Prepared for:

TRANSPORT FOR NSW

PO Box K659
Haymarket NSW 1240

T: +61 2 8202 2200
F: +61 2 8202 2209

IMPORTANT NOTE

Apart from fair dealing for the purposes of private study, research, criticism, or review as permitted under the Copyright Act, no part of this report, its attachments or appendices may be reproduced by any process without the written consent of RPS. All enquiries should be directed to RPS.

We have prepared this report for the sole purposes of Transport for NSW ("**Client**") for the specific purpose of only for which it is supplied ("**Purpose**"). This report is strictly limited to the purpose and the facts and matters stated in it and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter.

In preparing this report we have made certain assumptions. We have assumed that all information and documents provided to us by the Client or as a result of a specific request or enquiry were complete, accurate and up-to-date. Where we have obtained information from a government register or database, we have assumed that the information is accurate. Where an assumption has been made, we have not made any independent investigations with respect to the matters the subject of that assumption. We are not aware of any reason why any of the assumptions are incorrect.

This report is presented without the assumption of a duty of care to any other person (other than the Client) ("**Third Party**"). The report may not contain sufficient information for the purposes of a Third Party or for other uses. Without the prior written consent of RPS:

- (a) this report may not be relied on by a Third Party; and
- (b) RPS will not be liable to a Third Party for any loss, damage, liability or claim arising out of or incidental to a Third Party publishing, using or relying on the facts, content, opinions or subject matter contained in this report.

If a Third Party uses or relies on the facts, content, opinions or subject matter contained in this report with or without the consent of RPS, RPS disclaims all risk and the Third Party assumes all risk and releases and indemnifies and agrees to keep indemnified RPS from any loss, damage, claim or liability arising directly or indirectly from the use of or reliance on this report.

In this note, a reference to loss and damage includes past and prospective economic loss, loss of profits, damage to property, injury to any person (including death) costs and expenses incurred in taking measures to prevent, mitigate or rectify any harm, loss of opportunity, legal costs, compensation, interest and any other direct, indirect, consequential or financial or other loss.

Document Status

Version	Purpose of Document	Orig	Review	Review Date
Draft	Draft for client comment	D. Farina	E. Williams	25/08/2014
Rev A	Revised following client's initial comments	D. Farina	E. Williams	29/08/2014
Rev B	Revised following receipt of ArchaeoMar maritime archaeological report	D. Farina	E. Williams	23/09/2014
Final	Revised following receipt of comments from TfNSW	D. Farina	E. Williams	15/10/2014
Final	Revised following receipt of revised project description, plans and montages	D. Farina	E. Williams	23/10/2014
Final	Revised following receipt of additional comments from TfNSW	D. Farina	E. Williams	17/11/2014

Approval for Issue

Name	Signature	Date
Erin Williams		17/11/2014

Contents

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	4
1.1 Project area.....	4
1.2 Proposed activity	4
1.2.1 Background.....	4
1.2.2 The proposal.....	5
1.3 Methodology.....	9
1.4 Limitations	9
1.5 Authorship	9
2.0 HERITAGE SIGNIFICANCE ASSESSMENT FRAMEWORK.....	12
2.1 Basis of assessment of heritage significance in New South Wales.....	12
2.1.1 <i>Environmental Planning and Assessment Act 1979</i>	12
2.1.2 <i>Heritage Act 1977</i>	14
2.1.3 <i>National Parks and Wildlife Act 1974</i>	15
2.1.4 International convention and soft law	15
2.2 Heritage registers review	17
2.2.2 World heritage	17
2.2.3 National and Commonwealth heritage	17
2.2.4 State heritage	18
2.2.5 Section 170 registers	18
2.2.6 Local heritage	18
2.2.7 Historic shipwrecks and underwater cultural heritage	19
2.0 HISTORICAL CONTEXT	21
2.3 History of the Project Area.....	21
2.3.1 Aboriginal occupation	21
2.3.2 European arrival	21
2.4 Barangaroo today	26
3.0 REVIEW AND ASSESSMENT OF MARINE GEOPHYSICAL DATA.....	27
3.1 Multi-beam sonar data.....	27
3.2 Side-scan sonar data.....	27
4.0 VISUAL INSPECTION	28
4.1 General Physical Context.....	28
4.2 Project Area	29
4.3 Heritage Items Adjoining the Project Area.....	29
4.4 Heritage Items in the Vicinity of the Project Area.....	29
4.5 Diver based visual inspection	29
5.0 STATEMENT OF HERITAGE SIGNIFICANCE.....	31

6.0	STATEMENT OF HERITAGE IMPACT	32
6.1	Impact of Proposed Work on Heritage Significance	32
6.2	Impact of Proposed Work on Adjacent Heritage Items and Places	32
6.3	Visual Impact	32
6.4	Summary of Heritage Impact	33
7.0	MANAGEMENT AND MITIGATION RECOMMENDATIONS	34
8.0	REFERENCES	35

Tables

Table 1 Boundary coordinates of the maritime archaeological study area	4
Table 2 Acknowledgements	10
Table 3 Methodology for including heritage items outside the Project Area in register searches.....	17
Table 4 SHR items in the vicinity of the Project Area.....	18
Table 5 Items on s170 Heritage Registers in the vicinity of the Project Area	18
Table 6 Items of local heritage significance within the vicinity of the Project Area	18
Table 7 Items registered on the Maritime Heritage database	19

Figures

Figure 1 Project area	7
Figure 2 Barangaroo Ferry Hub key proposal features (Indicative only, subject to design development)	11
Figure 3 Heritage Items in the vicinity of the Project Area	20

Plates

Plate 1 Study area for maritime archaeology (Courtesy ArchaeoMar, 2014:15).....	8
Plate 2 Indicative view of Barangaroo Ferry Hub proposal looking north	9
Plate 3 Detail of 1833 City Section Plan map (Courtesy of City of Sydney Archives).	23
Plate 4 Darling Harbour, looking south from Millers Point, 1871 (Courtesy State Library of NSW).....	24
Plate 5 Darling Harbour looking east from Pyrmont, 1870 (Courtesy of NSW State Records).....	24
Plate 6 Darling Harbour looking east from Pyrmont, 1900 (Courtesy NSW State Records).....	25
Plate 7 Looking south toward King Street wharf from Project Area (RPS, 2014)	28
Plate 8 Project Area looking north from entrance from King Street wharf precinct. Barangaroo construction site is to the right of frame. Goat Island is in the centre of frame, with the Balmain Peninsula to the left (RPS, 2014).....	29

Appendices

Appendix 1	Drawings Provided by Transport for New South Wales
------------	--

Executive Summary

RPS has been engaged by Transport for NSW (TfNSW) to prepare a Statement of Heritage Impact for the proposed Barangaroo Ferry Hub at Barangaroo in the Sydney Local Government Area (LGA). Although the Barangaroo Ferry Hub site is not a heritage item, or in a conservation area, it is in the vicinity of a number of State listed heritage items and therefore requires a Statement of Heritage Impact to consider whether the significance of those items would be impacted by the construction of the ferry hub. The Barangaroo Ferry Hub involves the construction and operation of a new ferry interchange comprising three covered wharves located at the southern end of Barangaroo. Initially, two of the three wharves would be constructed. The third wharf would be constructed in the future when the demand for ferry services necessitates.

An analysis of historical sources indicate that the land in the vicinity of the Project Area was occupied by Aboriginal people prior to 1788 and then by Europeans from very shortly after 1788. Wharves were constructed in the area from the early 1800s and the area's use as a port is reflected by the remaining heritage items. A number of phases of maritime infrastructure development and foreshore modification have been identified adjacent to the Project Area, as evidenced by recent archaeological excavations at Barangaroo North (Austral Archaeology 2010) and Barangaroo South (Casey & Lowe 2010). The nature and extent of waterlogged remains particularly at Barangaroo South indicates a high potential for early European archaeological features and deposits to survive underwater.

Historic heritage searches were undertaken on 25 June 2014. The searches revealed that there are no heritage items within the Project Area recorded on the World Heritage List, National Heritage List, Register of the National Estate, Commonwealth Heritage List, State Heritage Register, s170 Heritage and Conservation Registers, Schedule 5 of the *Sydney Local Environmental Plan 2012*, or within the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*. Historic heritage searches identified the following heritage items in the vicinity of the Project Area:

Item	Address	Listing
Sussex Hotel/Big House Hotel	20 Sussex Street, Sydney	State Heritage Register
Pymont Bridge	Darling Harbour	State Heritage Register S170 Heritage Register
South Steyne (S.S.)	Port Jackson	State Heritage Register
Grafton Bond Store and Sandstone Wall	Hickson Road, Millers Point	State Heritage Register S170 Heritage Register Sydney LEP 2012
MSB stores complex	2-4 Jenkins Street, Millers Point	State Heritage Register S170 Heritage Register Sydney LEP 2012
Goat Island	Sydney Harbour	State Heritage Register
Iloura Reserve	Weston Street, Balmain East	State Heritage Register
Warehouses (former Dalgety's Bond Stores)	Munn Street, Millers Point	S170 Heritage Register
Sewage Pumping Station No 13 (SP0013)	Sussex Street	S170 Heritage Register Sydney LEP 2012
Lane off Gas Lane including sandstone walls and wrought iron street light	Jenkins Street, Sydney	Sydney LEP 2012
Trees and sandstone retaining walls (adjacent Napoleon Street)	Sussex Street, Sydney	Sydney LEP 2012
Former "New Hunter River Hotel",	20-26 Sussex Street, Sydney	Sydney LEP 2012

Item	Address	Listing
including interiors		

An assessment of the heritage significance and potential for impact to heritage items indicates that the proposed Barangaroo Ferry Hub would not have an adverse impact on the identified historic heritage items in the vicinity of the Project Area.

Underwater archaeology

Historic shipwreck searches were undertaken by ArchaeoMar on 29 July 2014. The searches confirmed that no historic shipwrecks are recorded within the Project Area. The searches indicated the potential for four, as yet unlocated, historic shipwrecks to be present within the Project Area. All four ships were recorded as having foundered in Darling Harbour, but no position for the sinking or location of the wrecks is available. Eastern Darling Harbour has been the subject of maritime, industrial and infrastructure developments from 1820 to present day and was inhabited by Aboriginal people for some 6,000 years prior to European arrival. The resultant historical and archaeological record implies that the Project Area has a moderate to high archaeological potential.

Marine geophysical survey data was obtained from Sydney Ports and the Australian Defence Science and Technology Organisation (DSTO). Multi-beam sonar data collected by Sydney Ports in November 2013 revealed at least 30 seabed anomalies within the Project Area. These were verified by high quality side-scan sonar data gathered by DSTO in August 2014. The DSTO data indicated at least 30 targets within the Project Area. A diver-based visual inspection was undertaken by ArchaeoMar to ground truth the sonar data in order to determine the nature, extent and identity of the anomalies. The visual inspection confirmed the anomalies to be a variety of geological features, modern navigation and construction aids, and modern debris. The diver based visual inspection revealed that parts of the Project Area had been dredged to bedrock. No items of Aboriginal or European heritage significance were identified during the diver based visual inspection. ArchaeoMar considered that no underwater items of Aboriginal or European heritage significance would be impacted during the proposed works.

Recommendations

The proposed works are appropriate on heritage grounds and should proceed, provided Recommendations 1-5 below are followed:

Recommendation 1 – Heritage management plan

Should any unexpected finds be uncovered during the course of construction, these should be managed as part of the Construction Environment Management Plan (CEMP). The CEMP should include mitigation and management strategies for any unexpected archaeological finds.

Recommendation 2 – Heritage induction

All relevant staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977* and best practice outlined in *The Burra Charter 2013*, which may be implemented as part of the site environmental induction.

Recommendation 3 – Unexpected Aboriginal finds

If unrecorded Aboriginal object/s are identified in the Project Area during works, then all works in the immediate area must cease and the area should be cordoned off. Office of Environment and Heritage (OEH) must be notified by ringing the Enviroline 131 555 so that the site can be adequately assessed and managed.

