WALSH BAY ARTS AND CULTURAL PRECINCT

STATE SIGNIFICANT DEVELOPMENT APPLICATION

SSDA 8671

Environmental Impact Statement

Submitted to Department of Planning and Environment on behalf of Arts Screen and Culture Division

October 2017

NSW GOVERNMENT

Walsh Bay Arts and Cultural Precinct

Environmental Impact Statement

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Quality Information

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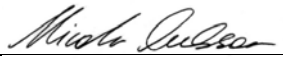
Reviewed by Helena Miller

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
Revision 01	29.9.2017	Draft EIS for review	Nicola Gibson	
Revision 02	03.10.2017	Draft EIS Version 2 for review	Nicola Gibson	
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Revision 05	16.10.2017	Final EIS for exhibition	Nicola Gibson	

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Appendices

Statement of Validity

Environmental Impact Statement prepared by

Name	Nicola Gibson
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Address	MG Planning Pty Ltd Suite 1.4, 135 Victoria Road DRUMMOYNE NSW 2047
In respect of	Walsh Bay Arts and Cultural Precinct

Applicant & Land Details

Applicant name Applicant address	Infrastructure NSW Level 15, 167 Macquarie Street, Sydney NSW 2000
Lot No, DP	Refer property description in Section 2.2 of the EIS
Environmental Impact Statement	An Environmental Impact Statement (EIS) is attached
Statement of Validity	I certify that I have prepared the contents of the Environmental Impact Statement and to the best of my knowledge: ▪ It is in accordance with Part 4 of the *Environmental Planning and Assessment Act 1979* and Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* ▪ The information contained in the Environmental Impact Statement is neither false nor misleading.
Signature	
Name	Nicola Gibson
Date	16 October 2017

Abbreviations

ACO	Australian Chamber Orchestra
Applicant	Infrastructure NSW
ASCD	Arts, Screen and Culture Division
ATYP	Australian Theatre for Young People
BCA	Building Code of Australia
BDT	Bangarra Dance Theatre
CMP	Conservation Management Plan
CPTED	Crime Prevention Through Environmental Design
CPTMP	Construction Pedestrian and Traffic Management Plan
CSELR	CBD and South East Light Rail
Department	Department of Planning and Environment
DTS	Deemed-to-Satisfy provisions as set out in the Building Code of Australia
ECSMP	Environmental, Construction and Site Management Plan
EIS	Environmental Impact Statement
EMS	Emergency Management Strategy
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
GTP	Green Travel Plan
HIS	Heritage Impact Statement
IWMP	Integrated Water Management Plan
LEP	Local Environmental Plan
NVIA	Noise and Visual Impact Assessment
OPM	Operational Plan of Management
REP	Regional Environmental Plan
RMS	Roads and Maritime Services
SCCAS	Sydney City Centre Access Strategy
SDC	Sydney Dance Company
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SSD	State Significant Development
SSDA	State Significant Development Application
STC	Sydney Theatre Company
TGS	Traffic guidance Scheme
The Choirs	Includes Gondwana, the Sydney Philharmonia and the Song Company
TIA	Traffic Impact Assessment
VIA	Visual Impact Assessment
WBACP	Walsh Bay Arts and Cultural Precinct

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Executive Summary

This Environmental Impact Statement (EIS) is submitted to the NSW Department of Planning and Environment (the Department) in support of a State Significant Development Application (SSDA) for the construction and operation of Pier 2/3 and Wharf 4/5 for arts and cultural uses. It also seeks consent for complementary commercial and retail offerings to activate the precinct. The project is referred to as the Walsh Bay Arts and Cultural Precinct (WBACP) in this EIS.

The project is State Significant Development under Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 ("State and Regional Development SEPP") as it is a cultural facility with a capital investment value (CIV) of over $30 million.

The Site

The site comprises Pier 2/3, Wharf 4/5 (excluding the internal space occupied by the Sydney Theatre Company) and the Shore Sheds for Wharf 4/5.

The land owner of the WBACP site and adjoining water is the Roads and Maritime Services (RMS). Both Pier 2/3 and Wharf 4/5 are occupied under various lease arrangements, primarily for arts and cultural uses.

Overview of the Proposed Development

This SSDA seeks consent for the following:

- Internal reconfiguration and upgrading of Pier 2/3, Wharf 4/5 and Shore Sheds 4/5 to provide for improved rehearsal spaces, and in some cases performance spaces, for the ACO, ATYP, SDC, Bell Shakespeare, BDT, Sydney Philharmonia Choir, Gondwana Choir and Song Company as well as improved back-of-house and administrative facilities;
- External alterations to Pier 2/3 and Wharf 4/5 to provide for improved street entry at Hickson Road, additional external stairs, lifts and balconies designed as a contemporary interpretation of the original gantries reflecting the precinct's former industrial heritage;
- Installation of new glazing and doorways within the existing chequerboard design framework to allow for improved access and views in and out of the wharf buildings;
- Modification to the roofs of Pier 2/3 and Wharf 4/5 contained within the central valleys to provide for improved performance spaces and acoustics and to accommodate plant without the need for significant change to the roof profiles;
- Three new commercial spaces within Shore Sheds 4/5 for use as shops, cafes, restaurants, small bars and the like to activate the precinct;
- Use of the ground floor of Pier 2/3 for arts and cultural events and festivals including Sydney Writers' Festival and Biennale as well as for venue hire;
- Installation of shopfront glazing and retractable awnings to the north of the proposed commercial uses in Shore Sheds 4/5 similar to the existing awning on the Pier 2/3 Shore Sheds café;
- Early construction works comprising infrastructure upgrades, demolition and hazmat removal.

The construction program is estimated to take approximately 24 months commencing in July 2018.

Justification

The new arts precinct at Walsh Bay is intended to expand and strengthen the existing cluster of cultural institutions and attractions along Sydney's foreshore. The arts and cultural program within the WBACP will complement the other cultural initiatives in surrounding areas, including those at nearby Barangaroo. Fundamental to the WBACP concept is the recognition that the wharves' unique location and distinctive heritage architecture provide significant opportunities for place making.

The importance of the urban renewal of Walsh Bay is recognised in several key strategic planning documents, including *A Plan for Growing Sydney.* The social and economic benefits that result from a redeveloped Walsh Bay include direct and indirect use values (value attributable to the visitation and enjoyment of the area by local, interstate and international visitors), as well as the more intangible benefits derived from the intrinsic and existence value.

The WBACP is an iconic, waterfront, north facing site with great opportunities for visual and physical access to the water. It is uniquely placed to enhance the activation and legibility of the Walsh Bay area as a desirable destination that changes with each visit.

Having regard to the broader context, with the Barangaroo development and activation of the Harbour's western waterfront underway, there is an opportunity for the WBACP to capitalise on the significant increase in local, interstate and international visitors that will be drawn to the area in the first years following commissioning and operation of these adjacent sites. Synergies with public transport and urban design solutions, complementary cultural activities and events and governance and operational efficiencies can also be explored and secured.

Planning framework

Section 6.0 of the EIS considers all applicable legislation, strategies and policies which were identified for consideration in the SEARs. The proposal is consistent with the requirements of all relevant SEPPs and planning strategies. No non compliances with planning instruments have been identified.

Environmental Impact Assessment

The EIS assesses and responds to the environmental impacts of the Walsh Bay Arts and Cultural Precinct development. In particular, it addresses the matters for consideration set out in the requirements (SEARs) issued by the Secretary of the Department of Planning and Environment. Key issues that are addressed include:

- Built form and urban design
- Public domain
- Heritage and archaeology
- Noise and amenity
- Transport and accessibility
- Visual impacts
- Maritime impacts
- Contamination
- Drainage, flooding and sea level rise
- Construction and waste impacts
- Ecologically sustainable development

The EIS and supporting specialist reports provide a detailed assessment of the WBACP project in relation to these and other matters set out in the SEARs and demonstrate that the proposal will have minimal adverse environmental impact. Any environmental issues can be effectively managed via the mitigation measures referred into the report.

1. Introduction

This Environmental Impact Statement (EIS) is submitted to the NSW Department of Planning and Environment (the Department) in support of a State Significant Development Application (SSDA) for the construction and operation of Pier 2/3 and Wharf 4/5 for arts and cultural uses. It also seeks consent for complementary commercial and retail offerings to activate the precinct. The project is referred to as the Walsh Bay Arts and Cultural Precinct (WBACP) in this EIS.

The project is State Significant Development under Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 ("State and Regional Development SEPP") as it is a cultural facility with a capital investment value (CIV) of over $30 million.

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was sought on 3 August 2017 and the SEARs were issued on 1 September 2017. This submission is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and addresses the issues raised in the SEARs.

This report includes the following information relevant to the application and as set out in the SEARs:

- A Statement of Validity of the EIS
- An executive summary
- A description of the proposed development for which approval is being sought
- The existing planning provisions applying to the site, including the permissibility of the proposal and how it will achieve planning objectives
- Assessment of the environmental impacts and key issues
- Summary of proposed mitigation and management measures, and
- Justification for undertaking the project, including consideration of the suitability of the site and whether the proposal is in the public interest.

1.1 Background

A master plan outlining the vision for an enhanced and integrated public arts and cultural destination at Walsh Bay was prepared in 2013. The master plan included redevelopment of Pier 2/3 for new arts facilities and performance venues, refurbishment of existing facilities in Wharf 4/5 and creation of new public domain through a waterfront square.

A staged SSDA process to realise the master plan vision commenced in 2014 with consent for Stage 1 granted in May 2015. A Stage 2 SSDA process commenced in 2016 and proceeded to exhibition in November 2016.

An appeal against the Stage 1 consent was heard in the Court of Appeal in April 2017. The Court ruled that the Stage 1 consent be declared invalid and set aside. As a consequence the Stage 2 SSDA was withdrawn by the Applicant.

The NSW Government remains committed to the creation of a public arts and cultural destination at Walsh Bay. Key to achieving this commitment is the redevelopment of Pier 2/3 and refurbishment of Wharf 4/5 in line with the 2013 master plan. The waterfront square component of the master plan will not be pursued at this time and remains subject to further design consideration.

To achieve the NSW Government's commitment to public arts at Walsh Bay, this SSDA therefore seeks approval for the construction and operation of Pier 2/3 and Wharf 4/5 for arts and cultural uses with complementary commercial and retail offerings to activate the precinct.

This SSDA will complement the Sydney Theatre Company's (STC) proposal to improve its current facilities at Wharf 4/5 as part of the overall precinct regeneration. The project, known as STC50, is intended to create better theatre and rehearsal facilities, improve workspaces, enhance visitor experiences as well as improve revenue earning capacity. STC has prepared and submitted a development application for these works (SSD 7561). This application is currently with the Department of Planning and Environment.

1.2 Overview of the project

The NSW Government is proposing to develop a new arts destination at Walsh Bay as identified in the NSW Government's State Infrastructure Strategy. This precinct will expand and strengthen the existing cluster of cultural institutions and attractions within the Sydney CBD and harbour. The development will provide an enhanced and integrated performing arts and cultural destination at Walsh Bay.

The development will include the following key components:

Early works

- Early construction works comprising infrastructure upgrades, demolition and hazmat removal.

Pier 2/3

- Internal alterations and reconfiguration to provide for the following:
  - Performance venues;
  - Rehearsal rooms, production workshops, back of house facilities and offices;
  - Function spaces, bars, and foyer spaces extending onto external gantry platforms (balconies) providing breakout space for internal foyers;
  - Construction of some mezzanine spaces for offices and back of house facilities;
  - Upgrading of some walls to meet the requirements of Section J of the BCA;
  - Removal of some storey posts and beams to facilitate internal reconfiguration/new uses; and
  - Retention of a large proportion of the ground floor in its existing 'raw' heritage state for arts and cultural events and festivals including Sydney Writers' Festival and Biennale as well as for venue hire.
- External alterations and additions comprising:
  - Raised roofs within central valley of Pier 2/3;
  - New balconies and external stairs for fire egress;
  - Installation of glazing in existing cargo sliding doors and other solid panels on the eastern, western and northern elevations to allow for views into and out of the building. The glazing is to be installed mostly consistent with the building's existing chequerboard pattern;
  - Raising of the floor level on the eastern side by introducing a new raised deck and continuous set of stairs beyond the existing column line;
  - External lift to the western side of Pier 2/3;
  - Installation of solar photovoltaic panels to roof;
  - Installation of roof plant platform in roof valley.

Wharf 4/5

- Internal alterations and reconfiguration to the Bangarra Dance Theatre (BDT) tenancy to provide for the following:
  - Upgrade of the main rehearsal and performance space to provide improved daylight and natural ventilation;
  - Upgraded foyer/exhibition space along the eastern frontage;
  - Improved office space at mezzanine level including a new lift;
  - Provision of function space at ground level of northern end of wharf;
  - New entrance to BDT and new glazing in bays of sliding cargo doors, opening up the foyer and main studio to Wharf 4 apron;
  - New offices for Choirs located between BDT and Sydney Dance Company (SDC).
- Minor internal alterations to the SDC tenancy including:
  - Reducing the existing workshop space to create a fifth dance studio;
  - Upgrading office and reception areas.
- External alterations and additions to SDC comprising:
  - raising of timber wharf deck adjoining the SDC café and opening of facade with new glazing.
- External fabric alterations around the STC tenancy comprising:
  - Improved street entry at Hickson Road involving relocation of the stairs to allow for a greater landing and point of arrival to the STC;

- New 'gantry' balconies, stairs and lifts mid-wharf and at the end of the wharf to provide for improved accessibility and a compliance with fire engineering solutions;
- Minor amendments to the existing façade to accommodate new entries and exits along the wharf; and
- Lifting the roof valley above the workshop roof to allow for flexibility in set design and above Wharf 1 theatre to improve the audience viewing experience.

Shore Sheds 4/5

- Relocation of choir rehearsal spaces;
- Creation of new commercial tenancies at ground and mezzanine levels;
- Provision of a plant and services room and switch room; and
- Provision of Precinct Manager's office at ground level.

New Uses

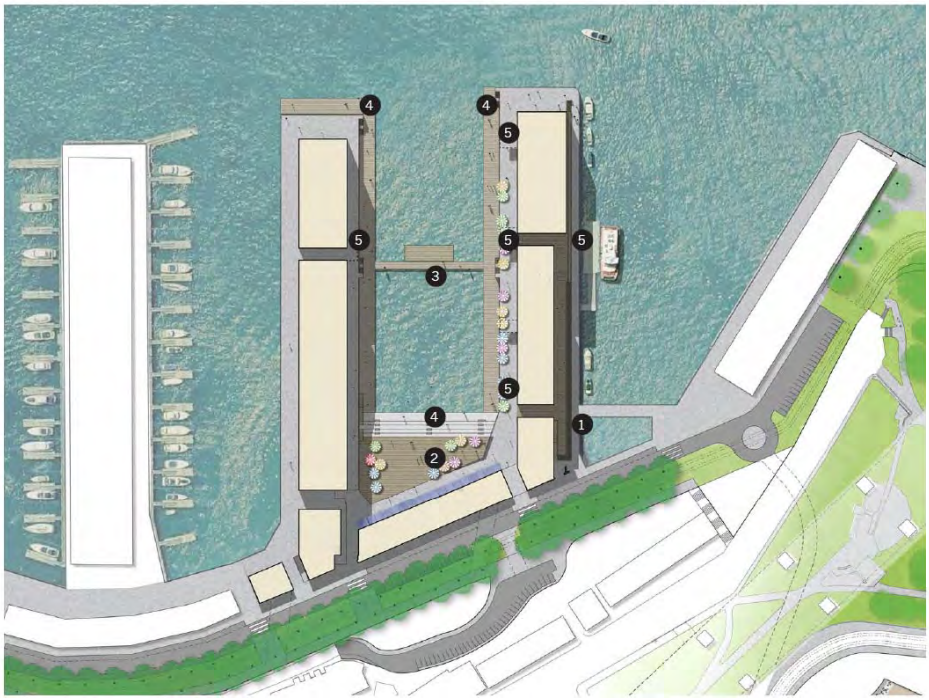
- In association with the internal use of facilities, use of the pier and wharf aprons for arts activities, functions and community events.

1.3 Assessment of alternatives

Consideration by Government of potential uses in the 1990's resulted in the redevelopment of Piers 6/7 and 8/9 to provide a mix of residential, commercial and retail uses – ultimately to be complemented by an arts and cultural focus on the Pier 2/3, Wharf 4/5 and the Wharf 4/5 Shore Sheds.

Between 2004 and 2010 a number of options for the precinct were explored. These options were further refined as part of an extensive preliminary concept design process.

In 2013 a Master Plan was prepared which considered a range of arts and cultural development options in Walsh Bay. The Master Plan was prepared by the Government Architect NSW and provided a blueprint for the ongoing redevelopment of Walsh Bay Pier 2/3, Wharf 4/5 and Wharf 4/5 Shore Sheds.



The 2013 Master Plan comprises five main components;

1. a clearly defined arrival point and entry associated with the public transport stops (ferry/bus)
2. a public waterfront square that anchors the cultural hub and creates a multipurpose space for alfresco dining, special events, exhibitions and a waterfront amphitheatre with a pontoon for performances
3. a sliding bridge that connects Pier 2/3 and Wharf 4/5 and allows the cultural hub to be transformed for a whole range of activity and event types
4. floating walkways, steps and seating that connect the public directly with the water, increases site permeability and access and supports a diverse range of activity
5. overhead gantry platforms that re-connect the upper levels of the precinct to the outdoors to take advantage of the waterfront location and support temporary performances by providing elevated viewing platforms

Figure 1: 2013 Master Plan

Following the preparation of the Master Plan, an extensive preliminary concept design process was undertaken in which four options were evaluated, including a base case or "do nothing" option. While in all options the external spaces (public domain and waterfront square) have remained reasonably constant, the internal mix of uses has been extensively tested, and functional areas substantially negotiated with shortlisted arts organisations. Through this process it was clear that the amount of available spaces for arts organisations exceeded demand and that the retention of 'open space' and the development of commercial tenancies were central to achieving the vision of the Precinct. The four options are described below.

- Option 1 Base Case: This option would maintain the status quo with no reconfiguration of existing tenants. All construction work would be limited to ongoing maintenance.
- Option 2 Modified Master Plan (most activated option): This option refined the Master Plan by locating the Australian Chamber Orchestra (ACO), Australian Theatre for Young People (ATYP) and Bell Shakespeare in Pier 2/3 along with around 2,000sqm of commercial events /arts space at ground level. The Wharf 4/5 Shore Sheds would continue to accommodate the choirs as well as around 1,000sqm of new commercial retail space. STC, SDC and BDT would remain the primary tenants of Wharf 4/5 with the addition of a commercial retail tenancy at the north end of SDC's footprint. The public domain would be upgraded to include a waterfront square between Pier 3 and Wharf 4 and six gantries with external stairs at the upper level of Pier 2/3.
- Option 3 Modified Master Plan (balanced option): This option further refined the Master Plan by decanting ATYPs offices into the shore sheds. ACO, Bell and ATYP performance spaces would be located in Pier 2/3 along with around 2,300sqm of commercial events / arts space at ground level. ATYP's office and the choirs' rehearsal and office spaces would occupy the shore sheds along with approximately 650sqm of commercial retail space. STC, SDC and BDT would remain the primary tenants of Wharf 4/5 with the addition of a commercial retail tenancy at the north end of SDCs footprint. The waterfront square would be retained but only five gantries would be provided at the upper level of Pier 2/3.
- Option 4 Modified Master Plan (predominantly arts facilities): This option proposed commercial events / arts space throughout the entire ground level of Pier 2/3, with ATYP accommodated in a new facility in the shore sheds. ACO and Bell would be located on the upper level of Pier 2/3 along with almost 2,800sqm of commercial events / arts space at ground level. ATYP and the choirs' rehearsal spaces would occupy the shore sheds, while STC, SDC and BDT would remain the primary tenants of Wharf 4/5. The waterfront square would be retained with only four gantries provided at the upper level of Pier 2/3.

An evaluation of the options against the project objectives is provided in Table 1.

Table 1: Evaluation of options against project objectives

Project Objectives	Option 1	Option 2	Option 3	Option 4
Activate the precinct through the provision of a unique cultural offering and visitor experience	×	✓	✓	✓
Rejuvenate a vital piece of Sydney's waterfront cultural heritage	×	✓	✓	✓
Provide facilities that better enable arts organisations to develop world-class experiences and deliver Government objectives	×	✓	Partial	Partial
Create a financially viable operating model for the precinct and its tenants	×	✓	✓	×

Based on the outcomes of an economic appraisal, combined with the assessment of the options' ability to meet the project objectives, Option 2 was adopted as the preferred development option. It was considered that Option 2 most closely resembled the original vision put forward in the Master Plan which was subject to extensive discussions and negotiations with the arts organisations and best reflected their tenancy requirements. It was further considered that Option 2 provided for the development of a financially viable precinct with the expansion of leasable commercial retail space on the ground floor of the precinct.

However, following exhibition of the previous Stage 2 SSDA a number of issues emerged relating to the design and use of the proposed waterfront square. While the NSW Government remains committed to the creation of a public arts and cultural destination at Walsh Bay, it was decided that the waterfront square component of the master plan would not be pursued at this time and it remains subject to further design consideration. It is considered that the precinct requires a level of activation to ensure it ongoing productivity. Although this project does not include the waterfront square, it is considered that a viable level of activation can be achieved through the mix of arts, cultural and commercial uses that is the subject of this SSDA.

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2. Site Analysis

2.1 Site and surrounds

The site generally comprises Pier 2/3, Wharf 4/5, and Wharf 4/5 Shore Sheds. The site has a street frontage to Hickson Road and is shown in Figures 1 and 2. The site is part of the Walsh Bay area which is located adjacent to Sydney Harbour within the suburb of Dawes Point. Walsh Bay is strategically located to the north of Sydney's CBD in the vicinity of major tourist destinations including the Sydney Harbour Bridge, the historic areas of Millers Point and The Rocks, Circular Quay and the Sydney Opera House. The Barangaroo redevelopment precinct is located immediately to the south-west. The site is located within the City of Sydney Local Government Area.

Figure 3: Site Location

Figure 4: Site aerial

Walsh Bay comprises ten berths constructed between 1908 and 1922 for international and inter-state shipping. These are collectively known as the Walsh Bay Wharves. The Walsh Bay Wharves Precinct is listed as an item on the State Heritage Register.

Much of Walsh Bay (excluding Wharf 4/5 and Pier 2/3) was redeveloped between 1997 and 2004 by the NSW Government in partnership with the Walsh Bay Partnership (Mirvac and Transfield).

The Walsh Bay Wharves comprise the following:

- Pier One which contains the Sebel Pier One Sydney Hotel
- Pier 2/3 is the last remaining undeveloped pier. It has approval for cultural uses, temporary arts events and some commercial events.
- Wharf 4/5 which is occupied by the STC, ATYP, BDT and other arts organisations.
- Pier 6/7 which has been redeveloped for residential apartments and associated boat marina
- Pier 8/9 which has been redeveloped for office uses
- Shore Sheds which contain a range of commercial activities, including restaurants, bars, shops and offices.

Given the significant difference in grade between Walsh Bay and Millers Point, there are a number of bridges over Hickson Road which provide pedestrian access between the site and Millers Point. The bridge linking Pottinger Street and Wharf 4/5 is also used for vehicular parking.

Hickson Road is located to the south-west of the wharves and provides the major vehicular access to the site. Hickson Road links the site to Barangaroo to the south-west and Circular Quay and The Rocks to the north-east. Other roads providing access to the site include Pottinger Street which provides access to Millers Point, and Towns Place which also provides access to Millers Point via Dalgety Road and Argyle Street.

The Barangaroo redevelopment project located to the south-west of Walsh Bay comprises three redevelopment areas – Barangaroo Reserve, Central Barangaroo and Barangaroo South. Barangaroo Reserve is located at the northern end of Barangaroo immediately adjacent to Walsh Bay and includes a 300 space car park and cultural facility, known as The Cutaway, below the constructed headland park. Central Barangaroo is intended as a mixed use precinct but is not yet developed. It will include the recently approved Crown Casino. A new underground railway station is being planned for Central Barangaroo as part of the Sydney Metro. Barangaroo South is a major commercial and mixed use centre. Development in this precinct is well advanced.

Photo 1: View looking south-west with shore sheds to the left of photo and Wharf 4/5 to the right.

Photo 2: Pier 2/3 east elevation

Photo 3: Pier 2/3 west elevation

Photo 4: Pier 2/3 northern elevation

Photo 5: Shoresheds north elevation

Photo 6: Shoresheds along Hickson Road showing entry to Wharf 4/5

Photo 7: Wharf 4/5 east elevation

Photo 8: Wharf 4/5 northern end

Photo 9: Wharf 4/5 west elevation

Photo 10: Shoresheds along Hickson Road southern elevation

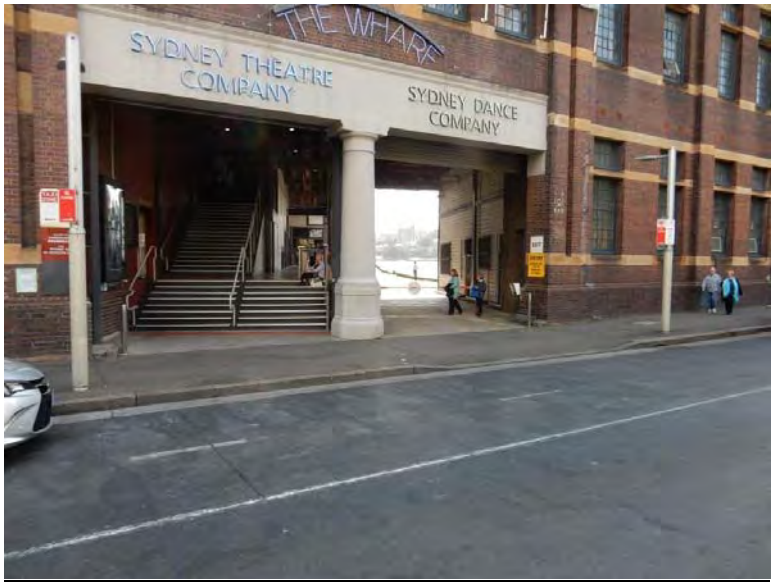

Photo 11: The Wharf Theatre entry (Wharf 4/5)

Photo 12: Commercial development along Hickson Road

Photo 13: Pier One Sydney Harbour to east of site

Photo 14: Shoresheds to west of site (including residential apartments in background)

Photo 15: Wharf 6/7 residential apartments

Pier 2/3

Pier 2/3 is a finger wharf comprising two storeys (and associated shore sheds) and was constructed between 1912 and 1921. It is Sydney's last wharf structure in its original state. Much of it is an empty shell however it does contain some commercial uses. There is a 99 year lease between the Maritime Authority of NSW (now Roads and Maritime Services) and the Arts, Screen and Culture Division of the Department of Planning and Environment for the finger wharf, the portion of open air wharf apron, the pedestrian link bridge and the wharf substructure. The granting of this lease, amongst other things, allows Pier 2/3 to be used for arts, cultural and creative purposes.

The City of Sydney has granted consent for Pier 2/3 to be used as a cultural facility for a range of uses such as rehearsals, exhibitions, workshops, filming and events, including the Sydney Writers' Festival and the Biennale of Sydney. The consent was initially granted on 21 September 2011 for a period of 3 years and has subsequently been extended until 2022.

Wharf 4/5

Wharf 4/5 is a four storey timber building which was built around 1917 and used as a steamship berthing and cargo storage facility until the mid 1970s. The Wharf has been progressively upgraded and adaptively reused since the early 1980s. Ten arts and cultural organisations use the facility which comprises a range of performance venues, rehearsal and workshop spaces, a recording studio, café/restaurants and office accommodation. In particular, Wharf 4/5 accommodates SDC and BDT in the lower shed, along with STC in the upper shed.

Wharf 4/5 is recognised as a highly successful adaptive reuse of an important heritage item. Its redevelopment 30 years ago was the subject of numerous architectural and design awards. However, many of its spaces are no longer fit for purpose and use of the space is not optimised.

Wharf 4/5 Shore Sheds

The Wharf 4/5 Shore Sheds are part of a continuous band of buildings fronting Hickson Road and linking the finger wharves. They are collectively known as the Shore Sheds. The Shore Sheds are linked at the upper level but have several openings at ground level which provide access to the wharf aprons. These entrances break up the Shore Sheds at ground level into several smaller tenancies, some of which are owned by RMS, leased to commercial tenants and outside the scope of this project.

The Wharf 4/5 Shore Sheds are located within the project boundary and accommodate the Choirs group, made up of Sydney Philharmonia Choirs, Gondwana Choirs and Song Company. The Wharf 4/5 Shore Sheds also accommodate administrative offices of various Arts Tenants as well as back-of-house facilities for the STC on the upper levels.

2.2 Land ownership and legal description

Pier 2/3 is legally described as Lot 11 in DP 1138931 and Wharf 4/5 (including shore sheds) is legally described as Lot 65 in DP 1048377. The total area for these lots is 18,090m^2.

A land survey is provided in Appendix 1.

The land owner of the WBACP site is the Roads and Maritime Services (RMS). Both Pier 2/3 (excluding that part of the pier used for commercial uses) and Wharf 4/5 are occupied under various lease arrangements with the Arts, Screen and Culture Division, primarily for arts and cultural uses.

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3. Secretary's Requirements

The environmental assessment requirements (SEARs) for the WBACP were issued on 1 September 2017 by the Secretary of the Department of Planning and Environment (refer Appendix 2).

Table 2 provides a summary of the individual matters listed in the SEARs and where these are addressed in this report or in supplementary material provided as appendices.

Table 2: Secretary's Requirements

ITEM	EIS REQUIREMENT	SECTION
General Requirements	General Requirements ▪ Environmental Planning and Assessment Act 1979 ▪ Clause 6 & 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*	Throughout EIS and appendices.
	Environmental Risk Assessment ▪ EIS must include environmental risk assessment ▪ EIS must include - Adequate baseline data - Consideration of potential cumulative impacts - Measures to avoid, minimise and, if necessary, offset predicted impacts	Throughout EIS and appendices.
	Capital Investment Value ▪ The EIS must also be accompanied by a report from a qualified quantity surveyor providing: - a detailed calculation of the capital investment value (CIV) - an estimate of jobs that will be created during the construction and operational phases of the proposed development - certification that the information provided is accurate at the date of preparation	Submitted under separate cover
Key Issues	Environmental Planning Instruments ▪ State Environmental Planning Policy No 55 – Remediation of Land ▪ State Environmental Planning Policy (Infrastructure) 2007 ▪ State Environmental Planning Policy (State and Regional Development) 2011 ▪ Sydney Regional Environmental Plan No 16 – Walsh Bay ▪ Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	Sections 6.2 and 6.3
	Policies, Guidelines and Planning Agreements ▪ NSW State Priorities ▪ A Plan for Growing Sydney ▪ Towards Our Greater Sydney 2056 ▪ Draft Central District Plan ▪ NSW Long Term Transport Master Plan ▪ Guide to Traffic Generating Development ▪ NSW Planning Guidelines for Walking and Cycling ▪ Sydney City Centre Access Strategy ▪ Sydney's Cycling Future ▪ Sydney's Walking Future ▪ NSW Bike Plan 2010 ▪ Development Near Rail Corridors and Busy Roads ▪ Heritage Council Guidelines Assessing the Significance of Archaeological Sites and Relics ▪ Walsh Bay Regional Environmental Study 1988 ▪ Walsh Bay Redevelopment Conservation Guidelines 1989 ▪ Crime Prevention Through Environmental Design Principles	Section 6.4

ITEM	EIS REQUIREMENT	SECTION
	Built Form and Urban Design ▪ Address design quality, with specific consideration of the overall site layout, axes, vistas and connectivity, open spaces and edges, primary elements, gateways, façade, rooftop, mechanical plant, massing, setbacks, building articulation, materials and colours.	Section 7.1 and Architectural Design Report at Appendix 20
	Public Domain and Public Access ▪ Detail and outline the interface between proposed uses and public domain and identify key pedestrian linkages with and between other public domain spaces ▪ Include details of any awnings and signage proposed in the public domain ▪ Prepare an accessibility report	<u>Public domain</u> Section 7.2 and Architectural Design Report at Appendix 20. <u>Signage</u> Section 5.10 and Wayfinding and Signage Report at Appendix 6. <u>Accessibility</u> Section 5.9 and Accessibility Report at Appendix 5.
	Amenity ▪ Address and demonstrate a suitable level of environmental amenity in respect of solar access, acoustic and visual privacy, servicing requirements (including waste management, loading zones, mechanical plant) and access to views ▪ Assess design construction and any public safety issues.	<u>General</u> Section 7.8 and Architectural Design Report at Appendix 20. <u>Noise</u> Section 7.7 and Noise Impact Assessment at Appendix 19. <u>Waste Management</u> Section 7.16 and Waste Management Plan at Appendix 29. <u>CPTED</u> Section 7.13 and CPTED Report at Appendix 27. <u>Public Safety Maritime</u> Section 7.9 and Maritime Impact Assessment at Appendix 22. <u>View Impacts</u> Section 7.5 and Visual Impact Assessment at Appendix 18.
	Heritage and Archaeology ▪ Prepare a Heritage Impact Assessment that: - Describes the heritage significance of all heritage items on and surrounding the site including (including external, internal and moveable heritage features) and those surrounding the site including submerged maritime heritage and all archaeology (historical, maritime and Aboriginal) - Clearly identifies on plans the significance of fabric, building components and spaces that will be impacted by the proposed works	<u>Heritage</u> Section 7.3 and Heritage Impact Statement at Appendix 14. <u>Archaeology</u> Section 7.4 and Archaeological Assessment at Appendix 17. <u>Visual Impact</u>

ITEM	EIS REQUIREMENT	SECTION
	- Describes the potential impact of the proposal on the significance of the site, its components, significant views and values, and includes measures to mitigate any impacts - Assesses potential impacts of the proposal on Aboriginal cultural heritage values and where identified, include measures to avoid, conserve or mitigate against the impact and consult with Aboriginal people to identify the significance of the cultural heritage item - Clearly assesses the cumulative impact of the proposed works to the precinct and its setting, including measures to mitigate any impacts - Provides a visual analysis, including before and after images/perspectives of the proposed works area, to provide an understanding of any visual impacts - Addresses the proposal against the policies of the Conservation Management Plans for the site and specific buildings and the proposed adaptive reuse measures to minimise impacts on the buildings, moveable heritage and any archaeology - Proposes opportunities to interpret the site's heritage significance and archaeology maritime and historical association - Provides a framework to ensure elements of the public domain (including outdoor furniture) maintain a consistent visual character throughout the precinct. ▪ Should any below ground works occur, an Archaeological Assessment and Management Plan must be prepared that: - Is carried out by a suitably qualified archaeologist - Discusses the likelihood of significant historical, maritime and Aboriginal archaeology on the site and how this may be impacted by the project - Includes measures to mitigate any impacts	Section 7.5 and Visual Impact Assessment at Appendix 18.
	Noise and Vibration ▪ Include a noise and vibration assessment prepared by a suitably qualified acoustic consultant that: - Assesses construction noise and vibration impacts, including cumulative impacts from all concurrent construction activities - Assesses operational noise from use of buildings and any commercial/food and drink premises - Assesses cumulative noise impacts from the operation of the development and nearby premises - Assesses operational vibration from use of the premises - Outlines reasonable and feasible measures to minimise and mitigate potential noise and vibration impacts within the precinct and to surrounding occupiers of land *Relevant Policies and Guidelines* ▪ *NSW Industrial Noise Policy 2000 (EPA)* ▪ *NSW Industrial Noise Policy – application notes 2013 (EPA)* ▪ *Interim Construction Noise Guideline 2009 (DECC)* ▪ *Assessing Vibration: A Technical Guideline 2006 (DECC)* ▪ *NSW Road Noise Policy 2001 (DECCW)* ▪ *NSW Road Noise Policy – application notes 2013 (EPA)*	Section 7.7 and Noise and Vibration Impact Assessment at Appendix 19.
	Transport and Accessibility ▪ Include a Transport Impact Assessment that includes, but is not limited to, the following: <u>Construction</u> - An assessment of traffic and transport impacts during	Section 7.6 of EIS Traffic Impact Assessment at Appendix 15. Green Travel Plan at Appendix 16.

ITEM	EIS REQUIREMENT	SECTION
	construction and how these impacts will be mitigated for any associated traffic, pedestrians, cyclists, harbour vessel movements and public transport operations, including preparation of a draft Construction Pedestrian Traffic Management Plan. This Plan shall include vehicle routes, truck numbers, hours of operation, access arrangements and traffic control measures for all works. - An assessment of cumulative impacts associated with other construction activities, including the construction of the Sydney Metro and Southwest project and other transport projects - Detail construction vehicle routes, peak hour and daily truck movements, access arrangements and traffic control measures at all stages of construction - An assessment of construction impacts on road safety at key intersections and locations for potential pedestrian, vehicle and bicycle conflicts - Detail access arrangements for workers, emergency services and provision of safe and efficient access for loading and deliveries <u>Operation</u> - Provide accurate details of daily and peak hour vehicle, public transport, pedestrian and bicycle movements, existing traffic and transport facilities and assess impacts of anticipated traffic generation on: o Local road network and intersection capacity o Operation of existing and future transport networks including metro, train, light rail, ferry, bus, cyclist and pedestrian networks o Planned and approved developments in the area including Barangaroo - Detail the provision of vehicle (including point to point transport), pedestrian, bicycle, motor cycle, taxi, bus access and parking integration with existing transport networks and assess adequacy of public transport to meet future demand of proposed development - Details of existing and proposed vehicular access, taxi and car parking arrangements for workers and visitors (cars, point to point transport, coaches/buses and taxi ranks), including compliance with parking codes and Australian Standards - Demonstrate appropriate provision, design and location of on-site bicycle parking and detail how it would be integrated with the existing bicycle network - Details of vehicle management to minimise impacts on the road network and ensure pedestrian safety - Ensure safe, sufficient and efficient access to loading, deliveries and servicing of the development - Details of sustainable travel initiatives for workers and visitors, especially end-of-trip facilities and pedestrian and cyclist facilities located in secure, convenient and accessible areas, incorporating lighting and passive surveillance - Proposals to encourage employees and visitors to make sustainable travel choices such as walking, cycling and using public transport, including wayfinding strategies and preparation of a Green Travel Plan - Detail any expected improvements in public transport, pedestrian and bicycle accessibility to Walsh Bay in the	Construction Pedestrian and Traffic Management Plan at Appendix 21.

ITEM	EIS REQUIREMENT	SECTION
	near future, including the anticipated frequency of future services	
	Recreational Fishing Access ▪ Describe the historical and current public use of the site for recreational fishing ▪ Outline how public access to recreational fishing at the site would be maintained or enhanced because of the proposed development during construction and operation	Section 4.3 and Consultation Outcomes Report at Appendix 3.
	Operational Management ▪ Include an Operational Plan of Management addressing day-to-day operations. The Plan shall include appropriate management and mitigation measures for dealing with larger numbers of visitors to the precinct when conducting events within the buildings.	Section 5.13 and Operational Plan of Management at Appendix 10.
	Contamination ▪ Demonstrate compliance with the requirements of SEPP 55 ▪ If remediation works are required, include a Remedial Action Plan prepared in accordance with the contaminated land planning guideline under section 145C of the EP&A Act and relevant guidelines under section 105 of the *Contaminated Land Management Act 1997* ▪ The RAP must be accompanied by a Site Audit Statement prepared by a NSW EPA accredited site auditor certifying that the site can be made suitable for the proposed use(s)	Sections 6.3.1 and 7.10 and Phase 2 Environmental Site Assessment at Appendix 26.
	Ecologically Sustainable Development (ESD) ▪ Detail how ESD principles will be incorporated in the design, construction and ongoing operation of the development. ▪ Describe the measures to be implemented to minimise consumption of resources, energy and water, including details of alternative energy and water supplies, rainwater harvesting, proposed end uses of potable and non-potable water, demonstration of water sensitive urban design and any water conservation measures.	Sections 5.15 and 10.2 and Sustainability Framework at Appendix 11.
	Water, Drainage, Stormwater and Groundwater ▪ Prepare an Integrated Water Management Plan detailing stormwater and wastewater management, including any re-use and disposal requirements, drainage concept for the site, demonstration of water sensitive urban design and any water conservation measures, and identification of any appropriate water quality management measures.	Sections 5.7 and 7.11 and Integrated Water Management Plan at Appendix 13.
	Sediment, Erosion and Dust Controls ▪ Identify measures and procedures to minimise and manage generation and off-site transmission of sediment, dust and particles ▪ Consideration should be given to assessment and management of any acid sulfate soil and potential acid sulfate soil	Section 7.12 and Preliminary Environmental, Construction and Site Management Plan at Appendix 26.
	Environmental, Construction and Site Management Plan ▪ Provide an Environmental and Construction Management Plan which includes: - Community consultation, notification and complaints handling - Impacts of construction on adjoining development and proposed measures to mitigation construction impacts - Traffic impacts, including the impact of any construction vessel movements on marine traffic in Sydney Harbour - Noise and vibration impacts on and off site - Air quality impacts on the neighbourhood - Odour impacts - Water quality management for the site, including	Section 7.15 and Preliminary Environmental, Construction and Site Management Plan at Appendix 26.

ITEM	EIS REQUIREMENT	SECTION
	minimisation of potential impacts on marine ecology - Construction waste classification, transportation and management methods in accordance with relevant guidelines	
	BCA and Fire Safety ▪ Include a Fire Engineering Report demonstrating that proposed development can achieve compliance with BCA and fire safety requirements ▪ The Fire Engineering Report shall address any relevant requirements of Fire and Rescue NSW ▪ Include a mass Emergency Evacuation Plan/Strategy prepared in consultation with Fire and Rescue NSW	Section 5.11 BCA Report – Appendix 7 Fire Engineering Report – appendix 8 Emergency Evacuation – Section 5.12 and Emergency Management Strategy at Appendix 9.
	Utilities ▪ Address the existing capacity of the site and any augmentation requirements for utilities, including staging of infrastructure arising from the development in consultation with relevant agencies	Section 5.16 and Utilities Infrastructure Report at Appendix 12.
	Flooding, Climate Change and Sea Level Rise ▪ Address the potential risks from flooding, wave movements and sea level rise on the development and detail any proposed mitigation measures	Section 7.9 and Maritime Impacts Assessment Report at Appendix 22.
	Plans ▪ Include all relevant plans, architectural drawings, diagrams and relevant documents as required under Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*	Appendix 4 and elsewhere in EIS and Appendices as required.
	Consultation ▪ Consult with relevant local, State and Commonwealth authorities, service providers, community groups and affected landowners, particularly the following agencies: - Office of Environment and Heritage - City of Sydney Council - Central Sydney Planning Committee - Environment Protection Authority - Roads and Maritime Services - Transport for NSW (including CBD Coordination Office) - Heritage Council of NSW - Port Authority of NSW - NSW Police - Department of Primary Industries including Fisheries NSW - Fire and Rescue NSW - Sydney Water - Relevant recreational fishing industry groups - Local Aboriginal Land Council and stakeholders, if relevant ▪ Describe the consultation process and any issues raised by agencies and identify where amendments to the design have been made or explain why amendments have not been made to address an issue	Section 4 and Consultation Outcomes Report at Appendix 3.

4. Consultation

A Consultation Outcomes Report has been prepared by Ethos Urban (October 2017) and is provided at Appendix 3. It outlines stakeholder consultation undertaken during the preparation of this SSDA as well as consultation proposed to be undertaken during exhibition of the SSDA/EIS. The following is a summary of the report.

4.1 Pre-lodgement engagement

Consultation with the agencies and community groups shown in Table 3 occurred during August and September 2017, prior to lodgement of the SSDA. It should be noted that the project team contacted all agencies to request meetings, however given the nature of the project, and the fact that they had been consulted with during the previous SSDA, multiple stakeholders confirmed they did not require additional meetings.

Table 3: Pre-lodgement consultation

Agency	Invitation sent	Meeting accepted	Follow up consultation during formal exhibition period
Central Sydney Planning Committee	✓	✓	✓
Environment Protection Authority	✓	x	x
Roads and Maritime Services	✓	x	x
Transport for NSW (including CBD Coordination Office)	✓	x	✓
Heritage Council of NSW	✓	✓	x
Port Authority of NSW	✓	✓	x
NSW Police	✓	x	x
Department of Primary Industries including Fisheries NSW	✓	✓	✓
Fire and Rescue NSW	✓	✓	x
Sydney Water	✓	x	x
Relevant recreational fishing industry groups	✓	x	✓
Local Aboriginal Land Council and stakeholders, if required	x	x	x
Community groups and affected landowners	✓	✓	✓
Broader local residents and interested people	✓	x	✓

The pre-lodgement communications and stakeholder engagement activities included:

- Reviewing engagement activities, reports and submissions from the 2016 public exhibition;
- Developing a Communications and Engagement Strategy to guide the consultation process to ensure timely and proactive communication of important information and to identify opportunities for further active engagement;
- Managing the existing 1800 community information number;
- Meetings with all existing Walsh Bay arts tenants; and
- Meetings/consultation with the following authorities and community stakeholder groups about the new SSDA:
    - City of Sydney and Central Sydney Planning Committee;
    - Department of Primary Industries – Fisheries;
    - Ports Authority NSW;
    - NSW Fire and Rescue;
    - Roads and Maritime Services, Transport for NSW and Transport CBD Coordination Office;
    - Heritage Division as delegate for NSW Heritage Council; and

- Millers Point Resident Action Group.

A summary of the meetings and project team responses is provided in Section 4.0 of the Consultation Outcomes Report at Appendix 3. It should be noted that the project team contacted all agencies to request meetings, however given the nature of the project, and the fact that they had been consulted with during the previous SSDA, they did not require follow up meetings. The following agencies did not require a meeting with the project team:

- Office of Environment and Heritage;
- NSW Police;
- Sydney Water; and
- Environment Protection Authority.

The project team did not meet with the Local Aboriginal Land Council because there is no Aboriginal Heritage on the site. However, the project is committed to discussing concepts for interpretation with relevant Aboriginal stakeholders. This process will occur during the detailed design stage of the project.