Recommendation 4 – Unexpected historic finds

If, during the course of development works, suspected historic cultural heritage material is uncovered, work should cease in that area immediately. The Heritage Division, OEH (Enviroline 131 555) should be notified and works only recommence when an approved management strategy has been developed.

Recommendation 5 – Skeletal remains

In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area must be cordoned off. The proponent must contact the local NSW Police who will make an initial assessment as to whether the remains are part of a crime scene or possible Aboriginal remains. If the remains are thought to be Aboriginal, OEH must be contacted by ringing the Enviroline 131 555. An OEH officer will determine if the remains are Aboriginal or not; and a management plan must be developed in consultation with the relevant Aboriginal stakeholders before works recommence.

1.0 Introduction

RPS has been engaged by Transport for NSW (TfNSW) to prepare a Statement of Heritage Impact which considers the impact of the proposed Barangaroo Ferry Hub (the proposal) on the significance of nearby heritage items. Although the Barangaroo Ferry Hub site is not a heritage item, or in a conservation area, it is in the vicinity of a number of State listed heritage items and therefore requires a Statement of Heritage Impact to consider whether the significance of those items would be impacted by the construction of the proposal.

1.1 Project area

This Statement of Heritage Impact has been prepared for the area subject to the proposed activity and herein is referred to as the "Project Area." The Project Area is located at Barangaroo, on the eastern shore of Darling Harbour in the Sydney Local Government Area (LGA). The Project Area is on the western boundary of Sydney's Central Business District (see Figure 1). For the purposes of the maritime archaeological assessment a wider study area was considered (Plate 1). Rectangular in shape, the maritime archaeological study area measures approximately 500 metres long by 175 metres wide and is defined by the coordinates in Table 1. King Street Wharf is located along the southern perimeter of the maritime archaeological study area, and Barangaroo South forms the eastern boundary.

Table 1 Boundary coordinates of the maritime archaeological study area

Coordinate name	Easting	Northing
BFH1	333614.00	6251124.00
BFH2	333471.00	6251101.00
BFH3	333398.00	6251580.00
BFH4	333565.00	6251591.00

1.2 Proposed activity

1.2.1 Background

The need to provide a ferry interchange to support development at Barangaroo was identified in the *Barangaroo Integrated Transport Plan* (BITP), prepared by the Barangaroo Transport Taskforce, in August 2012. The *NSW Long Term Transport Plan*, released in December 2012 identified short and medium to longer term actions related to ferry patronage to support Barangaroo. The medium to longer term option involved building a new ferry hub at Barangaroo to support commercial development, with new services from the Lower North Shore, Manly, Parramatta and inner harbour.

In May 2013, *Sydney's Ferry Future* was released by the NSW Government also identifying that TfNSW would develop a ferry hub at Barangaroo, although a timeframe for delivery was not specified. *Sydney's Ferry Future* also identified that in the longer term, the facility at Barangaroo would relieve capacity constraints at Circular Quay with more terminating services. In December 2013, the *Sydney City Centre Access Strategy* reinforced these actions and also identified the need to connect Barangaroo ferry customers with the western and midtown parts of the city centre via a high quality pedestrian link (the Wynyard Walk, currently under construction).

Since the need for a ferry interchange at Barangaroo was initially identified, TfNSW has been considering design options and carrying out further patronage investigations to determine design parameters for the interchange. TfNSW is aiming to deliver the Barangaroo Ferry Hub as close as possible to the initial stage of occupation of the Barangaroo South development which is currently scheduled for mid to late 2015, to provide high quality public transport options for new residents and building tenants.

The proposal has the following objectives:

- Increase public transport accessibility to the Barangaroo site and western and midtown parts of the city.
- Provide customer benefits of new ferry facilities that consider safety, amenity and comfort for ferry passengers.
- Relieve capacity constraints at Circular Quay ferry terminal.
- Improve resilience of ferry services for special events or maintenance activities elsewhere.

1.2.2 The proposal

The proposal comprises the construction and operation of a ferry hub and would include:

- Establishment of a construction work area and temporary construction compound
- Construction of three new ferry wharves and ancillary landside facilities
- Potential demolition of the King Street Wharf wave baffle
- Site clean-up and opening of the new wharf
- Operation of wharves including ferry layover, pump-out facilities
- Eventual decommissioning and removal of the public transport elements of King Street Ferry Wharf such as ticket vending machines and signage
- Ancillary landside facilities included as part of the proposal would include wayfinding signage and ticketing (including Opal card facilities).

Barangaroo development approval Concept Design Modification 4 (MP06_162 (MOD 4)) has made provision for about 300 square metres of transport related office space. This space is to be delivered by BDA and/or Lend Lease, and therefore does not form part of the proposal.

Telecommunications, electricity, water and sewerage would be available at the foreshore edge. This would also be constructed by Lend Lease as part of the Barangaroo South development. The proposal includes connection into the landside service infrastructure.

It is anticipated that each wharf would be self-supporting and would comprise:

- A prefabricated steel covered pontoon about 38 metres long and 22 metres wide, which includes:
 - two berthing faces on each pontoon
 - ancillary facilities on each wharf to provide for passenger safety, comfort and security and to display ferry service information
 - a roof structure which incorporates a glazed roof light, with a ceiling height of about 3.5 metres above the pontoon surface and 4.5 metres above sea level and an overall roof height of up to about 6.5 metres above sea level.
- A fixed covered link structure (comprising two ramps and a landing) up to about 30 metres long, between 13 metres and 37 metres wide and level with the built quay line (+RL 2.9m) to connect the gangway to the land
- A prefabricated aluminium gangway about 15 metres long and 10 metres wide between the link structure and the pontoon
- Ticket barriers, wayfinding signage, public announcement system (PA system) and Opal ticketing infrastructure
- About 30 piles per wharf including about three restraint piles to secure the position of the pontoon, 11 support piles to support the link structure and crash barrier piles

- Ferry crash barrier comprising piles and cross beam. On the southern side this would be installed adjacent to the sea wall, on the northern side this would be in front of the link structure
- Connection of power, telecommunication and data communications and potable water services (including fire hydrant services)
- A sewage pump-out facility comprising pump, filters, reels, valves, electrical and control facilities. It is anticipated that the pump out facilities would be located in an enclosed space on the link structure and be approximately 3 metres by 2 metres by 1.5 metres in size
- A small gateline 'kiosk' (office) would also be located on the link structure for staff activities (no ticket sales), together with a bin store.

During detailed design and navigational safety planning, the need for fender piles would also be considered, and may potentially require up to eight additional piles per wharf.

Initially only two wharves would be constructed, with the third wharf to be constructed when future demand necessitates.

Landside ancillary facilities included as part of the proposal are likely to include way finding signage and Opal card facilities.

Figure 1 Project area



Plate 1 Study area for maritime archaeology (Courtesy ArchaeoMar, 2014:15).

An overview of the proposal is provided at Figure 2. The indicative design of the Barangaroo Ferry Hub is shown at Plate 2.

Provision for some landside transport related facilities (including 300 square metres of floorspace) have been made in the Barangaroo development approvals Concept Design Modification 4 and therefore those landside elements do not form part of the proposal. Telecommunications, data communications, electricity, water and sewerage would be available at the foreshore edge, and the Project would connect to these services. This would be constructed by the Barangaroo Delivery Authority (BDA) as part of Concept Design Modification 4.



Plate 2 Indicative view of Barangaroo Ferry Hub proposal looking north

1.3 Methodology

This Statement of Heritage Impact has been prepared in accordance with *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter)* (Australia ICOMOS 2013) and associated Guidelines as well as best practice standards set by the NSW Heritage Division of the Office of Environment and Heritage. Best practice guidance followed in this report includes *Assessing Heritage Significance* (Heritage Office (former) 2002) and *Statements of Heritage Impact* (Heritage Office and Department of Urban Affairs and Planning 2002).

This report incorporates the results of ArchaeoMar's marine archaeological desktop study and diver based visual inspection of the Project Area.

1.4 Limitations

This report has not been unduly constrained by any timing or budget constraints relative to its purpose and the questions asked. As is always the case with historic research, it is possible that further investigation will reveal relevant information not presented herein.

1.5 Authorship

This report has been prepared by RPS Cultural Heritage Consultant, Deborah Farina and reviewed by RPS Senior Cultural Heritage Consultant, Erin Williams. Assistance has also been provided by RPS GIS/Draftsperson, Natalie Wood. ArchaeoMar's report was prepared by ArchaeoMar Principal Consultant and Maritime Archaeologist Sarah Ward and was reviewed by Quality Manager Andrew Stanton.

RPS also wishes to acknowledge the assistance of the following people and organisations:

Table 2 Acknowledgements

Person	Organisation
Peter Mangels	RPS
Nick Johnson	RPS
Suzie Rawlinson	Iris Visual Planning + Design
Carolyn McCallig	ARUP
Carolyn Riley	TfNSW
Kate Doherty	TfNSW



Figure 2 Barangaroo Ferry Hub key proposal features (Indicative only, subject to design development)

* Base diagram sourced from Request to Modify Barangaroo Concept Plan MP06_162 MOD 8 available from http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=6124 (TfNSW, 2014)

2.0 Heritage Significance Assessment Framework

2.1 Basis of assessment of heritage significance in New South Wales

The following section provides an overview of the legislative framework relating to the protection and management of historic heritage in New South Wales. This overview is provided solely as information for the client rather than as legal advice. The findings from a review of national, State and local statutory heritage registers are provided in Section 2.2 below.

2.1.1 *Environmental Planning and Assessment Act 1979*

The *Environmental Planning and Assessment Act 1979* (EP&A Act) regulates a system of environmental planning and assessment for NSW. Land use planning requires that environmental impacts are considered, including the impact on cultural heritage. The EP&A Act is supported by the EP&A Regulations (2000) and provides the framework for establishment of a range of environmental planning instruments to regulate land use and guide development. Environmental planning instruments relevant to this assessment include the following:

- *State Environmental Planning Policy (Infrastructure) 2007*.
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment)*.
- *Sydney Harbour Foreshores and Waterways Area Development Control Plan*.

Assessment documents prepared to meet the requirements of the EP&A Act including Reviews of Environmental Factors, Environmental Impact Statements and Environmental Impact Assessments, should address cultural heritage where relevant.

2.1.1.1 State Environmental Planning Policy (Infrastructure) 2007

The aim of the State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) is to facilitate the effective delivery of infrastructure across New South Wales by:

- Improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services.
- Providing greater flexibility in the location of infrastructure and service facilities.
- Allowing for the efficient development, redevelopment or disposal of surplus government owned land.
- Identifying the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development).
- Identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development.
- Providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing.

Part 2, Division 1, Clause 14(2)(a) of the SEPP requires an impact assessment if the proposal is likely to have an impact that is not minor or inconsequential on a local heritage item (other than a local heritage item that is also a State heritage item) or a heritage conservation area.

2.1.1.2 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The intention of the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP) is to establish a balance between promoting a prosperous working harbour, maintaining a healthy and sustainable waterway environment and promoting recreational access to the foreshore and waterways. The SREP provides a clear set of planning principles for submerged land within Sydney Harbour Catchment. From 1 July 2009 this SREP is taken to be a State Environmental Planning Policy. With respect to the Sydney Harbour Catchment, the SREP aims to:

- Ensure that the catchment, foreshores, waterways and islands of Sydney Harbour are recognised, protected, enhanced and maintained.
- Ensure a healthy, sustainable environment on land and water.
- Achieve a high quality and ecologically sustainable urban environment.
- Ensure a prosperous working harbour and an effective transport corridor.
- Encourage a culturally rich and vibrant place for people.
- Ensure accessibility to and along Sydney Harbour and its foreshores.
- Ensure the protection, maintenance and rehabilitation of watercourses, wetlands, riparian lands, remnant vegetation and ecological connectivity.
- Provide a consolidated, simplified and updated legislative framework for future planning.