4.2 Post lodgement engagement

Following lodgement of the SSDA, two Community Information Sessions will be held on Wednesday 15 November 2017 from 12pm until 2pm and 5.30pm until 7.30pm. Local residents, arts tenants and businesses as well as other interested stakeholders will be invited to visit Walsh Bay, view the plans, meet the project team and provide important feedback.

The Community Information Sessions will stimulate enthusiasm and awareness of the arts and cultural offerings in the Precinct, enable the project team to understand local community sentiment about the project and provide people with an opportunity to review plans while speaking to members of the project team.

The format will be informal drop in style events, with project team members presenting the updated plans, answering questions about the proposed redevelopment and receiving feedback. Two times have been chosen to cater for both local businesses (daytime), and local residents (evening).

4.3 Recreational fishing

Sydney Harbour has a long association with recreational fishing along the foreshore. Fishing offers the opportunity for an affordable (free) recreational activity that can be undertaken either alone or in groups. Furthermore, fishing is an activity that can be undertaken by a range of people of different ages, cultural backgrounds and socio-economic circumstances.

In pre-colonial times, the Aboriginal people utilised the harbour foreshore as a rich food source. This continued in post-colonial times where many people engaged in fishing as a means of obtaining food. In more recent times, fishing is being undertaken as a more recreational activity with less emphasis on food.

As Sydney has developed over the years, vantage points to participate in fishing have reduced. Foreshore development has either excluded public access or prevented fishing activities from being undertaken. The Walsh Bay wharves are one of the last remaining vantage points for deep water fishing within the harbour.

As access to the Walsh Bay wharves is protected through public easements, fishing has become a popular activity. Walsh Bay attracts an array of people of different ages and cultural backgrounds who predominately utilise the end of Pier 2/3 for recreational fishing.

The WBACP project will not preclude ongoing fishing activities from the wharves during operation. For safety reasons access to the wharves during construction will not be feasible and hence fishing will be restricted during this time. Once operational it is envisaged that fishing activities would be supported through better infrastructure such as rubbish bins and public toilets. Furthermore, the Precinct Manager will work with Fisheries NSW during operation to monitor fishing activities and ensure the wharf is shared amongst an array of users.

4.4 Conclusion and next steps

In accordance with the SEARs for consultation and stakeholder engagement, a strategy has been implemented to inform local residents, landowners, businesses and key agencies about the SSDA. This will not only ensure that the community have a clear understanding of the proposal but has also provided an important mechanism to gather feedback prior to lodgement of the SSDA.

Opportunities will continue to be provided for local residents, landowners, businesses and key agencies to make enquiries and provide feedback as the development progresses, culminating in the information sessions on Wednesday 15 November 2017.

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5. Project description

5.1 Project overview

This SSDA seeks consent for the following:

- Internal reconfiguration and upgrading of Pier 2/3, Wharf 4/5 and Shore Sheds 4/5 to provide for improved rehearsal spaces, and in some cases performance spaces, for the ACO, ATYP, SDC, Bell Shakespeare, BDT, Sydney Philharmonia Choir, Gondwana Choir and Song Company as well as improved back-of-house and administrative facilities;
- External alterations to Pier 2/3 and Wharf 4/5 to provide for improved street entry at Hickson Road, additional external stairs, lifts and balconies designed as a contemporary interpretation of the original gantries reflecting the precinct's former industrial heritage;
- Installation of new glazing and doorways within the existing chequerboard design framework to allow for improved access and views in and out of the wharf buildings;
- Modification to the roofs of Pier 2/3 and Wharf 4/5 contained within the central valleys to provide for improved performance spaces and acoustics and to accommodate plant without the need for significant change to the roof profiles;
- Three new commercial spaces within Shore Sheds 4/5 for use as shops, cafes, restaurants, small bars and the like to activate the precinct;
- Use of the ground floor of Pier 2/3 for arts and cultural events and festivals including Sydney Writers' Festival and Biennale as well as for venue hire;
- Installation of shopfront glazing and retractable awnings to the north of the proposed commercial uses in Shore Sheds 4/5 similar to the existing awning on the Pier 2/3 Shore Sheds café;
- Early construction works comprising infrastructure upgrades, demolition and hazmat removal.

The construction program is estimated to take approximately 24 months commencing in July 2018.

Demolition and architectural plans have been prepared by Tonkin Zulaikha Greer (TZG) and are provided at Appendix 4.

5.2 Capital investment value and job creation

WT Partnership has prepared an estimate of the Capital Investment Value (CIV) for the WBACP works in accordance with the *Environmental Planning and Assessment Regulation 2000* and the NSW Department of Planning 'Planning Circular' (Ref. PS 10-008) published 10 May 2010. A copy of WT Partnership's report is provided under separate cover.

The estimated CIV for the project is $137,686,470 (excluding GST). This estimated CIV includes all design and construction costs together with all relevant civil and infrastructure works, site services, plant and equipment and all anticipated labour costs.

As noted in the Request for SEARs for the SSDA (INSW, August 2017), it is anticipated that the project will generate 600 additional jobs during construction and 70 additional jobs during operation.

5.3 Pier 2/3

The proposed changes to Pier 2/3 are outlined below and detailed in the plans at Appendix 4.

Internal alterations

Internal alterations and reconfiguration to provide for the following:

- Performance venues for ACO, Bell Shakespeare and ATYP;
- Rehearsal rooms, production workshops, back of house and administrative facilities for ACO, ATYP and Bell Shakespeare;

- Function/commercial spaces and foyer spaces, some of which extend out onto external gantry platforms (balconies) providing breakout space for internal foyers and allowing views of outdoor performances;
- Mezzanine spaces for administrative and back of house facilities;
- Upgrades to meet compliance with current BCA, DDA and fire codes;
- New lifts and stairs;
- Public toilets;
- Removal of some storey posts and beams to facilitate internal reconfiguration and new uses;
- Retention of a large proportion of the ground floor in its existing 'raw' heritage state for arts and cultural events and functions, venue and commercial hire, as well as the Sydney Writers' Festival and Biennale of Sydney.

External alterations

External alterations and additions comprising:

- Three new balconies on the western elevation and two balconies on the eastern elevation to provide breakout space from the internal public areas. The balconies have been designed to echo the form and detailing of the original gantries;
- Three new external stairs on the western elevation and one new set of stairs on the eastern elevation to provide fire escape from the upper level;
- New external lift for access at the north end of the western facade to provide accessible travel to ACO offices and the function space on Level 1;
- Installation of glazing in existing cargo sliding door openings and other solid panels on the eastern and western elevations to allow for views into and out of the building. The new glazing has been located to respect the chequerboard rhythm of the building. Other than those in front of the balconies, new openings are screened with louvres adapted from the existing sidings to mimic the solidity of the existing façade;
- Installation of three new openings on the northern elevation. At the upper level, the central two bays will be replaced with glazing, providing Harbour views from the independent function space. At the lower level, the north eastern corner is opened up and replaced with glazing, reinterpreting the original building which was open in this corner;
- Roof penetrations within the central valley at the southern and northern end to accommodate mechanical plant and associated structural modifications including truss strengthening;
- Raising of the external floor level on the eastern side by introducing a new raised deck and continuous set of stairs beyond the existing column line;
- A new canopy on the east facade above the loading area in order to provide shelter for the safe movement of goods. The canopy will be a contemporary element that interprets historical loading platforms that were present.

5.4 Wharf 4/5

The proposed changes to Wharf 4/5 are outlined below and detailed in the plans at Appendix 4.

Internal alterations

- Internal alterations and reconfiguration to the BDT tenancy to provide for:
  - Upgrade of the main rehearsal and performance space to provide improved daylight and natural ventilation;
  - Upgraded foyer and exhibition space along the eastern frontage;
  - Improved administrative space at mezzanine level including a new lift;
  - Provision of function space and kitchen at ground level of northern end of wharf;

  - New entrance to BDT and new glazing in bays of sliding cargo doors, opening up the foyer and main studio to Wharf 4 apron;
  - Improved staff amenities.
- Minor internal alterations to the SDC tenancy including:
  - Reducing the existing workshop space to create a fifth dance studio;
  - Upgrading administration and reception areas;
  - Improved staff amenities.
- Removal of some storey posts and beams to facilitate internal reconfiguration and new uses;
- Provision of public toilets;
- Provision for administrative space for the Choirs in the centre of Wharf 4/5 between SDC and Bangarra

External alterations

- Three new external stairs on the eastern elevation and one new set of stairs on the western elevation to provide fire escape from the upper level;
- Two external lifts on the eastern elevation to provide for accessible travel and one external goods lift on the western elevation;
- Two roof penetrations within the central valley, one above the STC workshop to allow theatre sets to be built at full height and one above STC Theatre 1 to improve sight lines, allow for clear head height to technical zones and enable flexible seating configurations;
- New platform within the central valley of the roof at northern end to accommodate mechanical plant;
- Raising of timber wharf deck adjoining the SDC café and opening of facade with new glazing;
- Improved street entry at Hickson Road involving relocation of the stairs to allow for an improved landing and point of arrival to the STC;
- New entries along the wharf located to respect the chequerboard rhythm of the building.

5.5 Shore Sheds 4/5

The proposed changes to the Shore Sheds 4/5 include:

- Relocation of The Choirs Rehearsal space to the central shore shed opposite the SDC Café;
- Provision of three new commercial tenancies at ground and mezzanine levels, one in the shore sheds to the west of Wharf 4/5 and two in the centre of the shore sheds. Future use of these tenancies will be subject to separate development applications;
- Precinct Manager’s office;
- Provision for plant at ground and mezzanine levels;
- Bike storage for 35 bicycles and other storage space for use in the precinct;
- Provision of a waste room in the western end of the shore sheds.