The SREP zones the waterways into nine different zones to suit the differing environmental characteristics and land uses of the harbour and its tributaries. The waterway which contains the study area is zoned W1 'Maritime Waters' (refer Part 3, Division 1, Clause 16(1)). The objectives of this zone are to:

- Give preference to and protect waters required for the effective and efficient movement of commercial shipping, public water transport and maritime industrial operations generally.
- Allow development only where it is demonstrated that it is compatible with, and will not adversely affect the effective and efficient movement of, commercial shipping, public water transport (the purpose of this study) and maritime industry operations.
- Promote equitable use of the waterway, including use by passive recreation craft.

It is permissible to carry out the development of 'public water transport facilities' in this zone (W1) only with development consent (refer Part 3 Division 1 Clause 18(1)(b)). With regard to heritage, the SREP (Part 5 Division 1 Clause 53(1)) promotes the conservation of environmental heritage (53(1)(a)), heritage significance (53(1)(b)), archaeological sites and places of Aboriginal heritage significance (53(1)(c)) and places which have the potential to have heritage significance but are not identified as heritage items (53(1)(d)).

With development consent, the SREP allows for: the demolition, destruction or alteration of a heritage item (Part 5 Division 1 Clause 55(1)(a)(b)); the disturbance of, or damage to, an Aboriginal heritage place or object of Aboriginal heritage significance (55(1)(c)); and the erection of a building or structure on land on which a heritage item is located (55(1)(d)). Note that the SREP Heritage Map indicates no known heritage items within the Project Area (refer Part 5 Division 1 Clause 54).

Approval for the Barangaroo Ferry Hub will be sought from Department of Planning and Environment under Part 5.1 of the EP&A Act. Part 5.1 specifies that for approved State Significant Infrastructure (SSI) authorisations under Part 4, or an excavation permit under s139, of the *Heritage Act 1977* are not required (s115ZG(1)(c)), an Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974, is not required (s115ZG(1)(d)) and under (s115ZG(2)) Part 6 Division 8 of the *Heritage Act 1977* does

not apply. Development approval under Part 5.1 of the EP&A Act effectively switches off the *Heritage Act 1977*.

2.1.2 *Heritage Act 1977*

The *Heritage Act 1977* administered by the Heritage Division of the Office of Environment and Heritage, Department of Planning and Environment, protects the cultural and natural history of New South Wales with emphasis on historic heritage items (such as place, building, works, relic, moveable object, precinct, historic shipwreck or archaeological site) of state or local significance, through protection provisions and the establishment of a Heritage Council and State Heritage Register.

Division 9 of the *Heritage Act 1977* is titled 'Protection of certain relics' and s139 also refers to an excavation permit being required in certain cases to 'disturb or excavate land'. A 'relic' is defined under s4(1), as being 'any deposit, artefact, object or material evidence that (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement and (b) is of State or local heritage significance'.

Section 139(1) states that a person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit, whilst s139(2) states a person must not disturb or excavate any land on which the person has discovered or exposed a relic, except in accordance with an excavation permit.

Such permits are issued under Part 4 Division 3 s60 and s63 Part 6 Division 9 s140 and s141 of the Act, or under of the Act, in cases where 'relics' are situated within sites or places listed on the State Heritage Register (SHR). It should be noted that under these conditions, an excavation permit is required for any excavation (such as an excavation for geotechnical investigation), not solely archaeology excavations. Approval under Part 5.1 of the EP&A Act, authorisations' under Part 4 and/or an excavation permit under s139, of the *Heritage Act 1977* are not required.

Where the development is being undertaken under a Division 4.1 State Significant Development or Part 5.1 State Significant Infrastructure process there is no requirement to apply for an s140 approval but there is an expectation that the required archaeological work will conform to best practice established by the Heritage Council and their various guidelines. The Heritage Division will be required to review relevant documentation and provide advice as to whether it is acceptable.

State government agencies have particular responsibilities under s170 of the *Heritage Act 1977*. Section 170 requires agencies to identify, conserve and manage heritage assets owned, occupied or managed by that agency and in doing so, keep a publically accessible register of these heritage items. The register is called a Heritage and Conservation Register or more commonly, the s170 Register.

The *Heritage Act 1977* also protects historic shipwrecks (Part 3C) and associated relics that have been situated in State Waters for 75 years or more, along with historic relics not associated with an historic shipwreck (Part 6), but that may be submerged.

Although Aboriginal heritage is primarily protected by the *National Parks and Wildlife Act 1974* (NPW Act), if an Aboriginal site, object or place is of State significance, it may be protected by an interim heritage order or by virtue of listing on the SHR. Penalties of up to \$1.1 million are in place for breaches of the *Heritage Act 1977* and its Regulations. The *Heritage Act 1977* is effectively 'turned off' by Division 4.1 State Significant Development and Part 5.1 State Significant Infrastructure of the EP&A Act.

The Heritage Council of NSW, constituted under the *Heritage Act 1977*, is appointed by the Minister and is responsible for heritage in NSW. The Council reflects a cross-section of community, government and

conservation expertise with the NSW Heritage Division being the operational arm of the Council. The work of the NSW Heritage Division includes:

- Working with communities to help them identify their important places and objects.
- Providing guidance on how to look after heritage items.
- Supporting community heritage projects through funding and advice.
- Maintaining the New South Wales Heritage Database, an online list of all statutory heritage items in New South Wales.

The 1996 *NSW Heritage Manual*, published by the Heritage Division, then Department of Urban Affairs and Planning, provides guidelines for conducting assessments of heritage significance. The Manual includes specific criteria for addressing the significance of an item and this assessment has been completed in accordance with those guidelines.

2.1.3 National Parks and Wildlife Act 1974

Aboriginal heritage within NSW is predominantly protected by the NPW Act, also administered by the Office of Environment and Heritage, Department of Planning and Environment. The object of the NPW Act is to consolidate and amend the law relating to the establishment, preservation and management of national parks, historic sites (and certain other areas) and the protection of certain fauna, native plants and Aboriginal objects.

- Penalties of up to \$1.1 million apply in the case of companies who do not comply with the legislation.
- Strict liability offences ensure companies or individuals cannot claim 'no knowledge' in cases of serious harm to Aboriginal heritage places and objects.
- Remediation provisions ensure those who illegally harm significant Aboriginal sites are forced to repair the damage, without need for a court order.
- Unification of Aboriginal heritage permits into a single, more flexible permit, the Aboriginal Heritage Impact Permit (AHIP).
- Offences around breaches of AHIP conditions have been strengthened.

The NPW Act provides defences, applicable where a person harms an Aboriginal object without knowing what it was and without a permit from the Office of Environment and Heritage. One of these defences is the 'due diligence' defence (s87 (2)). This states that if a person or company has exercised due diligence to ascertain that no Aboriginal object was likely to be harmed as a result of the activities proposed for the site, then liability from prosecution under the NPW Act will be removed, or mitigated, if it transpires that an object was harmed.

An Aboriginal heritage technical memo, prepared in accordance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW, has been prepared by RPS (2014) for the Barangaroo Ferry Hub proposal. The findings from this report will be included in the Environmental Impact Statement for the proposal.

2.1.4 International convention and soft law

2.1.4.1 [The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 2013](#)

The *Burra Charter* is a set of best practice principles and procedures for heritage conservation. It was developed by Australia ICOMOS (International Council for Monuments and Sites), the Australian group of the international professional organisation for conservation. Although without statutory weight, the *Burra Charter* underpins heritage management in New South Wales (NSW) and Australia. The policies and guidelines of

the Heritage Council of NSW and the NSW Heritage Office are consistent with and guided by the *Burra Charter*.

2.1.4.2 UNESCO Convention on the Protection of Underwater Cultural Heritage 2001

The United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention on the Protection of the Underwater Cultural Heritage 2001 (the 'convention'), entered into force on 2 January 2009. The convention is designed to protect 'underwater cultural heritage' defined as 'all traces of human existence having a cultural, historical or archaeological character which have been partially or totally under water, periodically or continuously, for at least 100 years such as:

- Sites, structures, buildings, artefacts and human remains, together with their archaeological and natural context.
- Vessels, aircraft, other vehicles or any part thereof, their cargo or other contents, together with their archaeological and natural context.
- Objects of prehistoric character (UNESCO 2001: 2; O'Keefe and Prott: 2011: 135).

At the time of writing, Australia had not ratified the convention. Australia has however indicated that it is actively considering ratification. As a result of this consideration, a review of the *Commonwealth Historic Shipwrecks Act 1976* has been undertaken (this legislation does not apply to inland waterways which are the jurisdiction of the States) and the Commonwealth has implemented an Inter-Governmental Agreement (IGA) between the States and the Commonwealth.

The intent of this IGA is to clarify the roles and responsibilities the Commonwealth, States and the Northern Territory jurisdictions in relation to the management of Australia's underwater cultural heritage and meet international best practice management of Australia's underwater cultural heritage as outlined in the Rules in the Annex to the convention (Commonwealth of Australia 2010:2). A whole-of-government response was obtained from NSW and it acceded to the agreement on 5 July 2010.

Although Australia is not a state party to the convention, NSW (by acceding to the IGA) has agreed to the terms of the convention and the rules contained in its Annex. On 2 August 2006, the Heritage Council of NSW endorsed the Annex to the convention (UNESCO 2001: 16-21; O'Keefe and Prott: 2011:143-146) as a doctrine best practice, recognising and endorsing the general principles of the convention as a key policy document that underpins its own policies for the conservation of underwater cultural heritage items in NSW (Heritage Council 2006: 5).

In short, this means that any matters directed at, or incidentally affecting shipwrecks and underwater cultural heritage and which require heritage council approval, must be carried out in accordance with the 'rules' concerning activities directed at underwater cultural heritage, as referred to in Article 33 of the convention (refer Article 1(9)) (UNESCO 2001: 3,15,16-21, O'Keefe and Prott: 2011:136, 143-146).

Article 5 of the convention 'activities incidentally affecting underwater cultural heritage' stipulates that each state party to the convention is required to use the 'best practicable means at its disposal' to prevent or mitigate any adverse effects that might arise from activities under its jurisdiction (i.e. under its control) and incidentally affect underwater cultural heritage (UNESCO 2001: 4; O'Keefe and Prott: 2011:136) and Rule 12 states that 'where unexpected discoveries are made or circumstances change, the project design shall be reviewed and amended with the approval of the competent authorities' (UNESCO 2001: 18; O'Keefe and Prott: 2011:144). NSW has agreed to abide by these rules.

It should be noted that - even if they have been in situ underwater for 100 years or more - pipelines and cables placed on the seabed shall not be considered as underwater cultural heritage. Likewise, installations other than pipelines and cables, placed on the seabed and still in use shall not be considered as underwater

cultural heritage (UNESCO 200: 2; O’Keefe and Prott: 2011: 135). Submerged historic maritime infrastructure, such as that potentially within the study area, does fall within in the remit of the convention, its annexe and NSW’s IGA commitments.

2.2 Heritage registers review

Acknowledged heritage items and places are recorded in statutory and non-statutory registers held at the Federal, State and local level depending on their level of significance. Internationally significant sites of ‘outstanding universal value’ are inscribed in the World Heritage List (WHL) and in turn, such sites are usually recognised through their inclusion on Federal and State-level registers.

Federal designations include the National Heritage List (NHL) and the Commonwealth Heritage List (CHL) created by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Both registers are maintained by the Department of the Environment and are available to view on an online database, the Australian Heritage Database. The NHL includes natural, historic and Indigenous places that are of outstanding national heritage value to the Australian nation. The CHL protects natural, Indigenous and historic heritage places on land owned or leased by the Commonwealth or a Commonwealth Authority. To reach the threshold for the NHL, a place must have ‘outstanding’ heritage value to the nation whereas to be entered on the CHL, a place must have ‘significant’ heritage value.

Heritage places of state significance are included on the SHR maintained by the Heritage Division of the Office of Environment and Heritage (OEH). In order to reach the threshold for inclusion in the SHR, a place needs to meet one of more of the heritage criteria identified by the Heritage Council of NSW. The ultimate decision on whether a place is included on the SHR is made by the Minister for Heritage.

Section 170 of the *Heritage Act 1977* requires State Government Agencies to keep records of heritage items owned or operated by them. These registers can be found on the NSW Heritage Inventory. Places of local significance are included in heritage schedules in Local Environmental Plans (LEPs).

Searches of the relevant databases were undertaken on 25 June 2014 and focussed on the Project Area and areas in the vicinity. The methodology for inclusion of additional items outside the Project Area (referred to as “in the vicinity” of the Project Area) varied according to the significance of the heritage and is outlined in Table 3.

Table 3 Methodology for including heritage items outside the Project Area in register searches

Heritage Significance	Inclusion
State	All items within line of sight of the Barangaroo Ferry Hub. Some State heritage items along Sydney Harbour foreshores rely on their location as part of their heritage significance; Visual impacts may therefore need to be assessed
Section 170 Register	Items bordering the Barangaroo site
Local	Arbitrary 200 m - 250 m radius

2.2.2 World heritage

A search of the Australian Heritage Database on 25 June 2014 showed that there are **no World Heritage Sites** (‘WHS’) located in the vicinity of the Project Area.

2.2.3 National and Commonwealth heritage

A search of the Australian Heritage Database was carried out on 25 June 2014 which indicates that there are **no items in the vicinity of the Project Area included on the NHL or CHL**.

2.2.4 State heritage

A search of the SHR Heritage Register on 25 June 2014 found seven items included on the SHR in the vicinity of the Project Area and no items subject to an interim, or authorised interim heritage order (Table 4).

Table 4 SHR items in the vicinity of the Project Area

Item	Address	Approximate distance from Project Area
Sussex Hotel/Big House Hotel	20 Sussex Street, Sydney	200 metres east
Pymont Bridge	Darling Harbour	590 metres south west
South Steyne (S.S.)	Port Jackson	600 metres south west
Grafton Bond Store and Sandstone Wall	Hickson Road, Millers Point	200 metres east
MSB stores complex	2-4 Jenkins Street, Millers Point	230 metres east
Goat Island	Sydney Harbour	1.1 kilometres north west
Iloura Reserve	Weston Street, Balmain East	509 metres north west

2.2.5 Section 170 registers

A search of the NSW Heritage Inventory was carried out on 25 June 2014 and five Section 170 (s170) heritage items were identified as being located in the vicinity of the Project Area (Table 5).

Table 5 Items on s170 Heritage Registers in the vicinity of the Project Area

Item	Address	State Government Agency	Approximate distance from Project Area
Pymont Bridge	Darling Harbour	Sydney Harbour Foreshore Authority	590 metres south west
Grafton Bond Store and sandstone wall	Hickson Road, Millers Point	Roads and Maritime Services	200 metres east
MSB Stores Complex	2-4 Jenkins Street (aka 38 Hickson Road), Millers Point	Roads and Maritime Services	230 metres east
Warehouses (former Dalgety's Bond Stores)	Munn Street, Millers Point	Roads and Maritime Services	490 metres north
Sewage Pumping Station No 13 (SP0013)	Sussex Street	Sydney Water	170 metres east

2.2.6 Local heritage

A search of Schedule 5 of the Sydney LEP 2012 on 25 June 2014 identified six items of local heritage within the vicinity of the Project Area (Table 6).

Table 6 Items of local heritage significance within the vicinity of the Project Area

Item	Address	LEP Item Number	Approximate distance from Project Area
Former MSB Stores, including interior	36 Hickson Road, Sydney	I880	200 metres east
Lane off Gas Lane including sandstone walls and wrought iron street light	Jenkins Street, Sydney	I890	230 metres east
Former Grafton Bond Store, including interiors	201-217 Kent Street, Sydney	I1813	200 metres east
Trees and sandstone retaining walls (adjacent	Sussex Street, Sydney	I1952	200 metres east

Item	Address	LEP Item Number	Approximate distance from Project Area
Napoleon Street)			
Former "New Hunter River Hotel", including interiors	20-26 Sussex Street, Sydney	I1953	200 metres east
Former MWS&B Pumping Station	21-25 Sussex Street, Sydney	I1954	170 metres east

2.2.7 Historic shipwrecks and underwater cultural heritage

Historic shipwrecks more than 75 years of age in enclosed waters within NSW are protected by Part 3C of the *Heritage Act 1977*. A search of the NSW Maritime Heritage Online - the statutory database of Historic Shipwrecks in NSW - indicated that 80 shipwrecks are known to exist in the main Sydney Harbour area however **none are known to be located within the Project Area or the maritime archaeology study area.**

Two items are listed, however, on the opposite shore of Darling Harbour. These are identified in Table 7.

Table 7 Items registered on the Maritime Heritage database

Item	Location
Australian National Maritime Museum	Wharf 7, Off Pirrama Road, Pyrmont Bay
Sydney Heritage Fleet	Wharf 7, Pirrama Road, Pyrmont Bay

Both of these items are located on the western shore of Darling Harbour, with the Australian National Maritime Museum located approximately 350 metres south west of the current Project Area, and the Sydney Heritage Fleet are located at various locations on the western shore between 260 metres – 460 metres south west of the Project Area. Neither of these items would be impacted by the proposed works.

In their report, ArchaeoMar provided details of the following Historic shipwrecks in Darling Harbour (ArchaeoMar 2014:42):

Ship	Where lost	When	Heritage listing
<i>Omeo</i>	Darling Harbour near Bathurst Street	1899	<i>Heritage Act 1977</i>
<i>Orphan Girl</i>	Darling Harbour	1880	<i>Heritage Act 1977</i>
<i>Sterling</i>	Darling Harbour near Federal Wharf	1919	<i>Heritage Act 1977</i>
<i>William Woolley</i>	Darling Harbour	1854	<i>Heritage Act 1977</i>

ArchaeoMar states that the locations of these vessels are unknown but are known to have gone down in Darling Harbour.

It should also be noted that several other historic shipwrecks are known to be located in Sydney Harbour; however, their exact locations are currently unknown. These include the *Native* (1850), *Robert Saywers* (1854), *Gem* (1880), *Cadet* (1912), *Esther* (1920), *Rodney* (1938), *Siesta* (1942), *Nereus* (1942), *Silver Cloud* (1942) and *Marlean* (1944). However, given the amount of dredging throughout Sydney Harbour, movement of sediment caused by intensive shipping in addition to natural tidal movement, it is considered highly unlikely that any historic shipwrecks remain submerged or buried within the Barangaroo Ferry Hub Project Area. There is subsequently an extremely low risk of impact to historic shipwreck material, as previous dredging would have ensured that the location is clear of historic material.

Figure 3 Heritage Items in the vicinity of the Project Area

3.0 Historical Context

A number of heritage reports have been prepared for the landside development of Barangaroo, including the following:

- Austral Archaeology Pty Ltd, 2010. *Archaeological Assessment & Management Plan*.
- Casey & Lowe, 2010. *Non Indigenous Archaeological Assessment*.
- Comber Consultants Pty Ltd, 2010. *Aboriginal Archaeological and Cultural Heritage Assessment*.
- Casey & Lowe, 2012. *Archaeological Excavation – Preliminary Results*.

These reports have been reviewed as part of the analysis of the historical context for this project. Original research has also been prepared, particularly in the location of the proposed Barangaroo Ferry Hub.

3.1 History of the Project Area

3.1.1 Aboriginal occupation

Prior to the European occupation of Sydney, the landscape was characterised by sandstone ridges and plateaus cut by streams and rivers forming bays and estuaries that provided a wide range of resources for Aboriginal inhabitants. Eucalypt forest in the protected gullies gave way to open woodland on the slopes and coastal plains and inter-tidal rock platforms, beaches or mangrove mudflats on or near the shore (Attenbrow 2010: 40).

Prior to European settlement, the country surrounding the Project Area was the western-most part of the Gadigal nation (also known as Cadigal), a clan within the Darug language group. The Gadigal territory ranged from the entrance to the harbour along the south shore to Darling Harbour (Attenbrow 2010:24). When Captain John Hunter arrived in 1788, he noted in his journal “Canoes 67 – men 94 – women 34 – children 9” (Attenbrow, 2010:24). A smallpox epidemic in 1789 reduced that number to just three (Attenbrow 2010:21). To the west of the Gadigal were the Wangal people, whose territory included the western shore of Darling Harbour and Goat Island.

These boundary divisions are based upon information passed down from people such as Governor Philip and Captain John Hunter, the Captain of *HMS Sirius*. Pre-contact Aboriginal boundaries, however, may not have been so well defined and may have overlapped (Collins 1798). It is likely, for example, that both groups used Darling Harbour for food collection and other resources. Archaeological evidence indicates that Aboriginal campsites were usually located close to shore. Fish and shellfish were staples of the Aboriginal diet, and the shores of Darling Harbour were an important source of cockles, rock oyster and mud oyster. A more detailed assessment of Aboriginal cultural heritage in the Project Area was provided in a Aboriginal heritage technical memo (RPS 2014) which is summarised within the Environmental Impact Statement.

3.1.2 European arrival

The suburb of Barangaroo was named after a wife of Bennelong, a Wangal elder who was kidnapped by Governor Phillip in an attempt to establish relationships with the local population. Bennelong is mentioned by name in Watkin Tench’s journal of the earliest years of the colony. After the theft of an Aboriginal woman’s fishing tackle by a convict, Governor Phillip ordered the convict to be flogged and invited many Aboriginal people to watch, in order to show that the new colonists intended to protect the rights of the native people as well. Tench noted:

The women were particularly affected; Daringa shed tears; and Barangaroo, kindling into anger, snatched a stick, and menaced the executioner. The conduct of these women, on

this occasion, was exactly descriptive of their characters. The former was ever meek and feminine; the latter, fierce and unsubmitive. (Tench 1793)

Discouraged by the rugged topography of what is now Millers Point and Darling Harbour, the 1788 settlement centred on Sydney Cove (now Circular Quay) and the Tank Stream, a fresh water tributary that flowed into the cove. The colony, however, grew quickly and within a few years, the European settlement had spread to the western ridge overlooking what is now Darling Harbour.

By 1792, four clearly delineated settlement areas were evident on the eastern shore of Darling Harbour. It was not until Lesueur's plan of 1802, however that this part of the colony was well represented. The eastern shore, now Barangaroo, had rocky cliffs with steep gradients and a protracted intertidal zone. Together with the number of creeks meandering through the head of Darling Harbour and the type of vegetation depicted, this area can be taken to have been predominantly swamp or marshland; fertile hunting ground for Indigenous Australians, but much less inviting for the settlers.

From around the early 1800s settlement began to expand westward, and the ridge between Sydney Cove and Darling Harbour was developed. Early maps show more activity in the Darling Harbour area from around the 1820s. As demonstrated in Plate 3, the early shoreline was vastly different from today's shoreline. The bay now known as Darling Harbour was first known as Long Cove, describing its physical appearance, before being called Cockle Bay from around 1804, in reference to the abundance of shellfish found there. Governor Darling changed the name to Darling Harbour in 1826 (State Records NSW Online).

In 1811, Governor Macquarie commissioned the construction of a wharf at the western end of Market Street, which became known as Market Wharf. This became the central hub for the transport of goods by water between the Parramatta River settlements and the Sydney markets (State Records NSW Online). In 1815, a second wharf was constructed at the head of Cockle Bay to service one of the first steam-powered flour mills in the Colony (Royal Australian Historical Society Online), and a third was constructed in 1827 (Sydney Harbour Foreshore Authority 2010: 8).

Over the following decades, numerous shipbuilding and transport wharves were set up along the eastern shore of Darling Harbour, although shipbuilding was one of the first industries around the then Cockle Bay. The first ship to be built in Cockle Bay was the *Hawkesbury Packet* cargo sloop, in 1811. Also of note was the shipbuilder John Cuthbert, who built Australia's first warship, *Spitfire*, at his Darling Harbour shipyard. (Sydney Harbour Foreshore Authority 2010: 13).