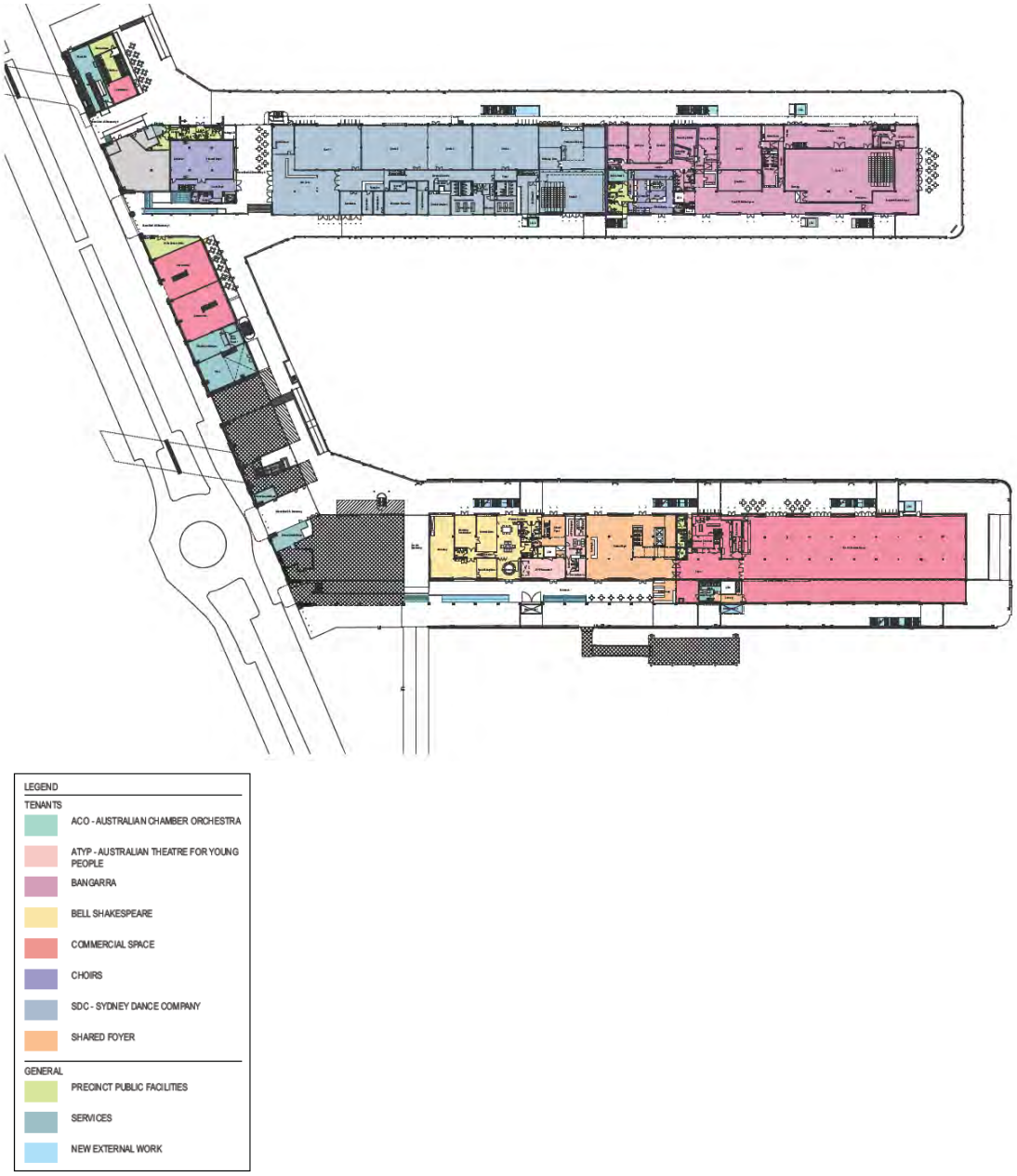

Figure 4: Ground Floor Layout

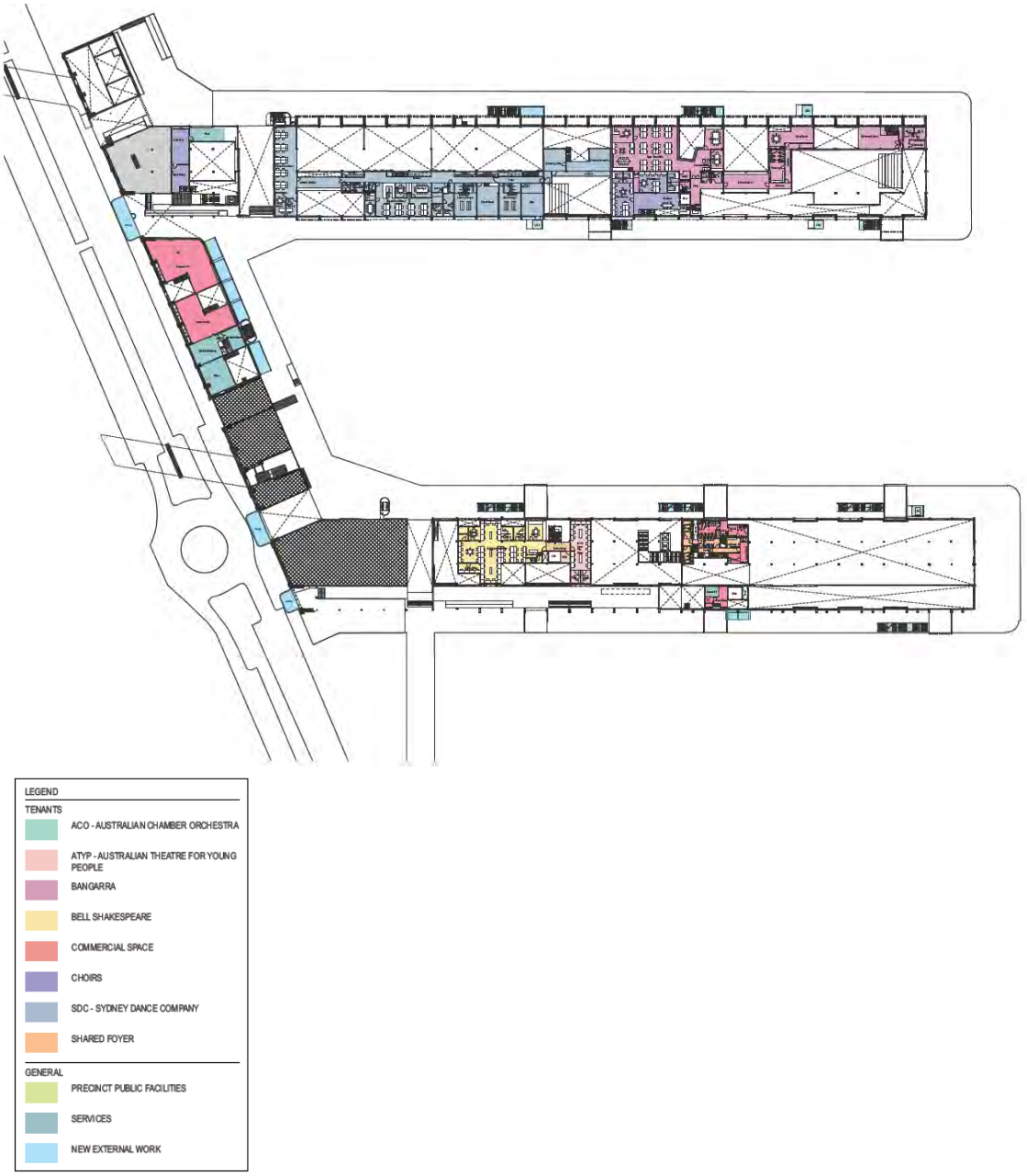

Figure 5: Mezzanine Layout

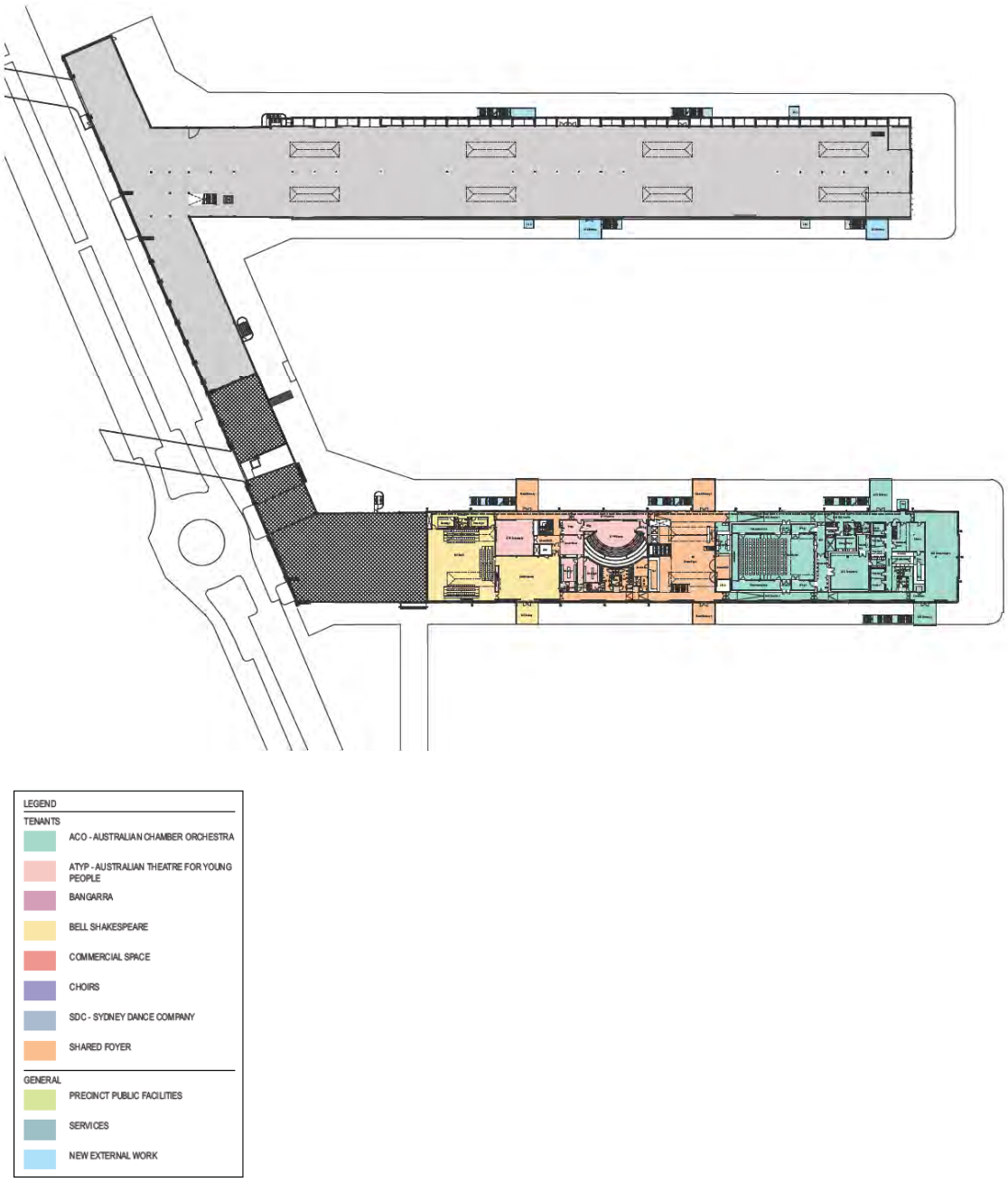

Figure 6: Level 1 Layout

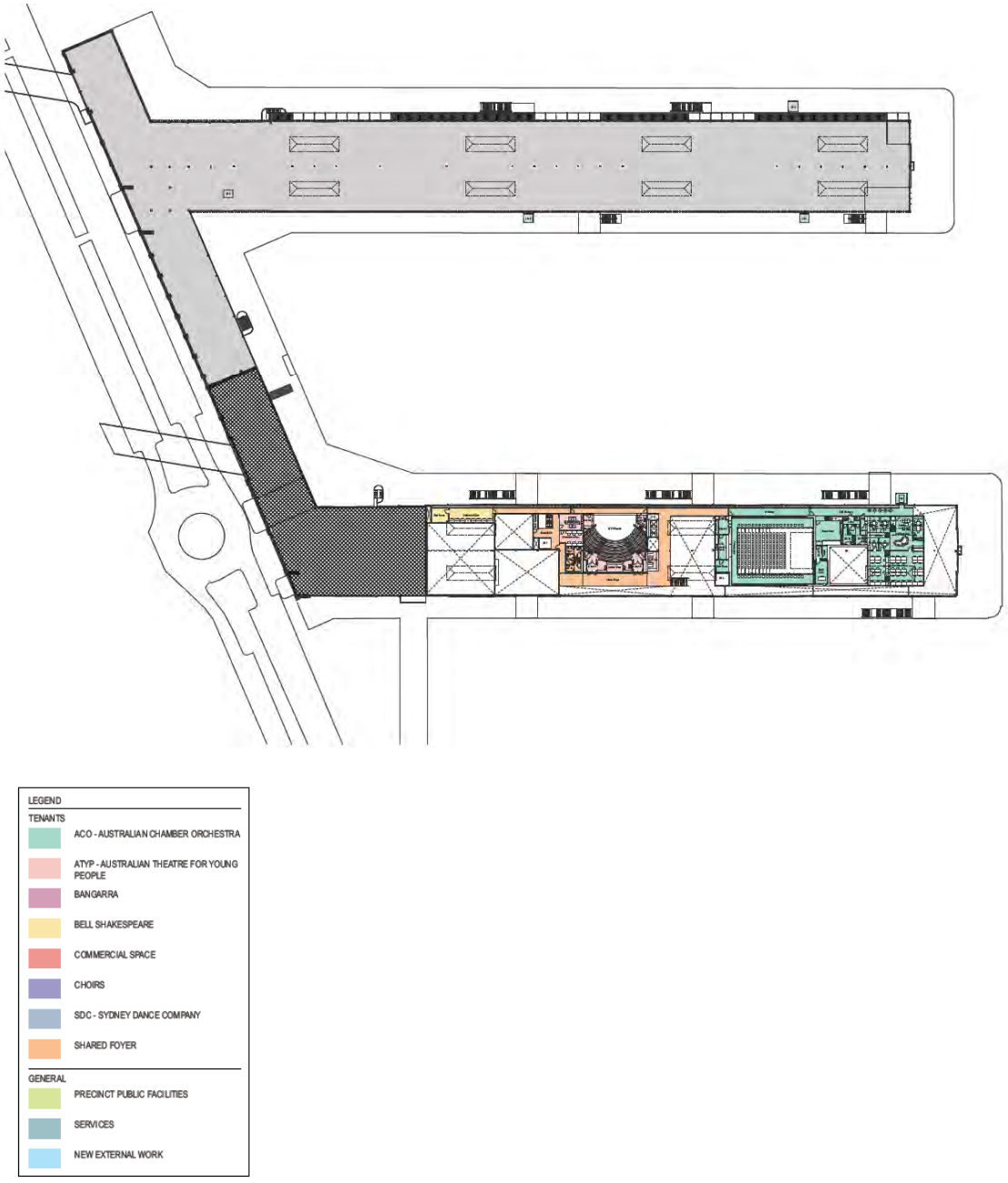

Figure 7: Level 2 Layout

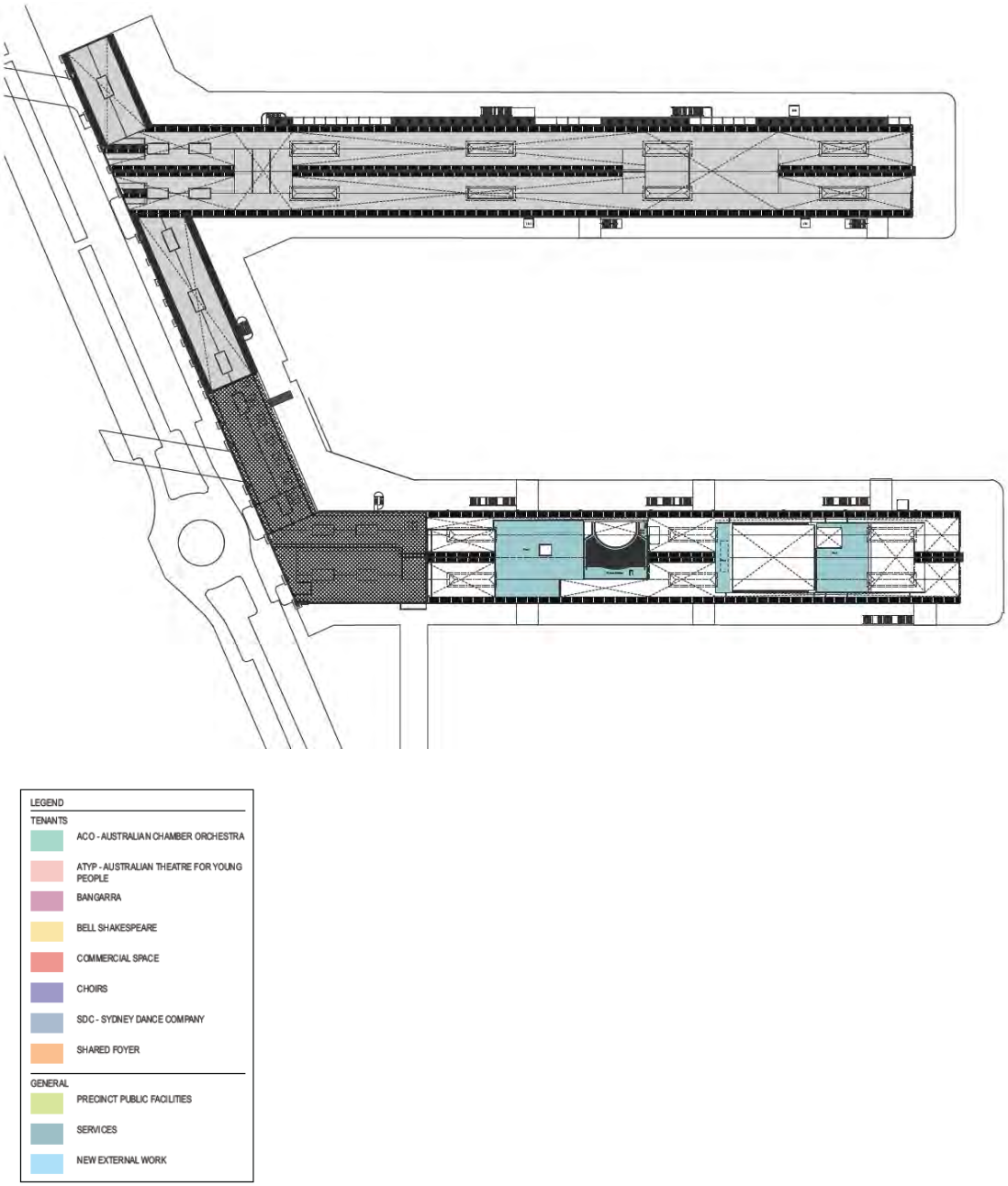

Figure 8: Level 3 Layout

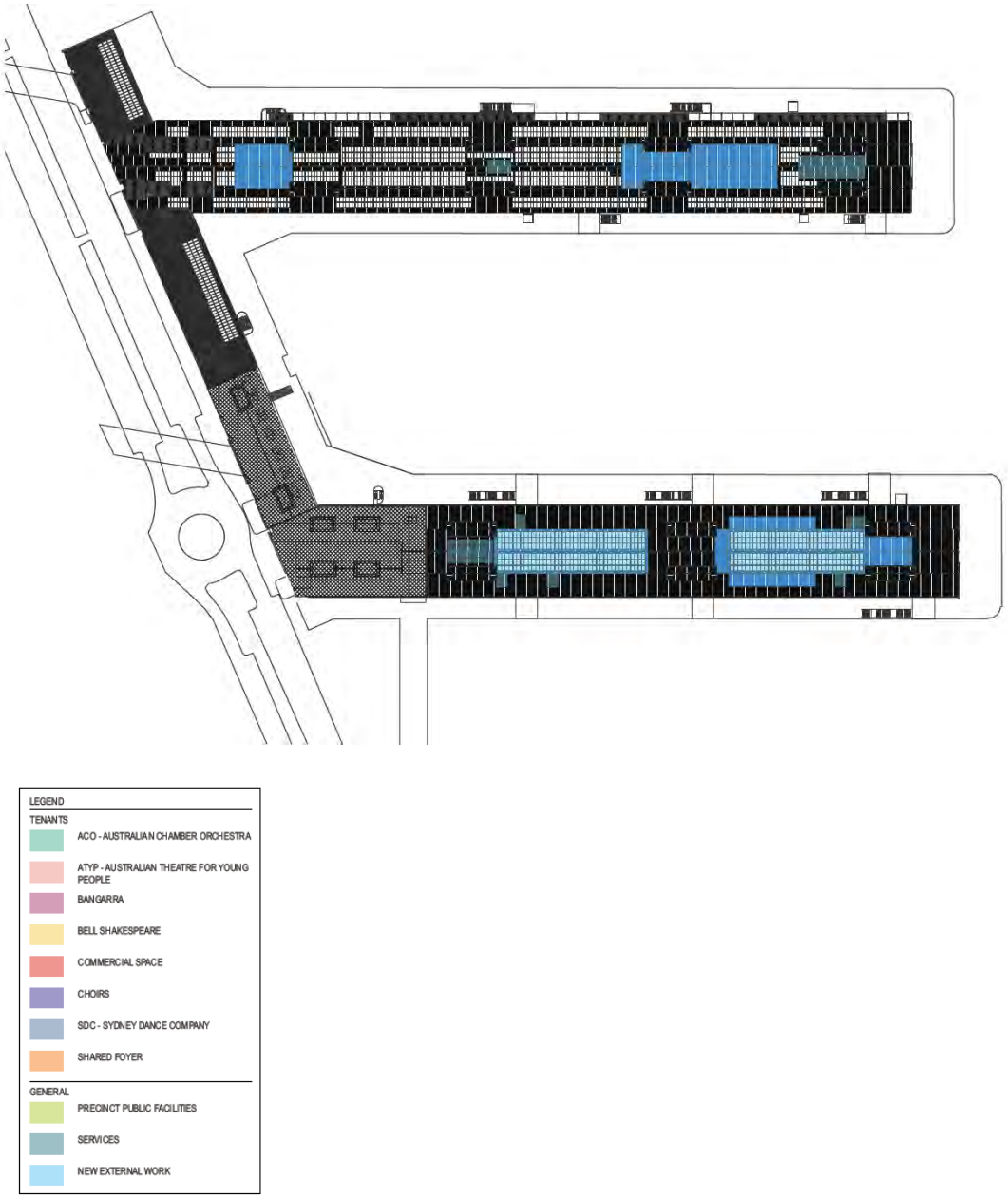

Figure 9: Roof Layout

5.6 Structural engineering

The existing substructure consists of turpentine piles driven through the seabed down to bedrock. The existing superstructure is a framework of heavy ironbark columns, beams, and floor joists, all sheltered by existing Oregon roof truss frames and purlins.

Both substructure and superstructure have been subjected to a number of structural maintenance and upgrading programs over their lifetime. Apart from general repairs to the old structure, other structural changes involved the removal of internal columns with new steel transfer framing, new steel framed stairs and lift shafts, new steel and timber framed mezzanines floors, roof plant platforms, and addition of an external concrete apron slab all round.

The proposed upgrade and alterations involve removal of additional internal columns, replacement of some columns previously removed, additional stairs, lifts and mezzanine floors throughout, raised roof profile in parts, and some additional roof plant platforms.

The underlying structural design intent is to treat the existing structure and heritage fabric with a high priority and to minimise the structural impact whilst expressing the existing structure where possible. Different structural approaches and systems have been considered, with the least invasive adopted.

With the proposed upgrade and alterations it is inevitable that loading on the existing structure would increase. At locations where existing structural members become overloaded, where possible the existing structure is utilised by strengthening with steel plates and members in a manner acknowledging their heritage, rather than removing and replacing with new.

For the proposed performance and theatre type building use and increased number of occupants, a number of acoustic and fire safety related design aspects require upgrading. Similar to the structural alterations and strengthening, a number of approaches and systems were considered. Where achievable, the existing timber structure was reviewed and deemed adequate to provide the required insulation and protection. For existing structural elements that require fire protection, intumescent paint is specified for its minimalist impact on the existing form.

The structural design of the WBACP external alterations acknowledges the history and heritage aspects of the existing structure and environment in which it is located. Structural solutions will be considered and adopted based on the most minimalist impact on the existing structure and heritage fabric. Existing structure will be sensitively re-used where possible, and all new structure will be detailed to complement and express the existing.

5.7 Land uses

Development consent is sought for the adaptive reuse of the WBACP as detailed below.

Pier 2/3

Pier 2/3 is to be adaptively reused to accommodate the ACO, Bell Shakespeare and ATYP arts organisations, including the provision of the following performance spaces:

- ACO auditorium accommodating up to 300 people
- ATYP theatre and rehearsal room accommodating up to 200 people
- Bell Shakespeare rehearsal space for up to 300 people

A large proportion of the ground floor of Pier 2/3 will be retained in its existing ‘raw’ heritage state for arts and cultural events and functions as well as the Sydney Writers’ Festival and Biennale. A kitchen will be installed to assist with catering. The space will also be available for hire for public and private functions. This space has the capacity to accommodate up to a maximum of 1,300 people at a standing function and 650 people sitting.

An additional function space for the ACO is to be provided at the northern end of Level 1 accommodating up to 300 people.

Wharf 4/5

A new function space for the BDT will be provided at the northern end of Wharf 4/5. No other changes to the uses in Wharf 4/5 are proposed.

Shore Sheds

Shore Sheds 4/5 will be adaptively reused to provide performance and rehearsal spaces for the Sydney Philharmonia Choir, Gondwana Choir and Song Company. The new performance and rehearsal space will be located on the ground level of the central Shore Sheds 4/5 opposite the SDC café.

Three new commercial spaces are proposed within Shore Sheds 4/5 which are intended to activate the Precinct with uses such as shops, restaurants, cafes and/or small bars. The specific use of these spaces will be subject to separate future development application(s). One commercial space will be located within the Shore Sheds to the west of Wharf 4/5 while the other two spaces are located to the east of Wharf 4/5.

Shore Sheds 4/5 are also proposed to be reconfigured to provide for an office for the Precinct Manager, as well as bike storage, waste room and new plant to support the redevelopment.

The layout of uses within Pier 2/3, Wharf 4/5 and the Shore Sheds is shown on the general arrangement plans at Appendix 4.

5.8 Vehicle and pedestrian access

It is not proposed to provide any staff or visitor car parking on-site. This is generally consistent with the current operation of the site.

In order to facilitate loading movements to and from the site it is proposed to maintain the existing crossovers from Hickson Road.

A new loading facility is to be provided on Pier 2/3. In order to maintain the heritage values of the site, the provision of a traditional recessed loading dock was not considered appropriate. As such, the provision of a loading dock contained within the existing apron was identified as the preferred loading solution.

A loading platform and/or leveller will be constructed on the east side of Pier 2/3. The arrangement will require the loading vehicle to drive past the platform and reverse adjacent to the building. The loading vehicle would then travel to the northern end of the pier where it would turn around and then travel back along the pier to Hickson Road.

Vehicle access to the precinct at Hickson Road level would be altered such that service vehicles access via the perimeter only during typical operation with up to 8.8-metre Medium Rigid Vehicles (MRV) able to access Pier 2 and 6.4-metre Small Rigid Vehicles (SRV) able to access Wharf 5. Vehicle size restrictions are largely determined by the available manoeuvring area at the northern end for vehicles to be able to enter/ exit in a forward direction. Occasional access to allow vehicles to enter in front of the Shore Shed and to the inside aprons of Pier 2/3 and Wharf 4 for maintenance and/ or approved bump-in/ bump-out activities would be permitted.

The existing loading facility for Wharf 4/5 via the Pottinger Street bridge will continue to operate as per its existing arrangement.

35 bicycle parking spaces will be provided on site for use by staff. Shower and change room facilities will be provided as part of each of the arts tenancies. A further 40 visitor bicycle parking racks will be provided within the public domain.

Further discussion regarding vehicle and pedestrian access is provided in Section 7.6.

5.9 Disabled access

An Access Report has been prepared by Accessibility Solutions (September 2017) and is provided at Appendix 5. The report provides an accessibility review of the adaptive reuse and refurbishment of Pier 2/3, Wharf 4/5 and Shore Sheds 4/5 having regard to the relevant legislation, regulations and standards pertaining to the inclusive access for people with disabilities for a SSDA. The criteria used in the assessment consider the following legislation, planning instruments and standards pertaining to access for people with disabilities:

- Secretary's Environmental Assessment Requirements (SEARS) dated 1 September 2017.
- Disability Discrimination Act
- Parts D3, E3.6, F2.4 of the Building Code of Australia (BCA).
- DDA Access Code
- Australian Standard AS1428.1 (2009) – Design for Access and Mobility – General Requirements.
- Australian Standard AS1428.2 (1992) – Design for Access & Mobility – Enhanced Requirements.
- Australian Standard AS1428.4 (2009) – Design for Access and Mobility – Tactile Indicators.
- Australian Standard AS1735.12 (1999) – Lifts : Facilities For People With Disabilities.
- Australian Standard AS2890.6 (2009) – Off-Street Parking.
- NSW Disability Inclusion Act

The accessibility assessment indicates that the various elements of the design comply or can be made to comply with the relevant legislation, planning instruments and standards as relevant.

5.10 Wayfinding and signage

A Wayfinding and Signage Strategy has been prepared by Urban and Public (September 2017) and is provided at Appendix 6.

The Walsh Bay Arts and Cultural Precinct site has a number of historical layers of signage, wayfinding, branding and identity. The site has multiple entry points and gateways from different orientations, and multiple modes of transport are used to reach the site. Wayfinding and site identity will be an important element for the site as many visitors will be irregular attendees at performances, rehearsals, events and meetings.

The report outlines the signage strategy that will be utilised to guide visitors to the precinct; and identifies a potential signage suite for the precinct including wharf identification and tenancy signage. The proposed suite is provided in preliminary form to enable further engagement with stakeholders including the NSW Heritage Council and City of Sydney. It is envisaged that based on feedback and collaboration a final signage suite for wharf and tenancy identification will be developed prior to construction.

It is intended to utilise the existing Legible Sydney signage throughout the surrounding areas to guide visitors to Walsh Bay. This will include upgrades to this existing signage to reference the precinct from major transport nodes and walking routes surrounding the site.

Key strategies outlined in the report include:

Site Identification

- Develop a wayfinding and signage system for the WBACP (internal and external) with a unique identity that integrates both the site history and current cultural uses. New external signs are proposed on the Hickson Road shore shed facades, northern facades of wharves and key entry points and bridges.

Place names, precinct naming and addressing systems

- Use of clear and consistent naming of wharves, aprons, venues, rooms and offices is key to establishing a useful and practical wayfinding system that allows ease of orientation and access to desired destinations within the precinct and wider neighbourhood, removing confusion and ambiguity about venue addresses.

Precinct Markers and Gateways

- Building signage, identity treatments and wayfinding is proposed at entry and arrival points on Hickson Road and at eastern and western gateways on the wharf aprons.
- New environmental graphics, signage, lighting and projections will be considered on the existing Hickson Road bridges that complement the utilitarian structures and social history of the site, whilst enhancing the precinct with a sense of theatre and arrival — especially in the evening.

Plaques

- All existing plaques will be retained and restored where necessary. Additional plaques will be of similar high quality cast bronze and carefully sited in relation to other plaques and signs on the site.

Building Wharf Identification

- Replace existing entry signage with signage that reflects a new identity and individual venue names, reflecting the heritage and qualities of existing signage on site. It is proposed to reinstate the removed original large ‘4’ and ‘5’ wharf numbers to the north end of Wharf 4/5.

External Building Signage and Wharf Signage

- New external building and awning signage to be located on Hickson Road to assist in establishing a theatre district atmosphere and provide amenity, activity, clarity and information about the arts companies, venues and events.

Digital Signage and Systems

- Integrated digital and touch screen displays and signage are proposed to promote events, shows and heritage interpretation. Two digital pylons and two digital walls will be employed for visitor information services. Digital displays will also be used for providing ticketing information and selling event tickets.

Internal Signage

- Internal signage for venues, rooms, offices, access, wayfinding and common services to be installed with a clear and contemporary system that establishes a consistent language in form, typography, colour and materials. Illumination of signage (external and/or internal) to be utilised to assist in wayfinding for evening events.

Existing Signage and Interpretative Displays

- The existing heritage interpretation is to be renewed and integrated in the foyer of Pier 2/3 and other areas of the public domain in coordination with the appropriate heritage reports. Increase recognition of the significant indigenous heritage of the site, including people, language and flora and fauna.

Statutory signage

- All existing accessible and DDA compliant signage will be removed and upgraded to current standards and will be manufactured in high quality long lasting finishes and where possible incorporated within the developed suite of signs.
- New signage will comply with the relevant BCA requirements but also be manufactured to be compatible with new and existing architectural elements, the wayfinding palette and be made in suitable materials for the harsh, exposed marine and solar conditions.
- Statutory signage to be implemented using the City of Sydney standard public space and parks system.

Vehicular signage

- All vehicle signage is to be reviewed and updated to current standards and installed in appropriate locations using robust, well designed hardware and fittings. All messaging, speed limits and load limits to be reviewed and made consistent.

As noted above the final wayfinding and signage strategy will be prepared following further engagement with stakeholders including the NSW Heritage Council and City of Sydney.

5.11 BCA and fire safety

A BCA Assessment Report has been prepared by Blackett Maguire + Goldsmith (September 2017), a copy of which is provided at Appendix 7. The purpose of the report is to confirm that the proposed new building works can readily achieve compliance with the Building Code of Australia (BCA) in accordance with Section 109R of the EP&A Act.

A comparison of the existing BCA classification and the new BCA classification is provided in Table 4.

Table 4: Comparison of existing and proposed BCA classification

PIER 2/3		
	EXISTING	**PROPOSED**
BCA Classification	Class 6 Café/Restaurant/Bar Class 9b Assembly Building Class 9b Entertainment Venue	Class 5 Office/Administration Class 6 Café/Restaurant/Bar Class 8 Production Workshops Class 9b Assembly Building Class 9b Entertainment Venue
Rise in Storeys	3	4
Type of Construction	Type A	Type A
Effective Height	Less than 12m	Greater than 12m (RL 15,750 – RL 3,440 = 12.310m)
Maximum Floor Area	Class 5, 9b – 8,000m^2 Class 6 – 5,000m^2	Class 5, 9b – 8,000m^2 Class 6 – 5,000m^2
Maximum Volume	Class 5, 9b – 33,000m^3 Class 6 – 30,000m^3	Class 5, 9b – 33,000m^3 Class 6 – 30,000m3
Climate Zone	5	5
WHARF 4/5		
	Existing	**Proposed**
BCA Classification	Class 6 Café/Restaurant/Bar Class 9b Assembly Building Class 9b Entertainment Venue	Class 5 Office/Administration Class 6 Café/Restaurant/Bar Class 8 Production Workshops Class 9b Assembly Building Class 9b Entertainment Venue
Rise in Storeys	4	4
Type of Construction	Type A	Type A

Effective Height	Less than 12m	Less than 12m
Maximum Floor Area	Class 5, 9b – 8,000m^2 Class 6 – 5,000m^2	Class 5, 9b – 8,000m^2 Class 6 – 5,000m^2
Maximum Volume	Class 5, 9b – 33,000m^3 Class 6 – 30,000m^3	Class 5, 9b – 33,000m^3 Class 6 – 30,000m3
Climate Zone	5	5

The BCA Assessment Report provides a detailed assessment of the proposed works against the deemed-to-satisfy (DTS) provisions of the BCA. The report concludes that the subject development can readily achieve compliance with the BCA by way of compliance with the BCA DTS provisions and via Performance Solutions from practising Fire Engineers and Accessibility Consultants.

In addition to the BCA Assessment Report, a Fire Engineering Report has been prepared by Arup (Appendix 8). A copy of the report is provided at Appendix 8.

The report outlines the fire safety strategy for the development. The fire strategy has been developed using a combination of performance based fire engineering and DTS provisions as set out in the BCA.

The Fire Engineering Report has identified a number of non-compliances with the DTS provisions of the BCA and also noted that other non-compliances with the DTS provisions may be identified as the design is developed further. However, the report notes that there are unlikely to be significant issues that would arise in the future that would impact the overall fire strategy design approach.

The Fire Engineering Report concludes that performance based fire engineering can be used to demonstrate compliance with the Performance Requirements of the BCA without major changes to the current building form.