It was not until John Septimus Roe's plan of August 1822, that maritime infrastructure is first depicted at what is now Barangaroo. Roe's plan clearly showed Arthurs Wharf protruding from shore into the waters of eastern Darling Harbour. Development of the area continued apace until its peak and ultimate decline between 1870 and 1901. Both Austral Archaeology (2010: 11-35) and Casey & Lowe (2012: 4-11) have produced lengthy overviews of the historic development of eastern Darling Harbour and it is for this reason that it will not be reproduced here. Both reports provided detailed accounts of which merchants and shipbuilders occupied which land and were supported by a plethora of historical photographs.

These reports indicate that the Barangaroo headland and eastern Darling Harbour generally, was a hub of industry. Over time, it housed several shipyards and engineering facilities including Henry Bass' shipyard (occupied 1832-1854), Girard's Quarry and Flour Mill (1832-1841), Breillat and Sydney Flour Company (1841-1878) and Grafton Wharf which was occupied by Smith and Challis (1854-1880) and Watson and Evans (1880-1900) (Casey & Lowe 2012: 5-11) prior to its resumption, repair and renewal (Austral Archaeology 2010: 35-45; Casey & Lowe 2012: 9-11).

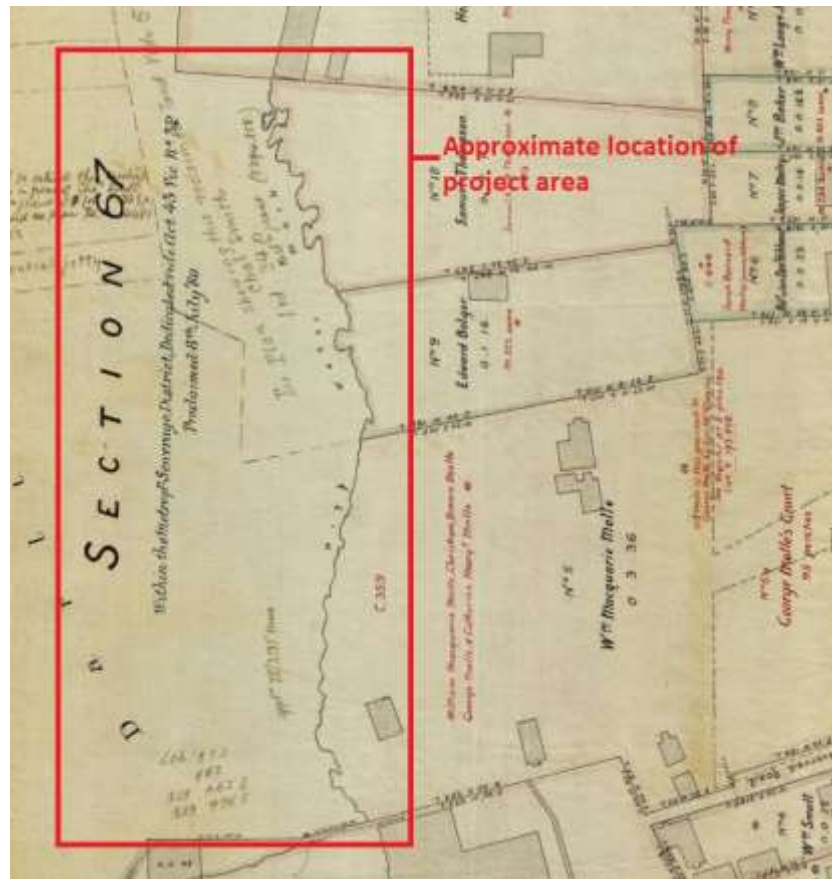


Plate 3 Detail of 1833 City Section Plan map (Courtesy of City of Sydney Archives).

Other industries in the area included the Australian Gas Light Company (AGL), who constructed their coal gas plant in 1841 in the vicinity of the Barangaroo development area (to the north of the current Project Area). A number of wharves belonging to AGL were constructed to receive coal ships from Newcastle, with the coal processed at the AGL plant at Barangaroo. With the growing demand for gas, the plant rapidly expanded over the ensuing decades until moving to Mortlake in 1922 (Sydney Harbour Foreshore Authority 2010: 17).

It wasn't just the foreshore being developed. References to the dredging of Darling Harbour appeared in the local Sydney newspapers as early as 1875 (Anon 1875a; 1875b) and continued throughout to the 1880s (Anon 1878; 1879; 1881; 1883; 1888; 1889). One article in the *Evening News* (Anon 1888) made reference to annual dredging with in excess of 240,000 tonnes of sediment removed by one of the three dredgers in that year alone.

The spread of bubonic plague from the wharves to the city in 1900 inadvertently changed the face of the eastern Darling Harbour waterfront. Commentators of the day blamed the unhygienic conditions of the wharves and the rats that frequented them for the spread of the disease. This fear provided the NSW government with the opportunity to redevelop the myriad of private wharves and jetties. The land along the eastern waterfront was resumed and redeveloped, with larger wharves meaning the berthing of larger steamships (Sydney Harbour Foreshore Authority 2010:13). Photos before and after the redevelopment show a more planned and modern waterfront (see Plates 5, 6 and 7).

Part of the redevelopment of the eastern Darling Harbour waterfront involved land reclamation. Reclamation obliterated the natural shore line and buried many of the timber wharves constructed prior to 1900. Archaeological investigations carried out by Casey & Lowe in 2012 uncovered a number of the timber pilings

of these wharves, as well as a large stone sea wall still surviving beneath the fill introduced as part of the land reclamation (Casey & Lowe 2012).



Plate 4 Darling Harbour, looking south from Millers Point, 1871 (Courtesy State Library of NSW).



Plate 5 Darling Harbour looking east from Pyrmont, 1870 (Courtesy of NSW State Records)



Plate 6 Darling Harbour looking east from Pyrmont, 1900 (Courtesy NSW State Records).

Later in the twentieth century, further land reclamation was carried out and newer wharves constructed.

In 1998 the area was the scene of the Australian Waterfront Dispute. This watershed event in Australian industrial relations history, in which Patrick Corporation (Patrick) sought to restructure their stevedoring operations for the purposes of increasing productivity in their workforce, resulted in the lockout of workers after restructures, with all workers members of the dominant Maritime Union of Australia (MUA). Patricks had attempted to remove unionised labour from its operations by way of a number of internal restructures, including the proviso for one of the Patrick companies agreeing to supply labour to the operations by way of a Labour Supply Agreement. These Labour Supply Agreements included the right to terminate labour without notice if there was any "interference with, delay in or hindering the supply of labour" (*Patrick Stevedores Operations No. 2 Pty Ltd & Ors v Maritime Union of Australia & Ors* [1998] HCA 30 [7]). It also allowed Patricks to replace staff at their discretion. In practice, it meant that labour belonging to any union could be dismissed without notice if they went on strike for any reason. In early 1998, the union labour force went on strike following the locking out of workers in the Webb Dock (Melbourne) facility and Patricks terminated the striking workers in April 1998 under the power of the Labour Supply Agreements. It also liquidated its assets and became insolvent. All ports, including Patrick's cargo wharves at Barangaroo, locked out their employees. The following day, all ports were opened again with non-union staff replacing union staff.

The MUA applied to the Federal Court for relief, who found in favour of the MUA. The then federal Liberal government, together with Patricks, appealed to the full bench of the Federal Court, who again found in favour of the MUA, as did the High Court in a subsequent appeal. Although all Patrick's wharves in Australia were affected, picketing at Darling Harbour (Barangaroo) and Port Botany were of such a scale that it was

successful in preventing trucking firms bringing non-union labour onto the wharves through the picket lines, and the then NSW Labor government kept the police from using violence on the picketers. Despite the win in the Courts, Patricks still claimed to be insolvent and unions had to bargain with them to retain their jobs. In the end, although winning the legal battle, the subsequent negotiations eroded the MUA's power on the wharves.

In 2006 Patricks moved their stevedoring operations from Barangaroo to Port Botany, thereby ending cargo operations at the wharves at Barangaroo. The former Patricks wharf at Barangaroo was used in 2008 as a World Youth Day site, with Pope Benedict XVI conducting a mass there. It was also used as a temporary overseas passenger terminal for smaller ships until the construction of the White Bay cruise terminal, which was completed in 2013.

3.2 Barangaroo today

Today Barangaroo is undergoing major urban renewal and development due for completion around 2023. Plans for the 22-hectare site include half business and residential developments and areas reserved for open public space. The state government of NSW declared plans for Globe Street, a street designed to become Australia and Asia Pacific's centre for corporate trade (styled on New York's "Wall Street" district), along with a new International Convention Centre Sydney (to replace the Exhibition Centre).

4.0 Review and Assessment of Marine Geophysical Data

4.1 Multi-beam sonar data

ArchaeoMar made an assessment of multi-beam sonar data gathered by Sydney Ports (now Port Authority of NSW) in November 2013. The method of collection and the type of instrument used to gather this data is unknown. This data set covered the entire Project Area and as a result eliminated the need for a separate marine geophysical or diver-based maritime archaeological survey as any items of potential heritage significance on the seabed would, by their very nature have been in situ prior to the 2013 survey.

The data revealed at least 30 anomalies on the seabed within the Project Area, however it was not possible to identify the true nature and extent of the anomalies, from the data set, only their presence on the seabed at the time of the survey.

4.2 Side-scan sonar data

In addition to the Sydney Ports multi-beam data, side-scan sonar data for the study area was obtained from the Australian Government's Defence Science and Technology Organisation (DSTO). The DSTO survey was undertaken in August 2014 (whilst the ArchaeoMar study was underway), using a Sonardyne Solstice 3000 side-scan sonar operating at 750 kHz.

The DSTO data verified the multi-beam data and provided a more detailed image of the seabed in the study area. This provided a better understanding of the size and scope of the anomalies identified in the multi-beam sonar data and also identified several additional anomalies that were not visible in the multi-beam data.

5.0 Visual Inspection

A visual inspection of the Project Area was made on 8 August 2014 by RPS Cultural Heritage Consultant, Deborah Farina. The following paragraphs include a discussion of the general physical context of the Project Area, and more detailed analyses of the heritage items:

- Adjoining the Project Area.
- In the vicinity of the Project Area.

The locations of identified heritage items are shown in Figure 3.

5.1 General Physical Context

The eastern shoreline of Darling Harbour is a heavily urbanised landscape, on the west-facing ridge separating Circular Quay (Farm Cove) and Darling Harbour. The landscape has been extensively modified with no natural land surface visible.

Sussex Street, the nearest major street to the Project Area, is flanked by office buildings, high-rise residential buildings and hotels, mixed with heritage items as noted above. Some adaptive reuse has occurred with the heritage items, whilst others, such as the Sussex Hotel, have retained their original facades and purpose. At the time of the visual inspection, construction of the Barangaroo development was being carried out, with the much of area hoarded off. Some machinery and construction personnel were also working outside the hoarding, presumably in connection with the Barangaroo construction.

Immediately south of the Project Area is the King Street Wharf precinct, with a number of waterfront restaurants, wharves and residential apartments. The existing Sydney Ferries King Street Ferry Wharf No. 3 is located in the King Street Wharf precinct, approximately 200 metres to the south of the Project Area (Plate 8).



Plate 7 Looking south toward King Street wharf from Project Area (RPS, 2014)

5.2 Project Area

The Project Area comprises a long wharf running the length of the eastern Darling Harbour shore line north from the King Street Wharf precinct. The area is currently opened to pedestrian traffic and is adjacent to the Barangaroo construction site. It is located on reclaimed land and retains features from its former use as a cargo wharf. Tramlines run in a north-south direction approximately 1.5 metres from the edge of the wharf. There is currently no barrier along the wharf (refer Plate 8).



Plate 8 Project Area looking north from entrance from King Street wharf precinct. Barangaroo construction site is to the right of frame. Goat Island is in the centre of frame, with the Balmain Peninsula to the left (RPS, 2014)

5.3 Heritage Items Adjoining the Project Area

There are no heritage items adjoining the Project Area.

5.4 Heritage Items in the Vicinity of the Project Area

As noted above, there are seven State heritage items in the vicinity of the Project Area, none of which are close enough to be impacted, either tangibly or intangibly, by the proposed work. One of the items is on Sussex Street, with the Barangaroo construction between it and the proposed Barangaroo Ferry Hub. The remaining items are located at Millers Point and across the harbour and are of a sufficient distance to not be impacted, either directly or indirectly, by the proposed work.

5.5 Diver based visual inspection

On 11 September 2014 ArchaeoMar undertook dives to ground-truth the sonar data and visually inspect the identified anomalies. The visual inspection sought to confirm the presence of the anomalies on the seabed; identify whether the targets were potential heritage items; and, if heritage items, assess their significance.

As a result of the ground-truthing ArchaeoMar determined that the majority of anomalies were modern debris, including a discarded silt curtain, anchor chain, timber piles, chairs, and plastic containers. The remaining anomalies were either components of modern construction infrastructure, including a used silt curtain and navigational aids, or natural geological features.

No items of Aboriginal or historic heritage significance were identified during the diver based visual inspection.

6.0 Statement of Heritage Significance

Although it is acknowledged the Barangaroo/former Darling Harbour east area has been an important waterfront location since the early nineteenth century and the general location has long been engaged in water transport and stevedoring operations, the Project Area is not considered to embody any heritage significance.

There is no doubt that shipping activity and ferry transport had a considerable influence on the early development of the surrounding locality with regard to urban and built form. The nearby wharves of Jones Bay and Dawes Point are tangible reminders of the importance of wharf facilities to the establishment and growth of Sydney. However, apart from continuity of purpose, the Project Area displays no evidence of heritage significance.

Some of the historic wharves in Sydney Harbour retain their historic significance in part based on their aesthetics. The setting of Barangaroo within Sydney Harbour is undoubtedly of high scenic value however it is not considered to be of aesthetic *heritage* significance.

The Project Area is therefore assessed as not having heritage significance.

7.0 Statement of Heritage Impact

The purpose of this Statement of Heritage Impact (SoHI) is to assess the likely impact of the proposal on identified historic sites in the vicinity of the Project Area. Although the Project Area has been assessed as not having the requisite significance to be considered a heritage item as noted above, the construction of the Barangaroo Ferry Hub must be assessed to ensure the heritage values of items identified in the vicinity are not compromised.

This assessment will also consider the visual impact in relation to identified heritage assets, such as Sydney Harbour and the nearby heritage items. The likely visual impact of the Barangaroo Ferry Hub proposal is considered in detail by the Landscape Character and Visual Impact Assessment prepared by Iris Visual Planning + Design which is included as an appendix to the Environmental Impact Statement, along with this report.

In accordance with the NSW Government Guidelines for SoHI, this section addresses the potential impact of the proposed work on the significance of the heritage items identified within the wider context of the proposed development site. Section 8 includes recommended measures proposed to manage and safeguard the heritage significance of the foreshore area.

7.1 Impact of Proposed Work on Heritage Significance

As discussed in the above significance assessment, there are no items of historic heritage significance in the Project Area, and the Project Area is not considered to meet any criteria for heritage significance. There is no potential for archaeological impact as the landside portion of the project is to take place on reclaimed land. Additionally, water side works would have a negligible impact on items of maritime heritage significance also due to the absence of such items in the area. As such, the tolerance for change in the area is dictated by the impact of the proposed work on adjacent heritage items.

7.2 Impact of Proposed Work on Adjacent Heritage Items and Places

The proposed form, design and materials of the proposal would generally be adapted from the design approach/aesthetic used for the upgrading of commuter wharves throughout Sydney Harbour which included floating pontoons, curved roof form, and stainless steel columns and supports, and glazed screens and balustrades. The proposal indicates that the new pontoon structure would be lightweight and open in appearance and that the materials would sit comfortably in the waterside context.

The proposal would not have a physical impact on any historic heritage sites within the wider townscape context. With regard to the likely impact on this wider setting, the proposed work to the wharf would not affect identified heritage items within the surrounding townscape. It is considered, therefore, that the proposal would not impact upon heritage items within the wider context of the wharf.

7.3 Visual Impact

A detailed Landscape Character and Visual Assessment report was prepared in 2014 by Iris Visual Planning + Design. The report concluded that the overall impact on the landscape character by the construction of the proposed Barangaroo Ferry Hub would be a moderate adverse impact (Iris Visual Planning + Design 2014).

7.4 Summary of Heritage Impact

The construction of the proposal is not considered to impact upon the heritage significance of any heritage items in the vicinity of the wharf.

8.0 Management and Mitigation Recommendations

This report has considered the significance of the Project Area and the nature and scale of likely heritage impact as a result of the development proposal. It is assessed that owing to the highly urbanised nature of the surrounding area and that the proposal is to be located on reclaimed land that there would be no adverse impact to any heritage items in the vicinity as a result of its construction and operation.

The proposed works are appropriate on heritage grounds and should proceed, provided Recommendations 1-5 below are followed:

Recommendation 1 – Heritage management plan

Should any unexpected finds be uncovered during the course of construction, these should be managed as part of the Construction Environment Management Plan (CEMP). The CEMP should include mitigation and management strategies for any unexpected archaeological finds.

Recommendation 2 – Heritage induction

All relevant staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977* and best practice outlined in *The Burra Charter 2013*, which may be implemented as part of the site environmental induction.

Recommendation 3 – Unexpected Aboriginal finds

If unrecorded Aboriginal object/s are identified in the Project Area during works, then all works in the immediate area must cease and the area should be cordoned off. OEH must be notified by ringing the Enviroline 131 555 so that the site can be adequately assessed and managed.

Recommendation 4 – Unexpected historic finds

If, during the course of development works, suspected historic cultural heritage material is uncovered, work should cease in that area immediately. The Heritage Division, OEH (Enviroline 131 555) should be notified and works only recommence when an approved management strategy has been developed.

Recommendation 5 – Skeletal remains

In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area must be cordoned off. The proponent must contact the local NSW Police who will make an initial assessment as to whether the remains are part of a crime scene or possible Aboriginal remains. If the remains are thought to be Aboriginal, OEH must be contacted by ringing the Enviroline 131 555. An OEH officer will determine if the remains are Aboriginal or not; and a management plan must be developed in consultation with the relevant Aboriginal stakeholders before works recommence.

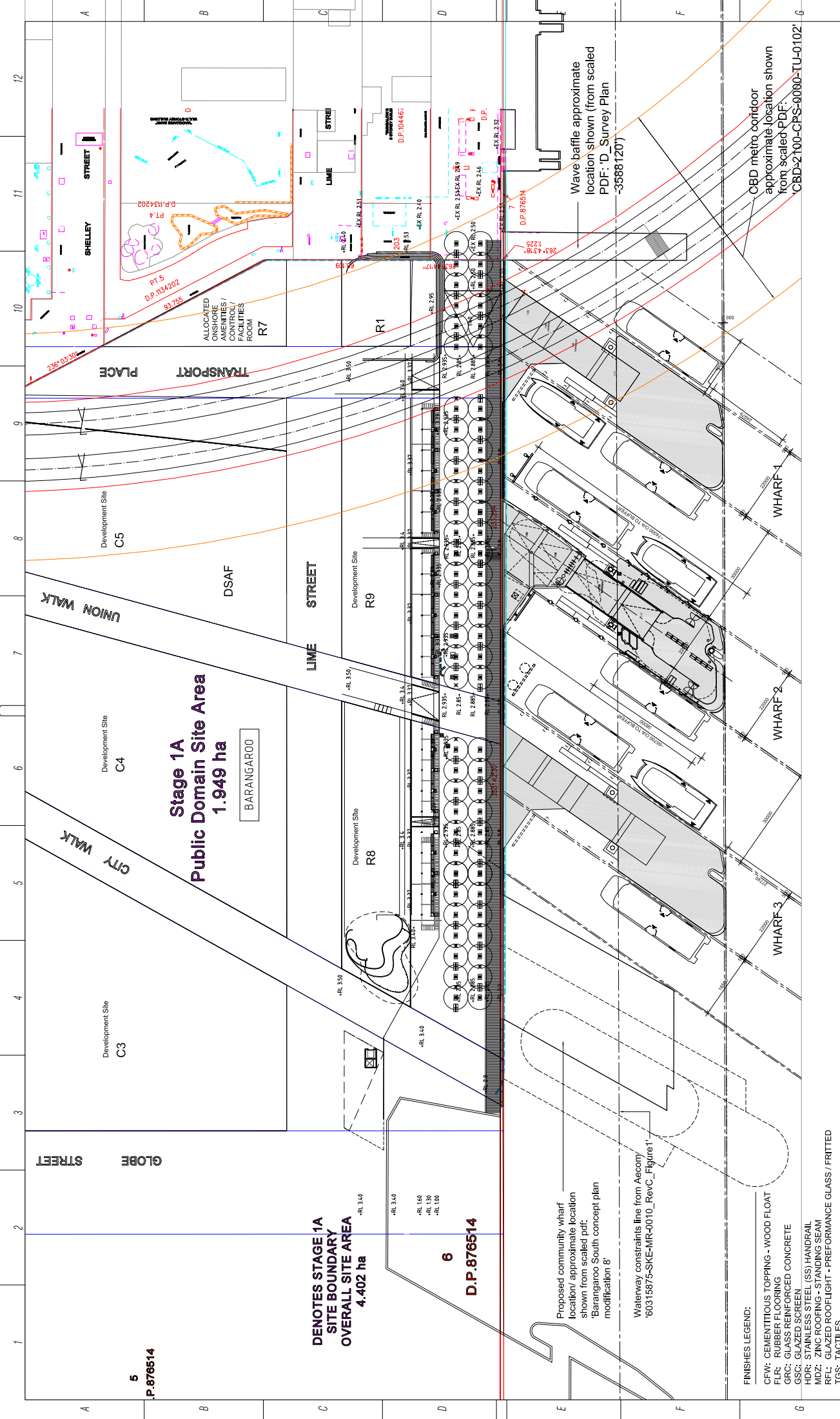
9.0 References

- Anon. (1875a). "Darling Harbour", Evening News, Thursday 4 November 1875:5.
- Anon. (1875b). "Removal of Silt and Sewerage from Darling Harbour", The Sydney Morning Herald, 5 November 1875:5.
- Anon. (1878). "Dredging of Darling Harbour", The Sydney Morning Herald, 16 March 1878:5.
- Anon. (1879). "The Dredging of Darling Harbour", The Sydney Morning Herald, 24 October 1879:5.
- Anon. (1881). "Dredging in Darling Harbour", Evening News, 12 October 1881:3.
- Anon. (1883). "Dredging Operations", The Sydney Morning Herald, 3 July 1883:5.
- Anon. (1889). "Dredging in 1888", Evening News, 21 June 1889.
- Archaeomar (2014). "Statement of Heritage Impact Desktop Study - Barangaroo Ferry Hub, East Darling Harbour". Unpublished report to Tim Stone Pty Ltd.
- Attenbrow, V. (2010). Sydney's Aboriginal Past: Investigating the archaeological and historical records. Sydney, UNSW Press.
- Australia ICOMOS (2013). The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance.
- Austral Archaeology (2010). Barangaroo Archaeological Assessment and Management Plan: Final report prepared by Austral Archaeology Pty Ltd Archaeological and Cultural Heritage Consultants for Barangaroo Delivery Authority.
- Casey & Lowe (2010). Non-Indigenous Archaeological Assessment Barangaroo Stage 1 (Barangaroo South). Report to LendLease (Millers Point) Pty Ltd.
- Casey & Lowe (2012). Archaeological Excavation Barangaroo South: Preliminary Results.
- Collins, D. (1798). An Account of the English Colony in New South Wales. With Remarks on the Dispositions, Customs, Manners &c. of the Native Inhabitants of that Country. To Which are Added, Some Particulars of New Zealand: Compiled by Permission, From the Mss of Lieutenant-Governor King. London, Digital Text Edition University of Sydney Library, Sydney.
- Comber Consultants (2010). Aboriginal Archaeological and Cultural Heritage Assessment
- Heritage Office (former) (2002) "Assessing Heritage Significance." NSW Heritage Manual.
- Heritage Office and Department of Urban Affairs and Planning (2002). Statements of Heritage Impact.
- Iris Visual Planning + Design (2014). Visual Impact Assessment - Barangaroo Ferry Hub. Unpublished report to Transport for New South Wales (TfNSW).
- Royal Australian Historical Society. (Online). "The First Wheel to Turn by Steam." Retrieved 7 July 2014, from <http://www.rahs.org.au/history-resources/the-first-wheel-to-turn-by-steam/>.
- State Records NSW. (Online). "Through the lens: Darling Harbour." Retrieved 7 July 2014, from <http://gallery.records.nsw.gov.au/index.php/galleries/through-the-lens-darling-harbour/>.
- Sydney Harbour Foreshore Authority (2010). Telling The Stories of Darling Harbour, Land & Property Management Authority, Sydney.