The Performance Solutions will be documented with detailed supporting assessments in the Fire Engineering Report for the project certification in subsequent design stages, in line with normal design and approvals process.

The Fire Engineering Report also provides detailed responses to issued previously raised by Fire NSW.

5.12 Emergency Evacuation

A Draft Emergency Management Strategy (EMS) has been developed in consultation with Fire and Rescue NSW (FRNSW) and is included at Appendix 9.

The EMS outlines the key design and operational considerations to be progressively developed as the final design and operational programs, policies and procedures in the form of the WBACP Emergency Incident Response Plan which will address and include a mass Emergency Evacuation Plan.

It is intended that these will be developed in consultation with relevant authorities, consultants, tenants and precinct stakeholders.

5.13 Operational management

The day-to-day management of the WBACP will be undertaken in accordance with the WBACP Operational Plan of Management 2017, a copy of which is provided at Appendix 10. The purpose of the Operational Plan of Management (OPM) is to ensure that the operation of the WBACP:

- will not generate any significant or unacceptable impacts on the amenity of residents of the locality;
- will be safe for participants and members of the public;
- will not damage the heritage fabric of the wharves;
- will not interfere with the public enjoyment of the wharf aprons and public domain generally;
- complies with the statutory requirements applicable to the precinct.

The OPM outlines governance arrangements, key operational strategies and principles to guide the site's operations.

A Precinct Manager will oversee the day-to-day management of the precinct. The Precinct Manager will be responsible for coordinating operational matters with the tenants and approve, monitor and oversee operational activities in consultation with relevant stakeholders. Create NSW will be responsible for the ongoing management of the precinct.

The contact details of the Precinct Manager will be provided to the City of Sydney and NSW Police as well as other Government agencies and stakeholders, where relevant, for coordination and on-going operational management of the Precinct.

The Precinct Manager will approve all activities held within the WBACP with respect to compliance with operations in accordance to the requirements set out in the OPM.

Further detail regarding the operational management of the WBACP is provided in the OPM at Appendix 10.

5.14 Hours of operation

Development consent is being sought for the hours of operation as set out in Table 5. It should be noted that the proposed hours of operation for the commercial tenancies 2 to 4 are indicative only. The specific use and hours of operation of these spaces will be subject to separate development application(s).

Table 5: Proposed Hours of Operation

LOCATION	USE/SPACE/FACILITY	HOURS OF OPERATION (Monday to Sunday including public holidays)
PIER 2/3		
Pier 2/3 and ACO Function Spaces	Office	0800-1800
	Event/Production Hours	0600-0100
	Logistics, Waste Removal & Loading Dock Activities	0700-2200
	Other Logistic Activities	0600-0200
Arts Tenancies	Office	0800-1800
	Teaching/Rehearsals/Performance	0600-0100
	Logistics, Waste Removal & Loading Dock Activities	0700-2200
	Other Logistic Activities	0600 – 0200
WHARF 4/5 AND SHORE SHEDS 4/5		
Arts Tenancies	Office	0800-1800
	Teaching/Rehearsals/Performance	0600-0100
	Logistics, Waste Removal & Loading Dock Activities	0700-2200
	Other Logistic Activities	0600-0200
Commercial Spaces 2-4 (**Indicative only**)	Retail core hours	1000-2200
	Café/Restaurant core hours	0600-0100
	Logistics, Waste Removal & Loading Dock Activities	0700 – 2200
	Other Logistic Activities	0600 - 0200

5.15 Sustainability measures

The proposed sustainability measures being considered for the project are outlined in the Sustainability Report prepared by Arup (September 2017) which is provided at Appendix 11.

The report notes that the WBACP is currently a low-impact site with low energy demands due to a number of key elements in practice. The site currently uses:

- Photovoltaic cells to offset electric energy
- Primarily naturally ventilated spaces, with operable windows for occupant control

- Air conditioning for prime spaces only, where thermal comfort is demanded for business operation
- Heating only in certain spaces for occupant comfort
- The original materials of the finger wharves, which maintain the heritage and history of the site. This also reduces the embodied energy of construction

A summary of the sustainability objectives and initiatives being considered for the WBACP is provided in Table 6. It should be noted that the range of sustainability measures to be adopted for the project will be confirmed during the detailed design phase.

Table 6: Sustainability Objectives and Targeted Outcomes

SUSTAINABILITY ELEMENT	OBJECTIVES	TARGETED SUSTAINABILITY OUTCOMES
Energy efficiency	▪ Maximise natural ventilation and adoption of the adaptive comfort model ▪ Specify high efficiency systems, including innovative, site specific technologies ▪ Harbour Heat rejection/ heat absorption ▪ Provision for onsite photovoltaic array	▪ Incorporate natural ventilation design strategies into all non-performance/thermally critical spaces in the development where appropriate ▪ Provide mixed-mode ventilation strategies for offices and other appropriate locations as a preference over full air conditioning ▪ Maintain as much of the existing structure, façade and form as possible to reduce the embodied energy consumption of materials ▪ Window upgrades will meet minimum performance requirements as per BCA Section J ▪ Re-use spill air from auditoria to temper surrounding spaces ▪ Meter large energy uses individually ▪ Target high efficiency mechanical services equipment. In excess of minimum MEPS / Section J ▪ Provide infrastructure as a minimum to support photovoltaics to offset building energy demands and create capacity for future tenancy systems (maximum available roof space) ▪ Use LED light fixtures where possible to extend lamp life and reduce energy costs ▪ Install occupancy sensors and dimmable lighting where appropriate ▪ Include solar hot water with gas boost for the domestic hot water services
Potable water use	▪ Reduce potable water demand ▪ Efficient, low water use systems ▪ Optional future upgrade to collect and store rainwater for reuse ▪ Remove parking from wharves to allow clean run-off of rainwater	▪ Specify water efficient fixtures to all fittings, including retrofits. This includes: o 3 L/half flush, 4.5L/ full flush WCs o 1 L/flush Urinals o 4.5 L/min Taps o 7.5 L/min Showers ▪ Provide Harbour Heat Rejection ▪ Provision for rainwater tank & infrastructure to pier 2/3 to facilitate later installation of storage tank ▪ Use solar heating for domestic hot water NB: Parking on the piers has already been removed, which will improve the quality of water runoff.
Sustainable materials	▪ Maintain / fix existing heritage façade and structure. ▪ Use opportunity to specific internal materials with low environmental impact. ▪ Local and responsible sourcing	▪ Maintain the form and materials of the existing building. It is recommended that the current leaky façade is fixed where practicable to extend its life and to reduce discomfort issues ▪ All work is to be carried out in accordance with the Australian Icomos Burra Charter ▪ A hazardous materials survey has been conducted for the site to ensure any asbestos, lead or polychlorinated

SUSTAINABILITY ELEMENT	OBJECTIVES	TARGETED SUSTAINABILITY OUTCOMES
		biphenyls found will be remediated prior to construction works in accordance with relevant standards ▪ Specify refrigerants with an ozone-depleting potential of zero ▪ Carpets, fitout items, paints, adhesives and sealants should be low VOC in accordance with Green Star Design & As Built tool ▪ All timber to be from recycled source or FSC or PEFC certified with full Chain of Custody. No wood products to contain formaldehyde, in accordance with Green Star Design & As Built tool
User comfort and well being	▪ User-specific design for each space ▪ Design to maintain/enhance air quality ▪ Reduce legionella risk by providing non-water based heat rejection ▪ Upgrade existing services and space quality ▪ Adopt adaptive comfort and transient space gradings ▪ Connect buildings and spaces to harbour views ▪ Ability for occupants to control windows ▪ High visual light levels to increase daylight levels	▪ Maximise the area of workspace with access to natural daylight and views to the outdoors. ▪ Consider user-operable windows to increase outdoor air ▪ High Visual Light Transmission (VLT) glazing selection where possible ▪ Space-specific temperature requirements ▪ Consider space heating to Pier 2/3 space, or provision for future installation. As a minimum, seal the façade in this area where practical to improve thermal comfort whilst understanding the heritage implications ▪ Optimise lanterns to maximise daylight levels if possible
Sustainable transport	▪ On-site bicycle parking facilities for tenants and visitors ▪ Connect to Sydney City's current cycleways ▪ Link to harbour foreshore walk	▪ Designated bicycle parking for tenants, visitors and the community ▪ Encourage public modes of transportation ▪ Provide a space for information about travel options ▪ Connect cycle ways to Sydney's cycle network where possible
Operational sustainability	▪ Maintain an operation plan beyond occupancy for ongoing works ▪ Minimise and recycle waste ▪ Provide long life LED lighting where possible ▪ Increase efficiency and comfort through on-going commissioning and awareness	▪ Develop an ongoing tuning/ commissioning strategy to provide an efficient running building ▪ Develop a Waste Management Plan for the site ▪ Identify maintenance, replacement requirements ▪ Locate recycling bins throughout the precinct with instructions on proper use of what can and cannot be recycled. ▪ Develop an Environmental Management Plan commensurate with Green Star Rating Tools
Social sustainability and community	▪ Create diversification of uses and interaction with the local community ▪ Open the commercial spaces up to the public domain ▪ Lighting of public spaces to provide secure, welcoming areas after hours	▪ Space use to encourage the local community, through open gathering spaces, cafes, theatres, public domain etc. ▪ Space hire for markets, festivals, functions and the like to increase the use and knowledge of the precinct ▪ Open buildings to the public square ▪ Lighting the space at night to provide an encouraging and secure location

The Sustainability Framework contains an ongoing tracking system for each of the identified initiatives. It also commits to the development of a number of plans and guidelines to help deliver on the targeted ESD initiatives for the project as outlined in Table 7.

Table 7: Key ESD Mitigation Measures

KEY MITIGATION MEASURE	RESPONSIBILITY	TIMING
Develop a Waste Management Plan for the site	▪ Contractor	▪ Prior to occupation
Develop an Environmental Management Plan for the site	▪ Contractor	▪ Prior to construction
Develop a Commissioning Plan for the project	▪ Contractor	▪ Prior to occupation
Develop a Building Tuning Plan for the project	▪ Contractor	▪ Prior to occupation

KEY MITIGATION MEASURE	RESPONSIBILITY	TIMING
Develop a Tenant Fitout Guide	▪ Contractor	▪ Prior to tenant fitout construction
Develop a Building Users Guide	▪ Contractor/Building Owner	▪ Prior to occupation
Develop an Energy, Water and Waste Benchmarking and Target Plan	▪ Contractor/Building Owner	▪ Prior to and during occupation

5.16 Utilities

A Utilities Infrastructure Report has been prepared by Arup (September 2017) and is provided at Appendix 12. The report provides information on the following:

- existing infrastructure serving the development;
- summary of consultations with utility providers;
- service upgrades required as a result of the development;
- proposed measures to address service upgrade requirements.

A summary of the key findings of the report is provided below.

Water supply

Existing water mains are available running along Hickson Road. The size of the town mains in Hickson Road can support the development based on identified flow rates.

Sewer

Existing sewer mains are available running along Hickson Road. Marginal increases in sewer discharges over and above the existing site capacity are anticipated for Wharf 4/5 while a significant increase is anticipated for Pier 2/3. A new sewer service will be provided to Pier 2/3 to cater for the additional loads.

Power

The Precinct is supplied at low voltage from the local Ausgrid network. The Ausgrid substations supporting the site are located adjacent to the site, on the south side of Hickson Road.

The redevelopment of Pier 2/3 will see an increase in demand for electricity from the current 1600A of supply to a 2700A requirement. Upgrading of Wharf 4/5 will also result in an increased demand for electricity from the current 800A of supply to approximately 1100A.

Ausgrid has advised that an increase in supply of this magnitude will require augmentation to the local utility network. Augmentation arrangements of the local utility network are currently being negotiated with Ausgrid. This will be achieved by either an upgrade to the existing S4807 substation (located to the south of Hickson Road opposite the site), or the formation of a new chamber substation. The new chamber substation if required would be located adjacent to the existing S4807.

Natural gas

The site is currently served by a dedicated external meter from Hickson Road that feeds both Pier 2/3 and Wharf 4/5. No major increase in natural gas demand is anticipated. A new natural gas service will be required to extend to the northern end of Pier 2/3 to support the proposed works. The external (Jemena) gas mains can provide ample gas for the proposed works onsite.

Communications

Pier 2/3 and Wharf 4/5 each has an existing Main Distribution Frame (MDF), which is located within the Main Switch rooms. New lead-in cable routes will need to be provided for multiple service providers. Methods of reticulation need to be further developed in discussion with communication service provider with regards to complexities of trenching and water ingress, but existing service routing will be utilised where possible.

5.17 Water management

An Integrated Water Management Plan has been prepared by Jacobs Australia Pty Ltd (September 2016) and is provided at Appendix 13. A summary of the key water management elements for the project is provided below.

The WBACP will rely on a mix of potable and non potable water to service the development. As noted in Section 5.16, potable water will be supplied via the existing Sydney Water mains. The non potable water supply will continue to be supplemented with rainwater from the Wharf 4/5 roof, as well as the potential addition of rainwater from the Pier 2/3 roof. Rainwater is currently collected from the roof of Wharf 4/5 and stored in a 100.2 kilolitre tank located under the wharf. This has been very successful to date and it is proposed that a similar system will be implemented in the redesigned Pier 2/3.

Rainwater harvesting on Pier 2/3 and Wharf 4/5 is the preferred approach due to the maximisation of rainwater reuse onsite, reduction in stormwater runoff (and improvement in its quality) and the reduced need for imported potable water. The non-potable water supply will be treated and distributed via a separate system to flush toilets and urinals within the wharves.

However, if the installation of a rainwater harvesting system on Pier 2/3 is considered unfeasible due to cost, waterless urinals will be considered for the new Pier 2/3 facilities. The installation of waterless urinals will help reduce potable water demand and wastewater flows.

In relation to stormwater, surface water on the site generated by rainfall currently runs directly into the harbour. Hence the WBACP does not utilise the City of Sydney's stormwater network to dispose rainfall runoff from the site.

The proposed stormwater concept for the project is discussed in Section 8.14. No significant changes to the stormwater management system are proposed.

An assessment of the flooding, stormwater and ground water impacts of the project is provided in Section 8.14.

5.18 Proposed sea-water cooling system

The WBACP will feature an air conditioning system that utilises a closed loop sea water cooling system to reject heat. The heat rejection system will transfer heat to adjacent sea-water via a network of submerged coiled chillers.

The detailed design of the heat rejection system is to be finalised however at this stage it is anticipated that the heat rejection system will consist of a network of PEX Piping, coiled and mounted underneath the southern end of Pier 2/3, approximately 2m below low water mark. The system will have a capacity of approximately 1.2MW, and operate with cooling liquid at approximately 30-35°C.

An assessment of the impact of the proposed sea-water cooling system is provided in section 7.14.

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6. Legislation and Planning Policies

6.1 Commonwealth legislation

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* applies to the subject site. This Act requires approval from the Federal Minister for the Environment to carry out a 'controlled action' where it is likely to have a significant impact on a 'matter of national environmental significance'. Matters of National Environmental Significance include among other matters world heritage properties, national heritage properties, listed threatened species, ecological communities and migratory species.

There are no known matters of National Environmental Significance occurring on or in the vicinity of Walsh Bay. Therefore it is considered that referral of the application to the Commonwealth Minister for the Environment, to determine if it is a 'controlled action', is not required.

6.2 Environmental Planning and Assessment Act

6.2.1 EP&A Act Objects

An assessment of the project in relation to the objects of the EP&A Act is provided in Table 8.

Table 8: Assessment of WBACP against objects of EP&A Act

OBJECT	ASSESSMENT
5(a)(i) to encourage the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment	The WBACP will contribute to the proper management, development and conservation of the city, promote the social and economic welfare of the community and create a better environment. It will do this through creating a sustainable and activated arts and culture precinct that provides a unique cultural offering and visitor experience. The redevelopment will allow for enhanced cultural and artistic offerings; and heightened levels of activity day and night. A range of complementary commercial opportunities will help to ensure the Precinct is self-sustaining over time.
5(a)(ii) to encourage the promotion and co-ordination of the orderly and economic use and development of land	The WBACP is a strategically important government site. The project will provide for the site's orderly and economic use by rejuvenating a vital piece of Sydney's waterfront cultural heritage and providing facilities that better enable arts organisations to deliver world class productions
5(a)(iii) to encourage the protection, provision and co-ordination of communication and utility services	The Utilities Report (Appendix 12) determines that the project will not adversely impact on the provision or coordination of communication and / or utility services. Relevant utility providers have been consulted during the development of the proposal.
5(a)(iv) to encourage the provision of land for public purposes	The WBACP will encourage the provision of land for public purposes through providing for enhanced cultural facilities and greater public use of, and access to, this important government site.
5(a)(v) to encourage the provision and co-ordination of community services and facilities	The proposed development will contribute to improved community facility provision by providing for improved pedestrian and bicycle access, improved wayfinding signage as well as patron facilities.
5(a)(v) to encourage the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and	There will be negligible impact on native animals and plants as a result of the project.

OBJECT	ASSESSMENT
ecological communities, and their habitats	
5(a)(vii) to encourage ecologically sustainable development	The proposed development accords with the principles of Ecologically Sustainable Development, as set out in Schedule 2 of the EP&A Regulation 2000, as discussed in Section 10.2 of this EIS.
5(a)(viii) to encourage the provision and maintenance of affordable housing	Not applicable
5(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State	Infrastructure NSW (INSW) and the Arts, Screen and Culture Division (ASCD) have been working closely with the City of Sydney and relevant State government agencies throughout the design development and environmental assessment for the project. INSW and the ASCD are committed to continuing this constructive dialogue will all levels of government.
5(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment	An extensive program of consultation with the community and key stakeholders has been undertaken (refer discussion in Section 4.0).

6.2.2 State Significant Development

Under Part 4, Division 4.1 of the EP&A Act, an assessment pathway is provided for State Significant Development. The State Significant Development provisions under the EP&A Act are accompanied by the State Environmental Planning Policy (State and Regional Development) 2011 ("the State and Regional Development SEPP") which defines which projects are deemed to be of State Significance.

Under Schedule 1 of the State and Regional Development SEPP, development for cultural, recreation and tourist facilities that have a capital investment value of over $30 million are declared to be SSD. The WBACP project is valued at over $30 million and is therefore considered to be SSD. A Quantity Surveyor's report confirming the CIV is provided under separate cover.

Under Section 89D of the EP&A Act the Minister for Planning ("the Minister") is the consent authority for SSD.

Under Section 89J of the EP&A Act certain authorisations that would normally be required from other agencies are suspended in relation to SSD. This includes an approval under Part 4 of the Heritage Act.

6.3 Environmental planning instruments

The SEARs require consideration of the following statutory planning instruments:

- State Environmental Planning Policy No 55 – Remediation of Land ("SEPP 55")
- State Environmental Planning Policy (Infrastructure) 2007 ("Infrastructure SEPP")
- State Environmental Planning Policy (State and Regional Development) 2011 ("State and Regional Development SEPP")
- Sydney Regional Environmental Plan No 16 – Walsh Bay ("Walsh Bay REP")
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 ("Sydney Harbour Catchment REP")

The proposal's consistency and compliance with the relevant statutory plans and policies is summarised in Table 9 or discussed in more detail below.

Table 9: Compliance with Environmental Planning Instruments

PLANNING INSTRUMENT	ASSESSMENT
SEPP 55	Refer discussion in Section 6.3.1.
Infrastructure SEPP	The Infrastructure SEPP provides the statutory planning framework for the delivery of government infrastructure and services across NSW. However, it does not include specific provisions relating to arts and cultural activities. It should be noted that the SSDA does not apply to Hickson Road therefore provisions in the Infrastructure SEPP relating to development within the road are not relevant. Clause 103 and Schedule 3 of the Infrastructure SEPP set out those traffic generating developments that must be referred to the RMS. As the WBACP project has minimal capacity for parking, the development does not need to be referred to RMS under this provision. Notwithstanding, extensive consultation has already been held with RMS and the City of Sydney (as road authority) and is ongoing regarding traffic and access arrangements. There are no other provisions in the Infrastructure SEPP that are relevant to the proposal.
State and Regional Development SEPP	Discussed in Section 6.2.2.
Walsh Bay REP	Refer discussion in Section 6.3.2.
Sydney Harbour Catchment REP	Refer discussion in Section 6.3.3.

6.3.1 SEPP 55

SEPP 55 provides a state-wide planning approach for the remediation of contaminated land to reduce the risk of harm to human health or the environment. Clause 7(1) requires the consent authority to consider whether land is contaminated prior to consent of a development application.

JBS&G was engaged by Infrastructure NSW to prepare a Phase 2 Environmental Site Assessment (ESA) of the area of the proposed WBACP. A copy of the ESA is provided at Appendix 23.

JBS&G installed boreholes across the site to assess the potential for contaminants to be present. Representative soil samples from three of the installed boreholes were successfully collected and analysed for contaminants of potential concern (COPCs). Reported concentrations of the COPCs were below the adopted NEPC (2013) human health criteria for standard commercial land use. The ESA concluded that no unacceptable risk to future on-site human or ecological receptors existed and that there was no evidence of widespread or gross contamination of the land.

Additionally, available information indicates that potential contaminants in sediment and seawater at the site do not appear to represent a potential human health risk for continued commercial use of the site and the associated arts/cultural use.

The results of the ESA conclude that a RAP is not required for the uses proposed under the WBACP SSDA. Rather, collectively the results of the ESA indicate that the site is suitable for the uses proposed under the WBACP SSDA without the need for further investigation or remediation.

Based on the findings set out in the report, JBS&G conclude that the site is suitable for the proposed land use and that the works will not give rise to any unacceptable contamination risk. Accordingly it is considered that the requirements of SEPP 55 have been complied with.

Further discussion on contamination is provided in section 7.10.

6.3.2 Walsh Bay REP

The Walsh Bay REP is the principal environmental planning instrument applying to the site. The Walsh Bay REP is a “deemed State Environmental Planning Policy”. In general, the REP is a flexible instrument allowing for a wide range of uses within the precinct, including commercial, retail, residential and entertainment/recreation uses.

There are two zones under the REP:

- Zone 1 - Walsh Bay Conservation Zone
- Zone 2 - Walsh Bay Waterway Zone.

As is shown in Figure 5, the WBACP site is located within Zone 1. No works are proposed within Zone 2.

The objectives of the Zone 1 are:

(a) to allow an appropriate range of uses to encourage the adaptive re-use of existing structures while not required for commercial port uses,

(b) to ensure that development is consistent with the heritage significance, the scale, the built form and the materials of existing structures in the zone and adjoining areas,

(c) to ensure that development is compatible with and does to detract from the financial, commercial and retail functions of the existing city central business district and the Sydney Cove Redevelopment Area[1], and

(d) to ensure that development is compatible with and does not adversely impact on the residential amenity and function of the adjoining areas.