Tench, W. (1793). "A Complete Account of the Settlement at Port Jackson ". Including an Accurate Description of the Situation of the Colony; of the Natives; and of its Natural Productions, G Nicol and J Sewell.

Appendix I

Drawings Provided by Transport for New South Wales

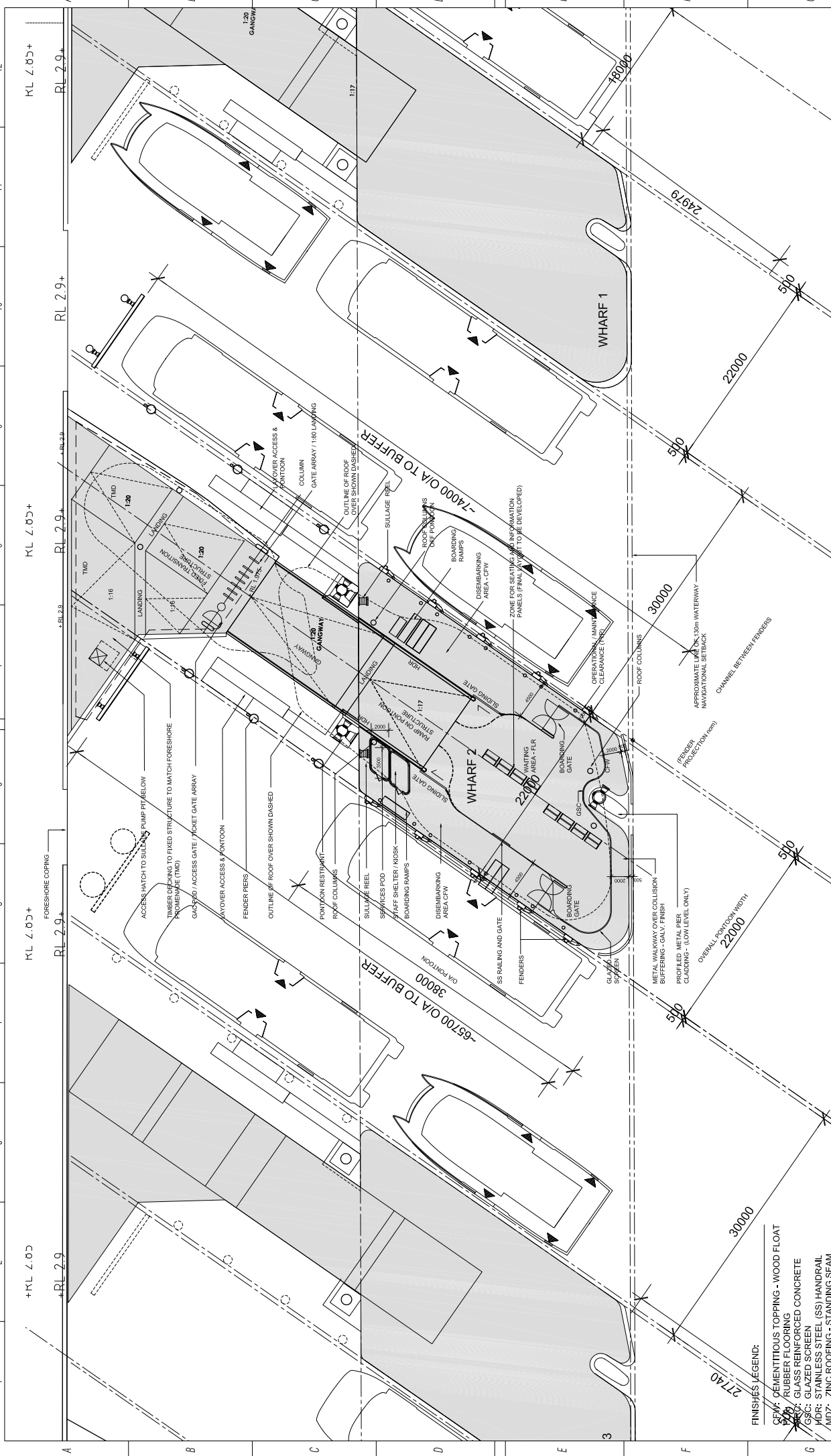


DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

APPROVED BY AEOEP CCB for Control Gate Stage:
CCAN. _____ & CMWEB No. _____

BARANGAROO FERRY HUB SITE PLAN

[illegible]



FINISHES LEGEND:

GCW: CEMENTITIOUS TOPPING - WOOD FLOAT
RUB: RUBBER FLOORING
GRG: GLASS REINFORCED CONCRETE
GSC: GLAZED SCREEN
HRS: STAINLESS STEEL (SS) HANDRAIL
HMD: ZINC ROOFING - STANDING SEAM
RMD: GLAZED ROOFLIGHT - PERFORMANCE GLASS
TGS: GLAZED
TMD: TIMBER DECKING
FCS: FIBER CEMENT CLADDING

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

Month	Number of People
January	2
February	4
March	6
April	8
May	10
June	12
July	14
August	16
September	18
October	20
November	18
December	16

TMD: TIMBER DECKING
ECS: FIBER CEMENT CLADDING

APPROVED BY AEOEP CCB for Control Gate Stage: _____
CCAN. _____ & CMWEB No. _____

BARANGAROO FERRY HUB
FLOOR PLAN

FILE NO.	SHEET: 02 OF 06	A1
STATUS:	Preliminary Concept Design	
DRG NO.	EDRMS No.	

This drawing and the information contained therein have been created solely for a particular purpose and client. Transport for NSW and its Consultants provide no warranty and accept no liability, arising from the use of this drawing and the information shown thereon for any other purpose. This is protected by copyright. You may not reproduce any part of it in any form without the written permission of Transport for NSW. If you do, you may have to pay damages to Transport for NSW or you may be prosecuted.

DRAWN _____ **BL/RL** _____
 DESIGNED _____ **DH/CV** _____
 DRG CHECK _____
 DESIGN CHECK _____
 APPROVED _____

aurecon



NSW
GOVERNMENT

Transport
for NSW

© 2000 Australia

Cox Richardson
PO Box Q193, Sydney NSW 1230
Level 2, 204 Clarence Street, Sydney NSW
T + 61 2 9287 9599 F + 61 2 9264 5944

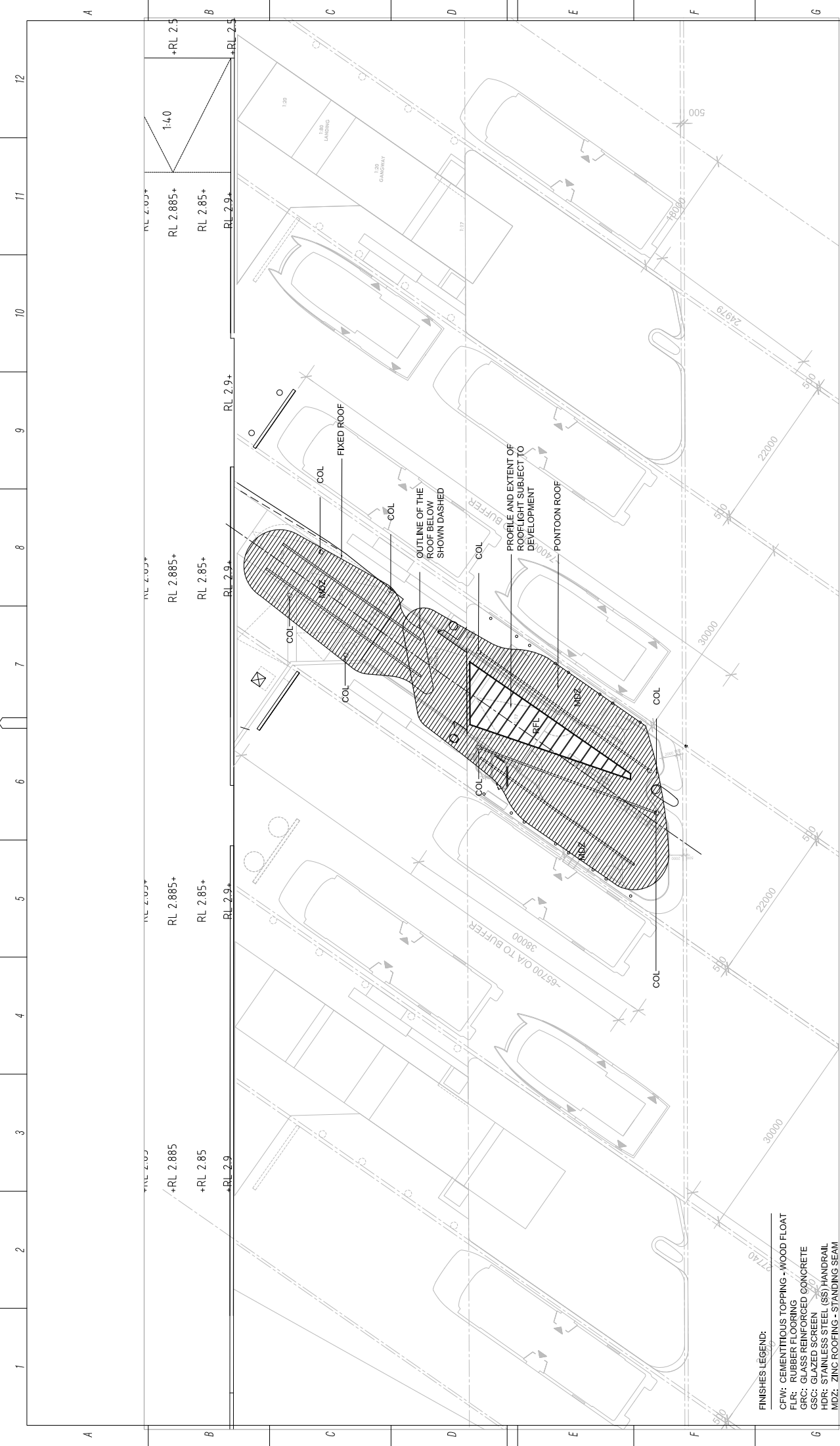
--	--

CONSTRUCTOR

	cc
--	----

[illegible]

--	--	--	--



FINISHES LEGEND:

- CFM: CEMENTITIOUS TOPPING - WOOD FLOAT
- FLR: RUBBER FLOORING
- GRC: GLASS REINFORCED CONCRETE
- GSC: GLAZED SCREEN
- HDR: STAINLESS STEEL (SS) HANDRAIL
- MDZ: ZINC ROOFING - STANDING SEAM
- RFL: GLAZED ROOFLIGHT - PERFORMANCE GLASS / FRITTED
- TGS: TACTILES
- TMD: TIMBER DECKING
- FCS: FIBER CEMENT CLADDING