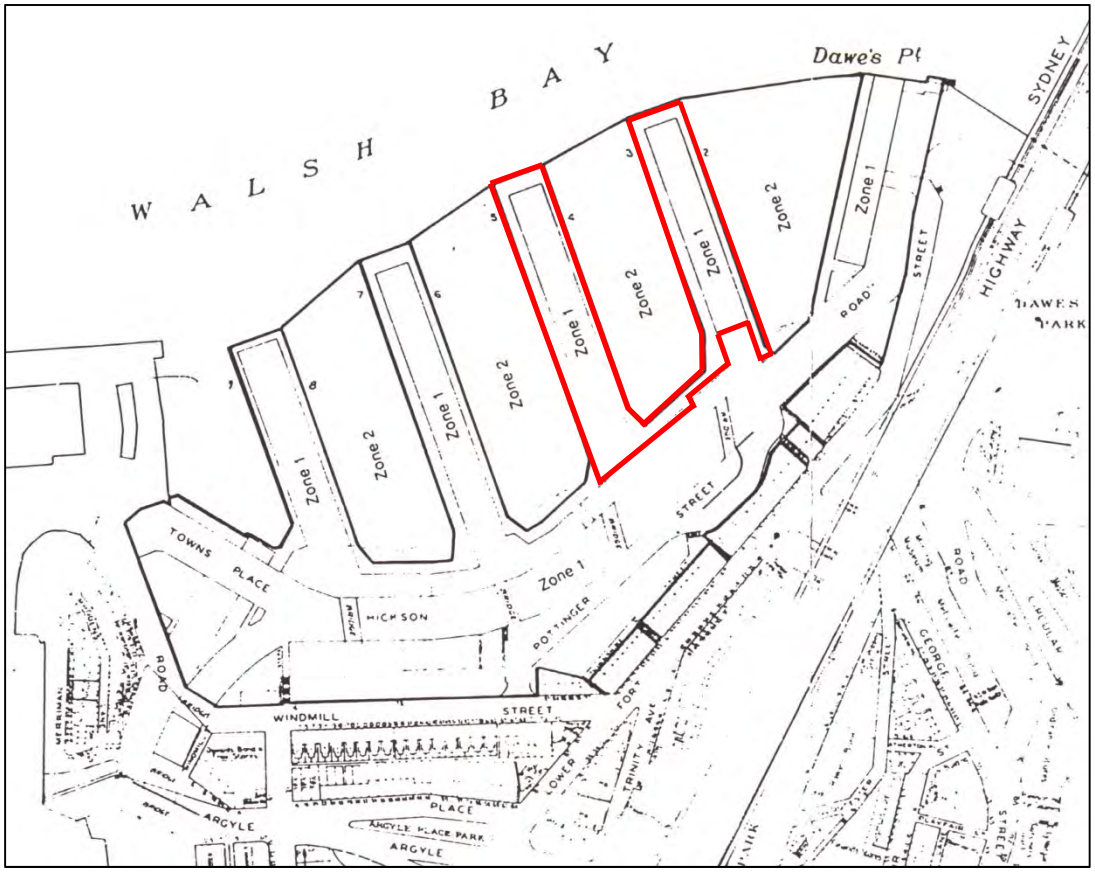

Figure 10: Zoning under Walsh Bay REP

The proposed development is consistent with these objectives in that it:

- provides for the appropriate adaptive re-use of existing structures for arts and cultural uses in a way that is sensitive to the heritage significance, scale, built form and materials of the existing structures;

[1] The *Sydney Cove Redevelopment Authority Act 1968* was repealed by the *Sydney Harbour Foreshore Authority Act 1998*

- provides for an arts and cultural precinct capable of world-class performances consistent with Sydney's global city status and in a way that complements and does not detract from the functions of Sydney's CBD
- ensures that any impacts on the residential amenity and functioning are minimised.

In Zone 1 the REP identifies uses that are prohibited rather than those that are permissible, viz:

> ***Prohibited***
>
> *Bus depots, bus stations, car repair stations, gas holders, generating works, helipads, heliports, industries (other than home industries and light industries), institutions, junk yards, liquid fuel depots, marinas, mines, roadside stalls, road transport terminals, sawmills*

The proposed uses in the WBACP are therefore permissible with consent.

Clause 13 of the Walsh Bay REP requires that the consent authority must not grant consent to development unless it has taken into consideration the extent to which it would affect the heritage significance of the Walsh Bay Conservation Zone (Zone 1). Consideration of the impact of the WBACP proposal on the heritage significance of the Walsh Bay Conservation Zone has been undertaken and is discussed in Section 7.3 of this report and in the Heritage Impact Statement provided at Appendix 14.

Clause 15 of the REP provides for the preparation of development control codes where the consent authority considers it appropriate to provide more detailed provisions that are contained in the plan. However, no such codes have been prepared.

Clause 16 of the REP requires consideration of a range of issues when determining DAs. These are:

(a) the views of the Central Sydney Planning Committee

The Central Sydney Planning Committee has been consulted on the project on a number of occasions, most recently at its meeting of 14 September 2017

(b) any conditions imposed by the Heritage Council under section 63 of the Heritage Act 1977

Section 63 of the Heritage Act does not apply in the case of State Significant Development. However, there have been ongoing discussions with the Heritage Division staff regarding the proposal.

(c) in relation to Zone 2, the requirements of the RMS concerning the impact of the development on commercial shipping, recreational boating and navigational issues on Sydney Harbour

No development is proposed in Zone 2.

(d) the Walsh Bay Redevelopment Conservation Guidelines dated February 1988

The Walsh Bay Redevelopment Conservation Guidelines have been addressed in the Heritage Impact Statement at Appendix 14.

(e) any urban design guidelines

There are no urban design guidelines applying in Walsh Bay.

(f) the Walsh Bay Regional Environmental Study 1989

The Walsh Bay Regional Environmental Study (RES) examines the history and heritage of the area and contains certain guidelines in relation to its future redevelopment. Key relevant matters to be addressed are:

Heritage – *Development should retain the capacity of the Walsh Bay precinct to document and demonstrate its historic functions and its sense of time and place. There should be no radical introduction of civic works and infrastructures which do not reflect the heritage qualities of the precinct. The adjacent Millers Point area and its distinctive population should not be subject to changes as a result of the development of the Walsh Bay precinct. Industrial artefacts associated with the wharves and bond stores should be retained.*

The heritage impact of the project is discussed in Section 7.3. The proposed changes are sensitive to the unique heritage qualities of the precinct and reflect the intent as described in the Walsh Bay RES. They will not impact on the adjacent Millers Point and will provide for the retention of existing industrial character and artefacts.

Future Land Use and Waterway Use – *A mix of residential, commercial, cultural and leisure/ entertainment uses is considered appropriate for the Walsh Bay sites. The capacity of the area to accommodate increased traffic is limited and a mix of uses which spreads the time people enter and leave the area is most appropriate. The number of private vessels mooring at Walsh Bay should be controlled. The scale and intensity of new land uses should not adversely affect existing residents of Millers Point but should encourage access to the area for local people.*

The WBACP project provides for a mix of uses and will spread the time when people visit the precinct, consistent with these objectives. No changes are proposed in relation to the mooring of vessels. The scale and intensity of the land uses is appropriate having regard to the public waterfront nature of the precinct and the cultural outcomes that will be achieved. The environmental assessment in Section 7.0 indicates that the project not adversely impact on residents in Millers Point.

Urban Design – *Most of the built fabric should be retained, consistent with the Heritage and Conservation Guidelines. The simple lines of the wharves should be maintained and no fixtures added which detract from the visual integrity of the wharves. The introduction of new materials to the outside of the wharves and shore shed buildings should be avoided.*

The proposed changes maintain the simple lines of the wharves and will not detract from their visual integrity. The changes have been designed having regard to the Heritage and Conservation Guidelines and the extent of interventions has been minimised. Acknowledging the heritage significance of the Walsh Bay Wharves, the new uses are carefully inserted within the heritage fabric, with a clear distinction between original and new fabric. The design retains the richness of the original heritage fabric whilst meeting strict acoustic and energy-conservation principles.

Further discussion regarding the built form and urban design impacts are provided in Section 7.1.

Traffic and Transportation – *Public transport provision should be sufficient to reduce pressure on parking and ensure that there is no parking overflow into Millers Point. Traffic and pedestrian safety and amenity need to be addressed. Sufficient provision must be made for service vehicles.*

A Transport Impact Assessment has been undertaken (refer Appendix 15) which indicates that the project will not create undue traffic or parking impacts on the surrounding areas. Major public transport initiatives in the area, including the construction of the Sydney Metro and nearby station at Barangaroo, will see less use of private vehicle and greater use of sustainable transport options. Adequate provision has been made for service vehicles to access the site in a safe and efficient manner. Further detail is provided in the Transport Impact Assessment at Appendix 15 and Green Travel Plan at Appendix 16.

(g) the Central Sydney Strategy 1988

The Central Sydney Strategy 1988 has been largely superseded by the City of Sydney's *Sustainable Sydney 2030* document which is the City's vision for making the city "green, global and connected" by 2030.

The 2030 vision identifies the establishment of a "cultural ribbon" which will link Sydney's leading cultural landmarks along the harbour's edge, such as The Wharf Theatre, the MCA, the Opera House, Customs House and other cultural attractions. The cultural ribbon is intended to focus on improved directional signage for Sydney's cultural attractions in the City Centre and form links to strengthen and support the cultural life of the city. As part of this initiative, the vision seeks to encourage a focus for cultural activities around Walsh Bay, and a foreshore connection between Circular Quay and Darling Harbour. The enhanced use of Walsh Bay for cultural purposes is therefore consistent with Sustainable Sydney 2030.

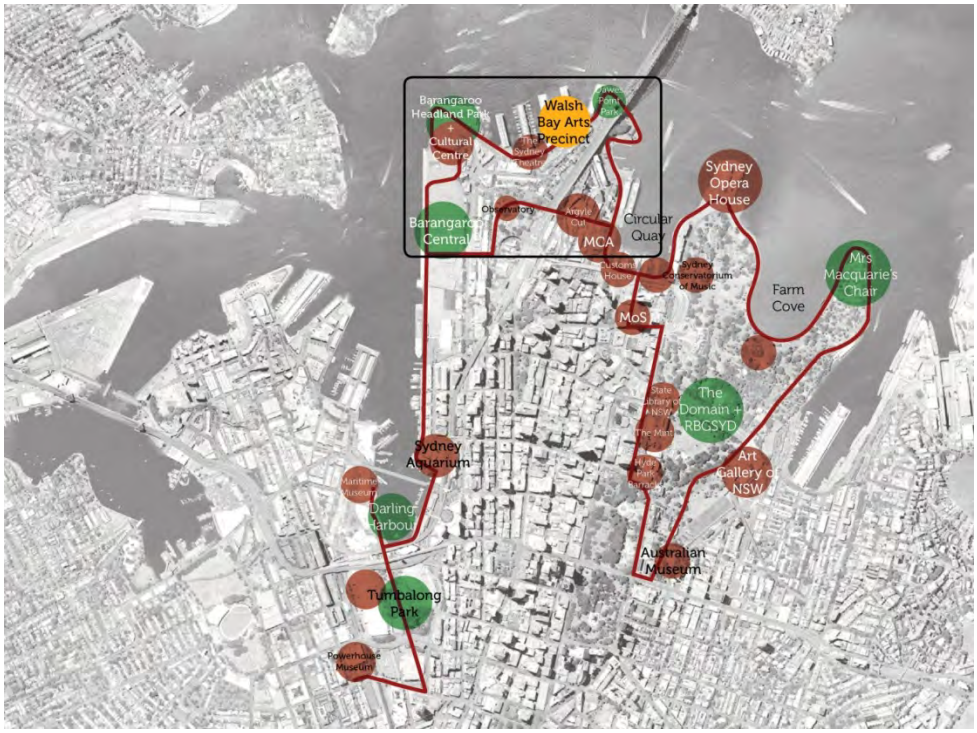

Figure 11: Cultural Ribbon

(h) the adequacy of public access to the wharf aprons and to the foreshore

Public access to the wharf aprons will be maintained. Improved wayfinding will be installed to provide for greater legibility in the precinct. Opportunities for recreational fishing from the wharves will be maintained.

(i) where the development is or provides a public transport facility, whether that facility integrates with existing public transport services and provides an adequate level of service

The development does not involve the provision of a public transport facility.

(j) whether the development affects the continued use of wharf No 4 or 5 as a theatre complex and certain sites for RMS purposes

The proposal consolidates the continued use of Wharf 4/5 as a theatre complex and preserves the area within the waterway between Pier 2/3 and Wharf 4/5 for mooring per RMS's requirements.

(k) any plan indicating evidence of archaeological material prepared by or to the satisfaction of the Heritage Council

An Archaeological Assessment has been prepared by Cultural Resources Management and is provided at Appendix 17. Appropriate strategies for conservation and interpretation are recommended and will be adhered to during the construction and operation phases. The findings of this assessment have been discussed with the Heritage Division staff prior to the lodgement of this SSDA.

(l) whether the development generates traffic which adversely impacts on the amenity of the area and surrounds.

The Transport Impact Assessment at Appendix 15 indicates that the proposal will not result in significant traffic impacts. Refer also discussion in Section 7.6.

Clause 17 of the REP states that the consent authority may only grant consent to development for commercial purposes if the development would result in a floor area used for the purposes of commercial premises in Zone 1 not greater than 30 per cent of the total floor area used for any purpose within that Zone at the time. Under the REP commercial premises means:

> *… a building or place used as an office or for other business or commercial purposes, except:*
>
> *(a) a building or place elsewhere specifically defined …*

(b) a building or place used for the purpose of parking vehicles for fee or reward.

Separate definitions are provided for places of assembly (including theatres), shops, refreshment rooms (i.e. restaurants, cafes and the like) and hotels (premises where an hotelier's licence is granted) therefore these do not fall under the definition of commercial premises. Any offices that are proposed in the WBACP are ancillary and incidental to the cultural and theatre uses rather than being commercial premises in their own right. As such, they are not covered by this provision.

6.3.3 Sydney Harbour Catchment REP

The site is within the Sydney Harbour Catchment as identified under Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 and is also within a "Strategic Foreshore Site" under Part 4 of the REP. The Sydney Harbour Catchment REP is also a "deemed SEPP".

Part 3, Division 2 of the Sydney Harbour Catchment REP requires that the consent authority take into account a range of matters before granting consent for development under Part 4 of the EP&A Act. An assessment of the project in relation to relevant matters is provided in Table 10.

Table 10: Assessment Against Relevant Sydney Harbour Catchment REP Provisions

RELEVANT MATTERS TO BE TAKEN INTO ACCOUNT	ASSESSMENT
Cl.21 Biodiversity, ecology and environment protection Development should: ▪ have a neutral or beneficial effect on water quality, ▪ protect and enhance terrestrial and aquatic species, populations and ecological communities, ▪ promote ecological connectivity between neighbouring areas of aquatic vegetation, ▪ avoid indirect impacts on aquatic vegetation ▪ development should protect and reinstate natural intertidal foreshore areas, natural landforms and native vegetation, ▪ retain, rehabilitate and restore riparian land, ▪ maintain and enhance the ecological integrity of wetlands ▪ consider the cumulative environmental impact of development, ▪ consider whether sediments in the waterway adjacent to the development are contaminated, and what means will minimise their disturbance.	The proposed works are confined to the adaptive reuse of the existing buildings and will not impact on the marine ecology. Appropriate measures will be put in place during construction to protect water quality in the harbour. No disturbance of marine sediments is proposed as a result of the development.
Cl.22 Public access to, and use of, foreshores and waterways. Development should: ▪ maintain and improve public access to and along the foreshore, ▪ maintain and improve public access to and from the waterways for recreational purposes ▪ provide appropriate tenure and management mechanisms to safeguard public access to, and public use of, that land, ▪ consider the undesirability of boardwalks as a means of access across or along land below the mean high water mark if adequate alternative public access can otherwise be provided, ▪ consider the need to minimise disturbance of contaminated sediments.	The proposed development will maintain existing public access around the wharves. No boardwalks are proposed. No works are proposed that will impact on the seabed or disturb seabed sediments.
Cl 23 Maintenance of a working harbour ▪ foreshore sites should be retained so as to preserve the character and functions of a working harbour	The character and significant features of the Walsh Bay Wharves, as a representative example of the working harbour in the 19th and early 20th century, will continue to be conserved and interpreted in the WBACP – refer discussion

RELEVANT MATTERS TO BE TAKEN INTO ACCOUNT	ASSESSMENT
▪ consideration should be given to integrating facilities for maritime activities in any development,	in Section 7.3 and Heritage Impact Statement at Appendix 14.
Cl 24 Interrelationship of waterway and foreshore uses Development should: ▪ promote equitable use of the waterway, including use by passive recreation craft, ▪ minimise any adverse impact on the use of the waterway, including the use of the waterway for commercial and recreational uses, ▪ minimise excessive congestion of traffic in the waterways or along the foreshore, ▪ ensure water-dependent land uses should have priority over other uses, ▪ avoid conflict between the various uses in the waterways and along the foreshores.	No changes are proposed to the use of the waterway in this location.
Cl 25 Foreshore and waterways scenic quality ▪ the scale, form, design and siting of any building should be based on an analysis of: - the land on which it is to be erected, and - the adjoining land, and - the likely future character of the locality, ▪ development should maintain, protect and enhance the unique visual qualities of Sydney Harbour ▪ the cumulative impact of water-based development should not detract from the character of the waterways and adjoining foreshores.	The WBACP project involves minimal interventions to the building fabric. The scale, form, design and siting of the proposed external façade changes have been carefully designed to maintain and celebrate the heritage structure. There will be negligible impact on the foreshore and waterways scenic quality as a result. No significant changes are proposed to the public domain. Refer discussion on visual impact in Section 7.5 and Visual Impact Assessment at Appendix 18.
Cl 26 Maintenance, protection and enhancement of views. Development should: ▪ maintain, protect and enhance views (including night views) to and from Sydney Harbour, ▪ minimise any adverse impacts on views and vistas to and from public places, landmarks and heritage items, ▪ ensure the cumulative impact of development on views should be minimised.	A Visual Impact Assessment has been prepared for the project and is provided at Appendix 18. The assessment indicates that no significant change would occur to the extent of the visual catchment of the project, or to the visual character, scenic quality, or private domain sensitivity of the site. Further discussion is provided in Section 7.5 and Visual Impact Assessment at Appendix 18.

The Sydney Harbour Catchment REP requires the preparation of a master plan for Strategic Foreshore Sites. However, under clause 41(4) a master plan does not have to be prepared for the “City Foreshores Area” which includes the subject site.

6.4 Strategic planning policies

The proposal’s consistency and compliance with the relevant strategic planning policies is outlined in Table 11.

Table 11: Compliance with Strategic Policies

POLICY	ASSESSMENT
NSW State Priorities	The NSW State Priorities are: ▪ Creating jobs

POLICY	ASSESSMENT
	▪ Building infrastructure ▪ Reducing domestic violence ▪ Improving education results ▪ Protecting kids ▪ Reducing youth homelessness ▪ Driving public sector diversity ▪ Keeping our environment clean ▪ Faster housing approvals ▪ Improving government services The WBACP project is consistent with the relevant priorities of creating jobs and building infrastructure. The project will provide employment growth during both the construction and the operational phase. It is expected that the project will generate around 600 construction jobs and 70 operational jobs. The project will also create new and enhanced cultural infrastructure within an area of the City identified by both the NSW Government and the City of Sydney as a significant cultural hub.
A Plan for Growing Sydney	The WBACP project is consistent with *A Plan for Growing Sydney,* in particular: ▪ Goal 3: A great place to live with communities that are strong healthy and well connected. ▪ Direction 3.4 Promote Sydney's heritage, arts and culture ▪ Action 3.4.1 Continue to grow global Sydney's CBD as an international arts and cultural destination The Plan notes that world-class cities are distinguished by their cultural life, with many of Sydney's arts venues contributing to the city's global reputation. It refers to the NSW Government's investment in cultural venues in an arc extending from the Domain through Sydney Opera House and Darling Harbour to the Australian Technology Park. This includes the cultural facilities at Walsh Bay. Under Action 3.4.1, the Plan notes that: *The redevelopment of the Walsh Bay Arts Precinct will more than double the arts offering at Walsh Bay with new and upgraded production, rehearsal, studio and performance venues. Home to Australia's pre-eminent performing arts organisations, the Walsh Bay Arts Precinct will offer a rich and varied range of performances, events and experiences complemented by new restaurants, cafes and commercial opportunities. These include Sydney Theatre Company, Sydney Dance Company, Bangarra Dance Theatre, Australian Theatre for Young People. Choir groups and key festivals will also be part of the precinct. A major new public square and opportunities for community engagement and participation will be central to the proposed development.* The action commits the NSW Government to redeveloping Pier 2/3 and Wharf 4/5 *to create an internationally significant working arts precinct for Australia's leading major performing arts organisations.* This SSDA is intended to enable the Government to realise this commitment. However, it does not seek approval for the waterfront square element of the project which is subject to further design refinement.
Towards Our Greater Sydney 2056	*Towards Our Greater Sydney 2056* is a draft amendment to A Plan for Growing Sydney and is the first step in a major review of that document. The amendment reconceptualises Greater Sydney as a metropolis of three cities and is accompanied by draft District Plans. It does not provide any strategic policies or direction relating to Central Sydney's arts and cultural infrastructure although it does note the significant contribution that the major arts institutions make to Sydney's artistic and cultural credentials.

POLICY	ASSESSMENT
Draft Central District Plan	The Draft Central District Plan builds on Action 3.4.1 of A Plan for Growing Sydney to develop global Sydney city as an international arts and cultural destination and to integrate arts and cultural policies and investment with broader development and urban renewal efforts across the city. Fostering the creative arts and culture is identified as one of the 'Liveability Priorities' in the draft Plan (Liveability Priority 8). In finalising the Draft Plan it is noted that further work will consider (amongst other matters): ▪ delivering a diverse range of night time activities in appropriate places ▪ how to better manage temporary arts and cultural activities ▪ the diversity of places which can support and benefit from arts and cultural activities The WBACP is therefore considered to be consistent with the stated priorities of the Draft Central District Plan.
NSW Long Term Transport Master Plan	The NSW Long Term Transport Master Plan was released in December 2012 and provides a framework to guide the NSW Government's transport funding priorities over the next 20 years. Key actions in the master plan that may contribute to improving public transport at Walsh Bay include: ▪ Redesign of the city-wide bus network with a focus on the Sydney CBD. The redesign of the bus network in the CBD will be accompanied by a high capacity north-south light rail line along George Street. ▪ Major initiatives at Barangaroo including the construction of a new ferry hub at Barangaroo South, the Barangaroo Central metro station and new bus services along Hickson Road ▪ Upgrading of ferry facilities at Circular Quay to improve modal integration and way finding ▪ Long term investigations into possible extensions to the light rail line to Walsh Bay
Guide to Traffic Generating Development	The Roads and Maritime Services (formerly RTA) Guide to Traffic Generating Developments 2002 has been referenced to guide the methodology and preparation of the Transport Impact Assessment for WBACP.
Planning Guidelines for Walking and Cycling	The *Planning Guidelines for Walking and Cycling* aim to assist land-use planners and related professionals to improve consideration of walking and cycling in their work. Measures to improve walking and cycling access to the WBACP site have been identified for the development and are discussed in Section 7.6.
Sydney City Centre Access Strategy	The Sydney City Centre Access Strategy outlines the NSW Government's strategy to deliver a fully integrated transport network in Sydney's city centre. It covers all modes of transport, and includes pedestrian and cyclist strategies for the Sydney city centre. Key actions in Strategy include: ▪ Utilisation of Hickson Road as a key bus corridor to service Barangaroo and Walsh Bay via the city centre. ▪ Implementation of Wynyard Walk (now constructed) allowing direct pedestrian access to Kent Street where bus services to Walsh Bay are available. ▪ Additional taxi ranks in the nearby area It is understood from City of Sydney that initial implementation works in the vicinity of Walsh Bay are now complete, with no further changes currently proposed.
Sydney's Cycling Future	Sydney's Cycling Future was prepared by Transport for NSW and was released in December 2013 following the release of the NSW Long Term Transport Master Plan

POLICY	ASSESSMENT
	to provide a mode specific cycling strategy. It presents a new direction for bicycle infrastructure planning in metropolitan Sydney by focusing on people who would like to ride more often if cycling was made a safer and more convenient option. The strategy aims to prioritise investment on projects that have the greatest potential to get the most people to shift their short transport trips to bicycle. In order to achieve this, it aims to invest in connected routes within 5 kilometres of major centres and public transport interchanges. It proposes a three-tier hierarchy of safe cycleways to major centres and seeks to invest in state priority corridors to safely link with inner Sydney. Any regional network improvements and encouragement initiatives will benefit cycling to WBACP.
Sydney's Walking Future	Sydney's Walking Future recognises that walking is a fundamental component of an integrated transport system with most public transport trips starting and ending with walking. The strategy seeks to create a culture of walking for transport by promoting walking as a viable and attractive transport choice, particularly for travelling to and from work and school. The strategy aims to focus infrastructure investment on completing connections within two kilometres of centres and public transport interchanges. In addition to this, the strategy aims to link walking to urban growth and to prioritise the needs of pedestrians in the planning, design and construction of new transport and urban development projects. This includes the Wynyard Walk which provides direct pedestrian access from Wynyard Station to Barangaroo where bus services to Walsh Bay are provided.
Sydney's Bus Future	Sydney's Bus Future is the NSW Government's long term plan to redesign the city's bus network to meet commuter needs in the short, medium and longer term. The policy recognises the need to improve services to the western side of the CBD and makes provision for a strategic bus corridor along Hickson Road past Barangaroo and Walsh Bay (refer Section 7.6 for discussion).
NSW Bike Plan 2010	The NSW Bike Plan, prepared with input from various government agencies, aims to support growth in bicycle usage and *"help make NSW one of the world's best places to ride a bike"*. The plan outlines at least $5 million funding each year for regional cities and local councils to complete neighbourhood cycleway networks. The WBACP redevelopment would not impact strategic cycling routes between city centres, however would promote their usage with provision for bike parking and internal bike end-of-trip facilities within the site.
Development Near Rail Corridors and Busy Roads – Interim Guideline 2008	Refer Noise and Vibration Impact Assessment at Appendix 19.
Heritage Council Guidelines *Assessing the Significance of Archaeological Sites and Relics*	*Assessing the Significance of Archaeological Sites and Relics* provides advice about how to assess the heritage significance of known and potential archaeological resources, features or deposits and determine whether they are 'relics' as defined by the Heritage Act. The historic period assessment in the Archaeological Assessment at Appendix 17 has been prepared in accordance with these Guidelines. In particular, a detailed assessment of the site's archaeological significance against the NSW Heritage Criteria is provided in section 6.3.4 of the Archaeological Assessment. Refer Appendix 17 and Section 7.4 of the EIS regarding the outcome of the assessment.
Walsh Bay Regional Environmental Study 1988	Refer discussion in section 6.3.2.
Walsh Bay Redevelopment Conservation Guidelines 1989	The Walsh Bay Redevelopment Conservation Guidelines were prepared for the Maritime Services Board and appended to the Walsh Bay Regional Environmental Study 1998. The Guidelines identify the heritage significance of buildings and industrial relics and recommend a policy of adaptive re-use. Building envelopes and

POLICY	ASSESSMENT
	view guidelines are also specified by the Guidelines. Since the Conservation Guidelines were prepared, a number of Conservation Management Plans have been adopted for the Precinct which largely supersede the Guidelines. They are: ▪ The Walsh Bay Precinct Conservation Plan prepared by Clive Lucas, Stapleton and Partners in 1998 ▪ The Wharf 2/3 Conservation Management Plan prepared by Tropman and Tropman in 2000 ▪ The Wharf 4/5 Conservation Management Plan prepared by Graham Brooks and Associates in 2007. All three Conservation Management Plans took into account the provisions of the Conservation Guidelines. The Conservation Management Plans have been approved by the Heritage Council and provide the main guiding documents for heritage conservation and adaptive reuse in the Precinct. This SSDA is in accord with the relevant CMPs and the Conservation Guidelines as appropriate.
Crime Prevention Through Environmental Design Principles	Refer section 7.13 for discussion

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7. Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the WBACP project. It addresses the matters for consideration set out in the SEARs and Stage 1 SSDA conditions as relevant (refer Sections 3.0 and 4.0). It includes mitigation measures, which are also summarised in Section 9.0.

7.1 Built form and urban design

The following discussion regarding built form and urban design is drawn from the SSDA Design Report prepared by TZG and provided at Appendix 20.

7.1.1 Overview

The built form and urban design strategy for the WBACP is based on the following overarching design parameters:

- The conservation principles defined for this State-significant site, retaining and conserving the fabric of the precinct.
- The detailed requirements of the arts tenants who will occupy the buildings with a wide range of production and performance activities.
- Statutory and other upgrades that will enable the building to function as public performance facilities.
- The creation of commercial spaces that will support the activities of the precinct financially, improve visitation numbers and the visitor experience itself.
- Strengthening the precinct's links to Sydney's "Cultural Ribbon" and to the sequence of foreshore public spaces and facilities.
- Creating elements that will help to define the precinct's identity and image world-wide.

The design retains the richness of the original fabric whilst meeting strict acoustic and energy-conservation principles, adopting strategies such as:

- Planning many of the spaces so that new walls required for acoustic or energy conservation are located within the buildings leaving the interior faces of the original multi-layered timber walls exposed.
- Concealing new plant within the ridge lines of the twin-peaked roofs.
- Planning the audience journey to maximise the experience of the Harbour views and the heritage architecture.
- Locating public spaces where they can enjoy new and existing outdoor spaces such as the Gantry Balconies and Wharf Aprons.

Acknowledging the heritage significance of the Walsh Bay Wharves, the new uses are carefully inserted into the buildings, with a clear separation between original and new fabric.

Pier 2/3, the last remaining undeveloped wharf, contains several heritage features which have been retained and incorporated into public areas and significant spaces. The superstructure itself is of the highest heritage value, thus the removal of structure is only proposed where absolutely necessary to accommodate the proposed arts and cultural uses.

7.1.2 Building design approach

Pier 2/3

In the lower shed, the main foyer has been located in the centre of the building visually integrating the heritage 'dead house' and other elements. Access to the 'raw' function space is framed by an existing opening in the original timber screen. Lifts and a stair provide access to the upper foyer. The ground floor function space has minimal interventions to reveal and celebrate the heritage structure, which spans the full width of the building, and to capture views both into the precinct and toward the Sydney Harbour Bridge.

In the upper shed, the main Level 1 foyer has been located under the central lanterns. Public circulation to the south of the foyer is on the eastern side of the building, taking advantage of the cargo door openings and a panoramic view of the Sydney Harbour Bridge. This public corridor leads to Bell Shakespeare's rehearsal spaces at the southern end of the pier and to the ACO's auditorium to the north. Western access is also provided to this space.

At the south end of the lower shed, mezzanines are carefully located to reveal the full height space immediately inside the cargo doors. The mezzanine floor structure is separated as far as possible from retained heritage elements in accordance with the requirements of the Conservation Management Plan.

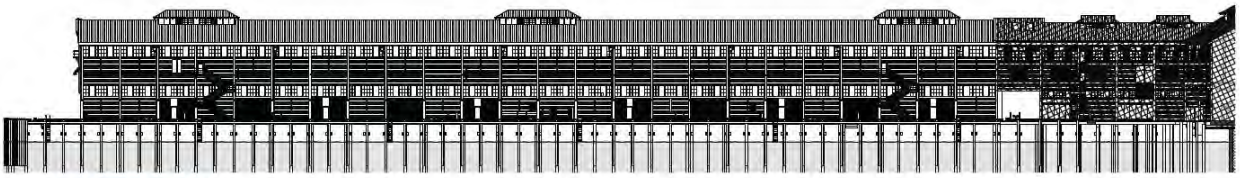


Figure 12: Pier 2/3 existing west elevation

Figure 13: Pier 2/3 proposed west elevation

The gantry balconies have been designed to reference the travelling gantries that once moved along the wharf aprons. Combined with required access stairs, these create a sculptural contemporary architectural intervention which reads distinctly from the original building fabric. A similar approach has been taken for Wharf 4/5.

New insertions such as auditoria will be expressed as distinct architectural elements that will read as objects independent of the original fabric. This clearly articulates the new from the old, reading as containers within the historic shed and allows for periodic termite inspection of the original timber structure. Removal of storey posts is only proposed in the upper shed where auditoria and rehearsal spaces are required to be column free.

The existing cargo doors are opened up with new glazing installed in the opening, reinforcing the checkerboard façade pattern of the original building.

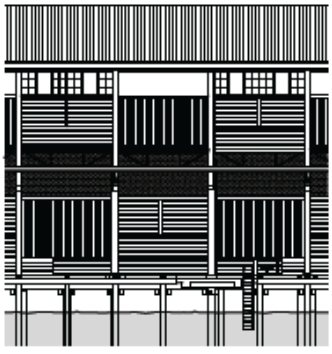


Figure 71: Pier 2/3 eastern elevation detail

Figure 14: Pier 2/3 eastern elevation detail

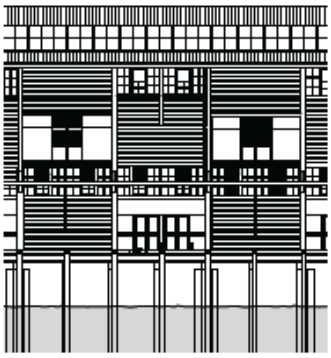


Figure 72: Wharf 4/5 eastern elevation detail.

Figure 15: Section through raised section of roof

A new canopy is proposed adjacent the main goods lift and loading area on the east facade. The canopy will be a contemporary element that interprets the historical loading platforms that were once present.

A new external lift is proposed at the north end of the western facade to provide accessible travel to ACO's offices and function space on Level 1. The steel framed shaft is glazed to maximise transparency and minimise visual impact.

The existing roof profile has been maintained wherever possible. However, the ACO auditorium and ATYP theatre both require additional volume for associated acoustics and mechanical plant. Amendments to the existing roof have been minimised and changes to the profile are within the central valley and between the existing lanterns. Common detailing between roof alterations is proposed for both Pier 2/3 and Wharf 4/5 to maintain a consistent architectural language.

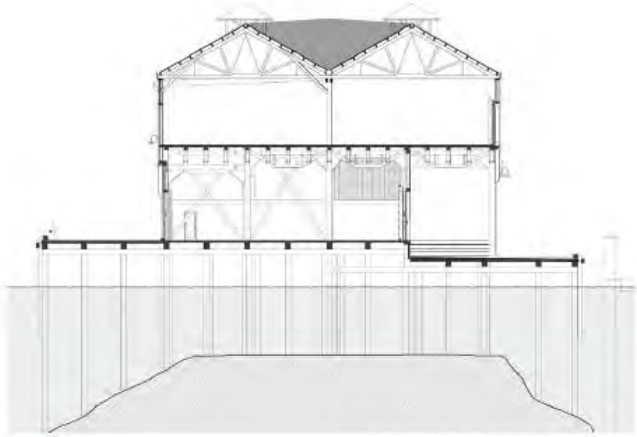


Figure 16: Section through raised section of roof

Figure 17: Comparison of existing roof profile (left photo) and proposed roof alterations (right photo)

As can be seen from Figure 17, there will only be minor visual impact from the proposed roof interventions. Further discussion regarding the heritage and visual impact of the proposed roof changes is provided in Sections 7.3 and 7.5 below.

Wharf 4/5

Externally, the design for Wharf 4/5 Upper Shed responds to the functional needs for the renewal of the STC tenancy, as developed in the separate SSDA for STC50 and to the architectural language developed by Viv Fraser. The new elements are generally in accordance with the proposals for Pier 2/3, and consistent with the conservation strategies for the precinct.

Similar to Pier 2/3, two roof penetrations within the central valley are proposed, one above the STC workshop to allow theatre sets to be built at full height and one above STC Theatre 1 to improve sight lines, allow for clear head height to technical zones and enable flexible seating configurations.

Within the Lower Shed, three occupancies are proposed, each accessed separately from the wharf aprons, as well as Public Amenities and some service areas.

The SDC tenancy remains substantially as existing, with upgrades to improve security and access, and reworking of the current workshop space to create a new large Studio facing east onto the main public focus of the Precinct, known as Studio 5.

The BDT tenancy is more substantially altered, with the main rehearsal/performance space reconfigured to improve functionality, a column removed from the smaller rehearsal studio, and the remaining spaces reconfigured to provide better foyer exhibition space and a new Function Space at the north end of the Pier, opening out onto the wharf apron.

At the centre of the Lower Shed, office and meeting space for the Choirs is proposed over two levels.

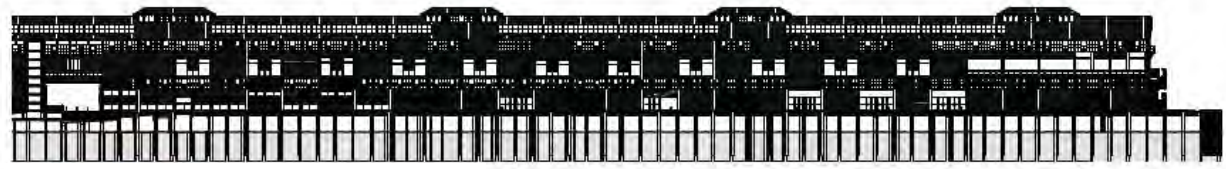


Figure 18: Wharf 4/5 existing east elevation

Figure 19: Wharf 4/5 proposed east elevation

Shore sheds

The work proposed to the Shore Sheds is confined to those related to Wharf 4/5, as the Pier 2/3 Shore Sheds are part of a separate leasehold.

There are three gateways into the Precinct though the Shore Sheds via breezeways. These are proposed to be identified by new steel framed glass awnings. The eastern entry through the Wharf 4/5 Shore Sheds will serve as the primary entrance to the Precinct. Works here will include a new Visitor Portal and Office along with upgrades to the STC's front of house facilities. The stair to STC is proposed to be moved north and the existing lift removed to provide a more welcoming entry to the precinct.

Rehearsal spaces for the Choirs are located in the Central Shore Shed facing the SDC Cafe. There is also a bank of Precinct Amenities, to service the public domain, which are accessed from the western side. Works to the STC tenancy, at the south of the Central Shore Shed, are the subject of a separate SSDA.

The Eastern Shore Sheds are proposed to contain commercial tenancies which will have a frontage to both Hickson Road and the wharf apron. Glazed shopfronts and retractable awnings, to match those on adjoining tenancies, are proposed to the northern facades of these tenancies. Each of these tenancies will have a mezzanine inserted within the volume of the Lower Shed.

Centralised Plant Rooms are also located in the Eastern Shore Shed serving as the distribution point for the wider precinct.

The Western Shore Shed houses precinct facilities including the Waste Room, Bicycle Store and Precinct Store. There is also provision for a small Commercial tenancy at the north eastern end of the shed.

7.1.3 Site layout

Access to the site is provided from Hickson Road via four openings in the Shore Sheds, each aligned with the apron on Piers 2, 3, 4 and 5. Access is also available via the eastern pedestrian bridge which is axially aligned with the Pier 2/3 breezeway and the breezeway adjacent to the SDC cafe.

All arts tenants have a presence facing into the precinct.

A series of key Gateways provide access to the Precinct. There are eight entrances in total, one to the east, one to the west, four to the south on Hickson Road and two from Pottinger Street in the form of bridges, as shown in Figure 20.

The Gateway strategy for the WBACP is aimed at:

- Retaining clear and open views from Hickson Road into the precinct and especially to the Harbour
- Avoiding visible gates and barriers
- Being accessible to the whole community
- Not being obstructed by ramps or stairs leading to individual tenancies
- Including wayfinding signage

The Breezeways form several of the Gateways, as well as forming cross connections from Pier to Pier. Where Breezeways do not form Gateways, they should:

- Remain clear of visual obstructions to ensure wharf-to-wharf connectivity.
- Provide opportunities for outdoor sheltered seating.

Figure 20: Gateway locations

Further detail regarding the built form and urban design of the project is provided in the Architectural Design Report at Appendix 20.

In summary, the design for the WBACP has been well considered and designed to provide for the current and foreseeable future demands of the place whilst at the same time preserving its heritage and cultural significance. As stated in the Heritage Impact Statement (Appendix 14):

> *The adaptive reuse of any structure by its nature will have significant impact upon the place. The impact on the relics here is, on occasions, significant in the large performance spaces especially, however the language for adaptive reuse of the structure has considered the least interventionist methodology and there has been a striving throughout the precinct to develop the appropriate language in the detailing to allow interpretation of the original fabric and large scale volumes. We believe this has been achieved.*

7.2 Public domain

The public domain of the WBACP precinct comprises the wharf aprons to Pier 2/3, Wharf 4/5 and along the northern side of the Shore Sheds. An easement applies to the wharf aprons to protect public access. The public domain also extends to Hickson Road. Pedestrian access into the precinct is via three entry points through the Shore Sheds from Hickson Road as well as from the Pier 2/3 eastern apron which opens directly onto Hickson Road. Pedestrians can also access the precinct from the east and west via pedestrian entries into the precinct are also provided between the Shore Sheds and the wharves.

The wharf aprons form the backbone of the WBACP public realm. The primary public pedestrian spaces are the east apron of Wharf 4/5 and the west apron of Pier 2/3. The covered ‘colonnade’ to the east of 2/3 also serves as a ‘front door’ to many of the tenancies in 2/3.

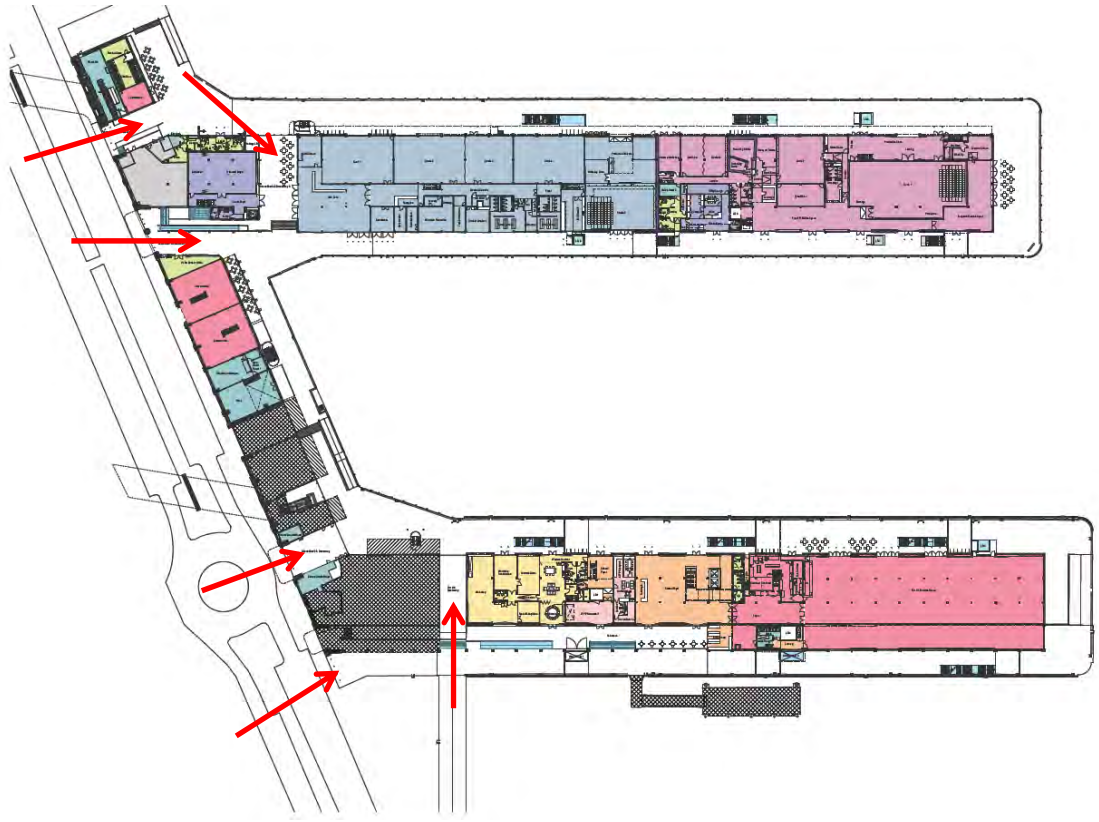


Figure 21: Key pedestrian entries

The proposed development provides for an improved interface between the tenancies and the public domain. This is achieved through:

- Providing new openings and more glazing to all for greater interaction and permeability between the tenancies and the public domain
- Providing for the arts tenancies and commercial uses to open out onto the wharf aprons resulting in greater activation for the public domain
- Using the public domain for breakout activities associated with events and functions
- Providing for small areas of outdoor dining associated with the commercial uses. The provision of outdoor seating will be guided by the wharf apron principles detailed below.

The guiding principles for the wharf aprons are that they will:

- Be accessible to all.
- Retain the bare industrial maritime character.
- Be the main point of access for many tenancies.
- Have ‘sticky’ edges with multiple openings to enliven the public realm.
- Serve as emergency egress from all venues.
- Be managed as Shared Zones allowing deliveries and service vehicles in a controlled way. ‘Front Door’ Apron sides would only allow for deliveries very early in the morning while ‘Back Door ‘Apron sides can be used for deliveries at all times, with appropriate management however with no medium/long term parking.
- Be completely free of parking apart from very short stay loading zones.
- Not have barriers to the water, but retain the existing timber baulks as edge markers and casual seating.
- Contain small areas of outdoor seating located so as not to impede service access or emergency egress.
- Provide bicycle parking.

In relation to the shore shed aprons, it is intended that they will follow the same guiding principles as the wharf aprons as well as:

- Include compliant ramps to take up changes in apron level.
- Allow for areas of outdoor seating.

The ends of the piers are special places with unique locations and need to support both casual sitting, social gathering and event use as ‘spill out’ spaces from the ends of the Pier Sheds. It is intended that they will:

- Contain some fixed outdoor seating.
- Retain clear areas for spill-out from function spaces at the ends of each Pier at ground level.

Additional shelter will be provided by the proposed new awnings at each of the Gateways along Hickson Road and retractable awnings are also proposed to the commercial tenancies located in the Wharf 4/5 Shore Shed.#

The timber baulks that define the water’s edge will continue to provide informal public seating. No landscape works are proposed as part of this application.

There will be no change to the key pedestrian linkages into the precinct. However, significant improvements to signage are proposed to improve legibility and wayfinding for visitors to the precinct. This will include upgrades to this existing signage to reference the precinct from major transport nodes and walking routes surrounding the site.