Scale: 1:200 @ A1

0 2 4 6 8 10 20

APPROVED BY AEOEP CCB for Control Gate Stage: _____

CCAN: _____ & **CNWEB** No. _____

BARANGAROO FERRY HUB

ROOF PLAN

FILE No. _____ **SHEET:** 03 OF 06 **A1**

STATUS: Preliminary Concept Design

DRG No. BFH-COX-AR-000016 **DATE:** _____

CLIENT

NSW GOVERNMENT

Transport for NSW

CONSTRUCTOR

COX

Cox Richardson

Level 2, 204 Clarence Street, Sydney NSW 2000 Australia

Phone: +61 2 8000 0000 **Fax: +61 2 8004 0844**

www.coxrichardson.com.au

DESIGNED: _____ **BL/RL**

DRG CHECK: _____ **DH/CV**

DESIGN CHECK: _____

APPROVED: _____

AT Original

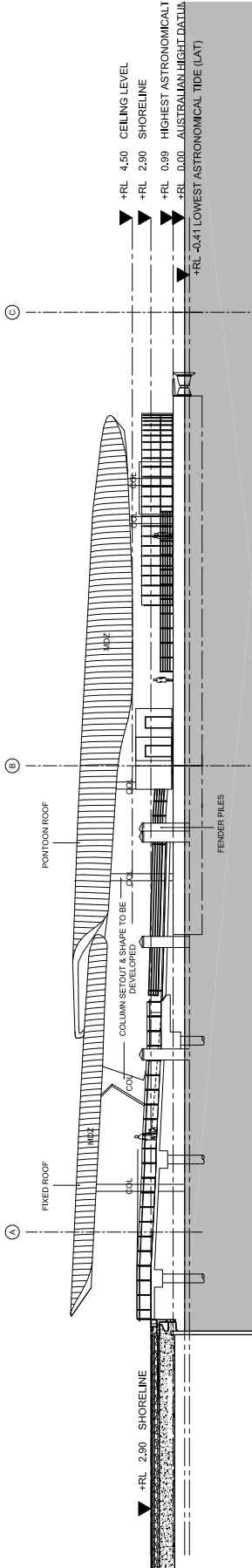
Coordinate System: MGA Zone 56

Height Datum: AHD

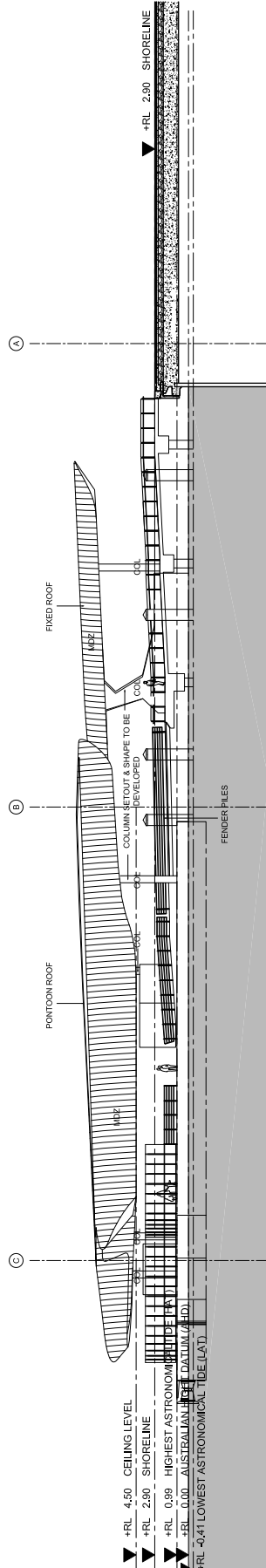
Scale: _____

1 2 3 4 5 6 7 8 9 10 11 12

A B C D E F G H



NORTH ELEVATION



SOUTH ELEVATION

FINISHES LEGEND:

- CFM: CEMENTITIOUS TOPPING - WOOD FLOAT
- FLR: RUBBER FLOORING
- GRC: GLASS REINFORCED CONCRETE
- GSC: GLAZED SCREEN
- HDR: STAINLESS STEEL (SS) HANDRAIL
- MDZ: ZINC ROOFING - STANDING SEAM
- RFL: GLAZED ROOFLIGHT - PERFORMANCE GLASS / FRITTED
- TGS: TACTILES
- TMD: TIMBER DECKING
- FCS: FIBER CEMENT CLADDING

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

Scale: 1:200 @ A1

APPROVED BY AEOEP CCB for Control Gate Stage: _____
CCAN: _____ & CNWEB No. _____

Transport for NSW
NSW GOVERNMENT



Cox Richardson
Level 2, 204 Clarence Street, Sydney NSW 2000 Australia
Tel: +61 2 8000 9999 Fax: +61 2 8004 5844
www.coxrichardson.com.au



CLIENT



Cox Richardson Pty Ltd (ACN 120 331 971)

REV	BY	DATE	DESCRIPTION	APPROVAL
A1	Original	10/10/14	Preliminary Concept Design: 2 Roof Option	

Coordinate System: MGL Zone 56 Height Datum: AHD Scale:

DESIGNED: _____
DRAWN: _____
CHECKED: _____
APPROVED: _____



Transport for NSW
NSW GOVERNMENT

Cox Richardson
Level 2, 204 Clarence Street, Sydney NSW 2000 Australia
Tel: +61 2 8000 9999 Fax: +61 2 8004 5844
www.coxrichardson.com.au



CLIENT



Cox Richardson Pty Ltd (ACN 120 331 971)

REV	BY	DATE	DESCRIPTION	APPROVAL
A1	Original	10/10/14	Preliminary Concept Design: 2 Roof Option	

Coordinate System: MGL Zone 56 Height Datum: AHD Scale:

DESIGNED: _____
DRAWN: _____
CHECKED: _____
APPROVED: _____



Transport for NSW
NSW GOVERNMENT

Cox Richardson
Level 2, 204 Clarence Street, Sydney NSW 2000 Australia
Tel: +61 2 8000 9999 Fax: +61 2 8004 5844
www.coxrichardson.com.au



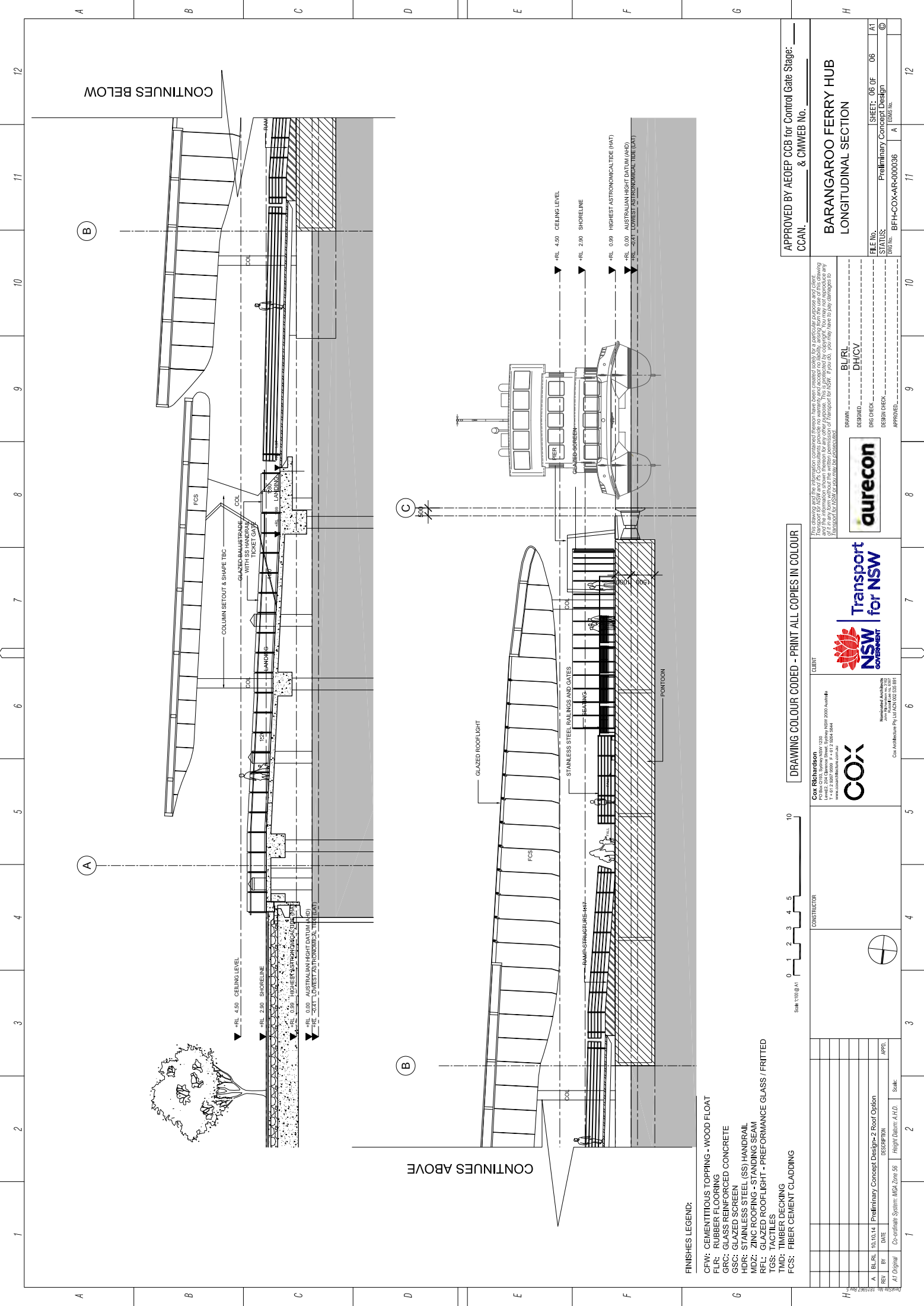
CLIENT



Cox Richardson Pty Ltd (ACN 120 331 971)

REV	BY	DATE	DESCRIPTION	APPROVAL
A1	Original	10/10/14	Preliminary Concept Design: 2 Roof Option	

Coordinate System: MGL Zone 56 Height Datum: AHD Scale:



APPROVED BY AEOEP CCB for Control Gate Stage: _____
CCAN. _____ & CMWEB No. _____

**BARANGAROO FERRY HUB
LONGITUDINAL SECTION**

FILE No.	_____	SHEET: 06 OF 06	A1
STATUS:	Preliminary Concept Design		©
DRG No.	BFH-COX-AR-000036	TEAM No.	_____

This drawing and the information contained therein have been prepared solely for a particular purpose and client. It is not to be used for any other purpose without the written consent of the architect. The architect does not accept any liability for any loss or damage, whether direct or indirect, arising from the use of this drawing for any purpose other than that for which it was prepared. If you do, you may need to pay damages to Transport for NSW as may be determined.



Cox Richardson
Level 12, 204 Clarence Street, Sydney NSW 2000 Australia
Tel: +61 2 8000 9999 Fax: +61 2 8004 5844
www.coxrichardson.com.au
Cox Architecture Pty Ltd (ACN 105 233 931)

COX

REV	DATE	DESCRIPTION	APPROVAL
A	10/10/14	Preliminary Concept Design - 2 Roof Option	
At Original		Coordinate System: MGL Zone 56	Height Datum: A.H.D.

- FINISHES LEGEND:**
- CEMF: CEMENTITIOUS TOPPING - WOOD FLOAT
 - FLR: RUBBER FLOORING
 - GRC: GLASS REINFORCED CONCRETE
 - GSC: GLAZED SCREEN
 - HDR: STAINLESS STEEL (SS) HANDRAIL
 - MDZ: ZINC ROOFING - STANDING SEAM
 - REL: GLAZED ROOF LIGHT - PERFORMANCE GLASS / FRITTED
 - TGS: TACTILES
 - TMD: TIMBER DECKING
 - FCS: FIBER CEMENT CLADDING

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

Scale: 1:100 @ A1

CONSTRUCTOR