Further detail on the public domain treatment is provided in the Architectural Design Report at Appendix 20.

7.3 Heritage

A Heritage Impact Statement (HIS) for the WBACP has been prepared by Tropman and Tropman Architects and is provided at Appendix 14. The key elements and findings of the HIS are summarised below.

7.3.1 Heritage items and context

Walsh Bay comprises ten berths constructed between 1908 and 1922 for international and inter-state shipping. These are collectively known as the Walsh Bay Wharves. The Walsh Bay Wharves Precinct is listed as an item on the State Heritage Register. Walsh Bay is intrinsically linked with the surrounding areas of Millers Point and Dawes Point. Millers Point is a historically mixed residential and industrial maritime precinct containing buildings and spaces dating from early 19th century. Dawes Point is a prominent landmark in Sydney Harbour. This area is of National Cultural Significance for its social and cultural mix and its historic use, architecture and as the site of the first European settlement in Australia.

Pier 2/3

Pier 2/3 is a Federation style, two level wharf structure built between 1912 and 1923. It consists of timber framed post and beam construction with regular grid layout, weatherboard cladding and double pitched roof. Externally the Pier is defined by its robust industrial character with regular bay doors, fenestrations, alternating solid and void unified by a single full length corrugated steel roof.

It is Sydney's last wharf structure to remain in its original maritime use state with minimal subdivision and services.

Wharf 4/5

Wharf 4/5 was constructed in 1922 as a Federation style, two level wharf structure. Similar to Pier 2/3, it consists mainly of timber structure with regular grid layout, altered in the early 1980s to accommodate arts and cultural uses.

Wharf 4/5 is recognised as a highly successful adaptive reuse of a redundant finger wharf and important heritage item. Its redevelopment 30 years ago was the subject of numerous architectural and design awards.

Shore sheds

Shore sheds are of similar construction to the wharf sheds but typically irregularly shaped. They sit on solid fill retained by the precast concrete seawall. The structures of the shore sheds are T-shaped with the head of each of the four "T" buildings joined to form a continuous façade along the wide Walsh Bay service artery, Hickson Road. The facades are constructed of masonry and give little indication of extensive timber structures behind. Windows on the shore sheds are of varying styles and materials.

Statements of significance for Wharf 4/5 and Pier 2/3 are included in Chapter 5 of the HIS.

7.3.2 Regulatory and policy context

The following statutory heritage listings relate to the WBACP:

- State Heritage Register, listing number 00559 (Walsh Bay Wharves Precinct)
- Sydney Regional Environmental Plan No 16 – Walsh Bay Conservation Zone listing
- Arts NSW S.170 Register, listing number 3070001 (Wharf 4/5 and Shore Sheds)

While the Walsh Bay Wharves Precinct is listed on the State Heritage Register, Section 89J of the EP&A Act states that separate approval under Part 4, or an excavation permit under Section 139, of the *Heritage Act 1977* is not required in the case of SSD involving a State heritage item. This is to avoid duplication with the heritage impact assessment process undertaken as part of the SSDA and in consultation with the Heritage Council.

7.3.3 Assessment of heritage impacts

The HIS provides a detailed analysis of the potential impact of the overall design proposal as well as specific elements of the project. A summary of the key impacts of the proposal is provided in Table 12.

Table 12: Assessment of Heritage Impacts

DESIGN PROPOSAL	POSITIVE EFFECT	NEGATIVE EFFECT	RECOMMENDATIONS
GENERAL			
Infrastructure upgrades, demolition, hazmat removal and sub structure works (Note: sub structure works not part of this DA)	These operations are essential to improve public safety	Nil/minimal negative effect. The Walsh Bay precinct as a whole has undergone massive rejuvenation works over the past 15-20 years. Wharf 4/5 itself underwent major adaptive reuse in 1985. These works respect the heritage significance of the place and will not detrimentally impact upon this significance.	Carefully dismantle the structures and salvage and reuse fabric on site. All original and early fabric must be appropriately protected during construction and subsequently maintained.
Removal of timber columns. - 3 on Ground Level Wharf 4/5 - 8 on First Floor Level Pier 2/3	This is required to obtain completely open areas in the theatres and rehearsal rooms. Three of the columns are proposed to be reinstated in other areas.	Some loss of original elements however impact minimal.	The removed columns must be numbered, tagged and securely stored. The holes in the floors should be covered with a similar type of floorboards but should not be made to mimic the existing in terms of age and patina in order to allow the clear interpretation of the removed column locations. The new patches should be appropriate and clearly interpreted as new reparations. Removed columns could be re-instated in locations where they were removed during previous alterations.
New flooring	The new flooring will be laid down on top of the existing Ironbark floorboards to protect the heritage fabric in areas requiring acoustic treatments or heavy traffic: - In the rehearsal rooms and theatres this is a requirement for soundproofing. There is no loss of original fabric and this operation is reversible	Nil / minimal negative effect	Minimise fixings where possible. Significant building fabric and elements are to be protected from potential damage during the works, especially demolition works. Protection systems must ensure historic fabric is not damaged or removed.
Restoration of Ironbark floorboards	Large areas of the Ground and First Floor Level in Pier 2/3 expose the original heritage significant rough sawn floorboards.	Nil / minimal negative effect	In areas where the gaps between the floorboards exceed 5mm or there are raised edges that exceed 3mm in height then the floorboards shall be repaired to ensure a more even surface for OHS and equitable access requirements.
Upgrades to meet compliance with current BCA, DDA and fire codes	This is a positive outcome in achieving a better use of the space and upgrade the kitchen to a current quality and safety	Nil / minimal negative effect	Locate all new fixings into non significant fabric where possible. Services such as plumbing, electrical, air conditioning shall reuse existing service points and

DESIGN PROPOSAL	POSITIVE EFFECT	NEGATIVE EFFECT	RECOMMENDATIONS
	standards.		reticulation, as much as possible, or be accommodated within existing or new cavities to avoid impact on significant fabric. Do not chase original fabric.
New lifts and stairs	This will create better circulation through and around the buildings and also provide equitable access to this state significant site.	Nil / minimal negative effect	Clearly distinguish new elements from original fabric. Salvage removed original structural elements.
Creation of new public toilets	Upgrade and compliance to current and foreseeable future needs of the site as well as compliance with current codes.	N/A	Group toilets where possible to minimise service runs.
Creation of performance venues, rehearsal rooms, production workshops, back of house facilities and offices	This operation will provide for the current and foreseeable future demands of the buildings	The removal of heritage timber columns and steel trusses over will have some impact; however this is mitigated by the overall preservation of the buildings and ongoing adaptive reuse over the next 50 years.	Carefully dismantle the structures and salvage and reuse fabric on site where possible. Tag and store surplus.
Retention of a large proportion of the ground floor in its existing 'raw' heritage state for functions and festivals including Sydney Writers' Festival and Biennale including venue and commercial hire.	This is a positive outcome in achieving overall conservation goals by keeping the original raw and empty status of some areas	Nil / minimal negative effect	Any works must allow for the maximum retention of heritage fabric.
Creation of function spaces, bars, cafes and foyers extending onto external gantry platforms (balconies) providing breakout space for internal foyers and allowing views of outdoor performances	This operation is part of the strategy for a new use of the building. New balconies interpret the former travelling gantries.	Nil / minimal negative effect	Locate all new fixings into non significant fabric where possible.
Restoring of Heritage Items: - Dead House - Bag Shute	This is a positive outcome in achieving overall conservation goals by restoring existing heritage items	Nil / minimal negative effect	All original and early fabric must be appropriately protected during construction and subsequently maintained
Creation of dedicated areas for Interpretation of movable heritage items	There is an extensive interpretation display throughout the Walsh Bay Precinct and this is a continuation of that, providing for displays and interpretation of moveable heritage items explaining the past industrial maritime use of the place to the public.	Nil / minimal negative effect	All interpretation should be guided by the Interpretation Plans and Strategies prepared on the place in consultation with the heritage architect. Locate all new fixings into non significant fabric where possible.

DESIGN PROPOSAL	POSITIVE EFFECT	NEGATIVE EFFECT	RECOMMENDATIONS
EXTERNAL			
External stairs for fire egress	This reconfiguration of external stairs will improve safety and movement for people during major events. In both Pier 2/3 & 4/5 a consistency of contemporary detailing will articulate these new elements across the WBACP.	Nil / minimal negative effect	Locate all new fixings into non significant fabric where possible.
New external lifts for access	This is a positive outcome to provide equitable access to this state significant place. By a well-considered design placing the lift outside of the building, this reduces the loss of heritage fabric that an internal lift would create.	Nil / minimal negative effect	Locate all new fixings into non significant fabric where possible.
Installation of glazing in existing cargo sliding door openings and other solid panels on the eastern, western and northern elevations to allow for views into and out of the building.	New balconies will improve the view from the Wharves and lighting into the Piers and interpret the travelling gantries which once moved along the aprons.	Nil / minimal negative effect	All original and early fabric must be appropriately protected during construction and subsequently maintained.
Roof penetrations within the central valley at the southern and northern end to accommodate new performance spaces and associated structural modifications including truss strengthening	This operation is necessary to create additional space in height, necessary for performance and set accommodation. Roofs of the Walsh Bay Wharves have been modified during the redevelopment that has taken place over the past 15 years, setting a precedent	Minor impact. In context of the size of the structures, this is a small compensation which will adequately accommodate current and foreseeable future demands on the place. This is demonstrated by the visual impact analysis.	All original and early fabric must be appropriately protected during construction and subsequently maintained.
Installation of ESD elements, such as photovoltaic panels and seawater heat exchange systems	This is in line with current best practice in sustainable design.	Nil / minimal negative effect	Locate all new fixings into non significant fabric where possible. Locate PV cells on new roof elements. Locate chillers past first two rows of columns under the deck.
Raising of the external floor level on the eastern side of Pier 2/3 by introducing a new raised deck and continuous set of stairs beyond the existing column line	This allows level access to both sides of pier 2/3. This deck will be detailed in a reversible manner.	Nil / minimal negative effect	Ensure new work is identifiable as such in accordance with Burra Charter principles.

The Heritage Impact Statement provides the following conclusions:

- ***Architectural responses to the need to identify the historic context in the new design*** *have been considered using the most direct routes and identifying with an industrial aesthetic.*
- *The design has extended the area of* ***the raised roof section*** *the visual survey indicates that this style of roof is relatively inconspicuous when viewed from key vantage points and vistas.*
- ***Roof plant rooms*** *on the Pier 4/5 have been historically located to the north between the two pitched roofs.*
- *Pier 4/5 has had an extensive* ***photovoltaic array installed*** *on the faces of the roof. This was the subject of a Section 60 approval and shall remain. New PV cells are proposed in a similar manner to the new roof of Pier 2/3.*
- ***Services interventions****… have been designed to be subservient to the structure. The roof plant has been concealed in Pier 2/3 by the low roof design.*
- ***Fire rating*** *where required by law the structural members have been fire rated in accordance with the code and life safety requirements this may in some instance conceal certain members or be at variance with the Historic Aesthetic. In all cases alternatives have been explored with the final proposal considered to be the most appropriate outcome to comply with all requirements.*
- *The* ***Structural solutions*** *and removal of heritage fabric have been prepared in accordance with the Burra Charter.*
- *The* ***large scale spans*** *in both wharf buildings are treated similarly and there is a unity in the structural solutions. The impact is acknowledged as being significant to the Exceptional heritage fabric but necessary to achieve the outcomes for the WBACP.*
- *The large performance spaces have been reviewed for alternative solutions and the structures have been kept and strengthened rather than removed or replaced. In each large space while the impact is of significance the outcomes comply with the policies in that the form and nature of the building is not lost.*
- ***Minimal material will leave the site*** *and where possible parts will be dismantled carefully and used in interpretive displays or reused as structural elements.*
- ***Architectural responses to the need to identify the historic context in the new design*** *have been considered using the most direct routes and identifying with an industrial aesthetic.*
- ***Plant rooms on Pier 2/3*** *have been generally placed beneath a new low roof system which is below the ridges of the roofs. The design has extended the area of the raised roof section however it was the conclusion of the Visual Impact Assessment report that this style of roof was relatively inconspicuous when viewed from key vantage points and vistas. Roof plant rooms on Pier 4/5 have been historically located to the north between the two pitched roofs.*
- *Apron fire escapes and access including lifts and stairs have been incorporated to allow adequate access for egress and equitable access under the DDA and BCA and AS1428. These have been designed in a* ***simple and sympathetic contemporary aesthetic language*** *which is consistent throughout the precinct. The escape concepts were approved in the Walsh Bay redevelopment.*
- *The planning of the interior fitouts is consistent in both Piers where the exterior walls are kept generally clear of the performance or functional spaces.*
- *The Architects TZG at Pier 2/3 have* ***developed a detailing and planning language*** *which reflects the policies and heritage philosophies and desired outcomes.*
- ***Tropman and Tropman*** *as heritage consultants have observed and advised on the techniques which are to be adopted which will ensure that heritage fabric is not lost or obscured and where there has been no alternative but to remove heritage fabric chiefly to allow the approved performance spaces to be adequately designed, the least intrusive technique have been used at TTA instigation. The design teams have in the main acted in accordance with the policies in the endorsed CMPs recommendations.*

7.3.4 Mitigation measures

The proposed works will be undertaken in accordance with the recommendations in Section 8.1 of the Heritage Impact Statement prepared by Tropman and Tropman as provided at Appendix 14.

7.4 Archaeology

An Archaeological Assessment for the WBACP has been prepared by Cultural Resources Management (September 2017) and is provided at Appendix 17. The work addresses both historic period archaeology and Aboriginal archaeology. The key elements and findings of the Archaeological Assessment are summarised below.

7.4.1 Objectives

The Walsh Bay Wharves precinct is an item of state significance and Pier 2/3 and Wharf 4/5 are also assessed individually to be of state significance. The potential of the WBACP to encompass a terrestrial archaeological resource is referenced in several heritage listings. However, there has been no dedicated assessment to determine the accuracy of this statement. The objectives of the Archaeological Assessment and Management Plan are to:

- Assess the likelihood of significant archaeology being preserved within the project area;
- If present, identify the nature and scope of those archaeological resources
- Determine the cultural values of archaeological resources within the project area
- Assess the impact of the proposed works on the cultural values of the project area with respect to those archaeological resources
- Identify measures to mitigate any identified impacts

7.4.2 Methodology

The due diligence assessment and the evaluation of historic period archaeological resources have been prepared according to guidelines issued by the Office of Environment and Heritage, Heritage Division, in several publications. The tasks undertaken to determine potential archaeological resources within the project area are as follows:

Aboriginal Archaeological Resources

- Search of the Aboriginal Heritage Information Management System (AHIMS) register to identify Aboriginal archaeological sites on or close to the project area
- Reference to existing reports and primary and secondary resources to establish the environmental context of the place
- Site inspection

Historic Period Archaeology

- All existing heritage listings were identified and the values expressed in those listings were encompassed within the current assessment
- All relevant earlier reports and studies were identified and information from them has been incorporated into this analysis
- New primary research was undertaken to address the scope of past works and impacts with respect to the preservation or otherwise of archaeological resources within the project area
- Geo-referenced overlays were created of nineteenth and twentieth century surveys on a current aerial to establish potential areas of archaeological potential
- The proposed works were reviewed in relation to the areas of potential archaeology
- Discussions were held with the maritime archaeologist to co-ordinate information
- Site inspection

7.4.3 Aboriginal people and archaeological resources/profile

Aboriginal people are known to have lived in this area for at least 30,000 years. The tribe most closely associated with the project area was the Cadigal. A total of ninety-three Aboriginal sites have been recorded for the local region in the AHIMS. No sites are recorded as existing or having existed within the project area itself, however, evidence of Aboriginal occupation close to it was found when archaeological investigation was undertaken of the Moore's Wharf bond store in 1984.

The most common type of sites recorded in the area are shell middens followed by rock shelters containing shell middens. Other common site types that have been recorded in this area include concentrations of stone artefacts and rock engravings. These are the most likely type of archaeological evidence that may have formed along the Walsh Bay foreshore.

The extensive development of wharves, buildings and reclamation work at Walsh Bay during the nineteenth century is likely to have significantly impacted if not entirely destroyed any Aboriginal archaeological deposits which may once have existed along this foreshore. The demolition of the nineteenth century maritime landscape and particularly the excavation and levelling of the foreshore for the construction of Hickson Road between 1909 and 1922 would have further compounded this issue. It is considered highly unlikely that the study site would contain any Aboriginal archaeological deposits or objects.

7.4.4 Historic period archaeology

The project area is entirely a twentieth century landscape largely created between 1909 and 1922 with alterations and additions from the 1930s and later. It encompasses the wharves, sheds, sea walls and adjoining are the streets and retaining walls. There is clear evidence of the quarrying carried out to form Hickson Road and New Pottinger Street. The works undertaken in this period have had a substantial impact on evidence of earlier occupation.

There are limited opportunities for the preservation of archaeological evidence. Essentially these are confined to the base of very deeply cut features such as wells that might have survived the excavation of the bedrock to create Hickson Road. Secondly, the band of fill behind the sea-walls and up to the excavated bedrock is the only area that may preserve substantial elements of the nineteenth century landscape. The scope of evidence that could be preserved in this area could encompass any of the following categories:

- Environmental evidence including remnant but probably modified land-forms and soils representative of the interface of terrestrial and maritime environments
- Elements of nineteenth century sea-walls or property boundaries
- Fragmentary building components of the nineteenth century waterfront
- Piles from nineteenth century shore-wharves or finger wharves
- Demolition debris from several phases of building
- Soil and rubble removed from the Hickson Road excavation to fill in the gap between the old shoreline and the reclaimed land of c.1909-1922. This is likely to be of several metres depth to accommodate the difference in height between the falling ground of the nineteenth century topography and the regularised twentieth century terrain
- Artefact scatters that encompass domestic material as well as components of demolished structures. They are likely to have been deposited with the fill and represent waste materials accumulated during demolition and their random disposal in the fill as part of the Sydney Harbour Trust programme in the first decades of the twentieth century.

It is unlikely that elements that may be preserved within this zone are complete; this would be a fragmentary resource of disparate elements.

7.4.5 Cultural significance

The historic period archaeological profile does not directly relate to the evaluated cultural significance of the Walsh Bay Wharves precinct of which the WBACP is part. This assessment is largely concerned with the twentieth century landscape created between 1909 and 1922, the aesthetic and industrial values associated with it and the demonstration of the importance of the maritime industry to Sydney in this period. The principal value of the potential archaeological resource is the relationship between the nineteenth century buried landscape and the visible twentieth century landscape at Walsh Bay. It is the only direct reference point and physical demonstration of the nearly century-long tradition and maritime landscape that preceded the developments of the twentieth century and provides evidence of the continuity and importance of this place in the maritime role of Sydney. It describes the environment that gave rise to the programme of renewal and provides the context that explains the need for this work. These nineteenth century elements, if found, would also be rare survivors; the scale of the Sydney Harbour Trust programme removed all visible evidence of the older landscape.

On this basis as a contributor to the assessed cultural values of the Walsh Bay Wharves precinct and the WBACP the archaeological resource is also assessed to have state significance. The possible presence of preserved environmental evidence of the nineteenth century and, perhaps, of some aspects of the pre-settlement

landscape would also make a contribution to the narrative of the relationship between the specific environmental conditions of this place and its subsequent development for historic period use.

With respect to Aboriginal archaeological resources the study area is assessed to have no potential to contain Aboriginal sites or objects and for this reason it has no cultural value for its potential research values.

7.4.6 Impact assessment

Most works for the redevelopment of Pier 2/3, Wharf 4/5 and the shore sheds will be concerned with the above ground structures and will have no impact on any in-ground archaeological resource. The only identified potential impacts are associated with utilities; trenching associated with the renewal of existing services or possible provision of new connections. These works would disturb deposits to shallow depths and in discrete areas. Excavations are unlikely to remove or displace structural evidence but they may expose some components and will also displace artefacts and demolition debris contained in the fill. This work will not substantially affect the cultural value of this resource.

The proposed works will have no impact on potential Aboriginal archaeological evidence.

In relation to maritime archaeology, the proposed development does not involve any works that will disturb the seabed therefore no impacts on maritime archaeology are anticipated.

7.4.7 Mitigation measures

Aboriginal Archaeology

- It is concluded that no further archaeological investigation in regard to Aboriginal archaeological sites is necessary. It is recommended that the proponent proceed with the proposed works with caution.
- In the unlikely event that suspected Aboriginal objects are discovered during the course of the proposed works then work should be stopped in this area, the object safeguarded and a suitably qualified archaeologist contacted to record the find prior to work continuing.
- The Office of Environment and Heritage (OEH) and the Metropolitan Local Aboriginal Land Council should also be contacted and informed of any finds as soon as possible and prior to work in that location continuing.

Historic Period Archaeology

- Excavation works for utilities should be monitored by an archaeologist for the purpose of documenting the archaeological profile and any relics or features that are revealed by that work.
- This work will not require an excavation permit to be issued by the Heritage Division of the Office of Environment and Heritage, however, a statement of methodology and research design should be prepared to define the scope of works and outcomes for monitoring programmes.
- Evidence recovered from monitoring and maritime archaeological work should be assessed to determine if an interpretation strategy would be appropriate.
- Moveable heritage will be managed according to the current interpretation strategy

7.5 Visual impact

A Visual Impact Assessment (VIA) has been prepared by Ethos Urban and is provided at Appendix 18. A summary of the VIA is provided below.

7.5.1 Methodology

The methodology for the VIA involved the analysis of baseline factors, analysis of the extent of visual effects and the assessment of visual impacts. The VIA was undertaken in accordance with the Land and Environment Court requirements. In particular, the methodology for documentation of views for the purpose of preparing analytical and photorealistic photomontages complies with the Land and Environment Court of New South Wales practice direction for the preparation of photomontages for use in evidence.

It is important to note that the Ethos Urban VIA is an update of the original work Visual Impact Assessment prepared by Richard Lamb and Associates (November 2016) and submitted with the Stage 2 SSDA (now withdrawn - refer discussion in section 1.1). To ensure consistency with the rigorous process established by Richard Lamb and Associates, and to not compromise their certification of accuracy in accordance with Land and Environment Court policy, the only changes that have been made are to photomontages to reflect amendments made to the proposal subsequent to the withdrawal of the Stage 2 SSDA. The amendments to the

photomontages were made using the same methodology as that employed for the preparation of the originals, including the use of the same photos taken by RLA and update engagement by the same consultants who prepared the original photomontages. To this effect, the work of RLA is acknowledged as the basis for the Ethos Urban VIA. In fulfilment of Land and Environment Court policy, reference should be made to the original RLA report, a copy of which is provided in Appendix 1 to the Ethos Urban VIA.

7.5.2 Impact assessment

The VIA found that the proposal will not have a significant impact on the existing visual character of the site or broader precinct. It does not introduce large, prominent or incongruent development. Rather, it has a scale that is not readily discernible from most viewing locations, and is of a design that is compatible with existing visual character.

Due to views either being distant or obstructed or blocked by buildings, the VIA indicates that the detail of the proposal is not easily perceived and would not be prominent. When viewed from a medium distance such as from Upper Fort Street, Dawes Point, or Harbour Bridge south-east pylon lookout, the proposal is discernible but subtle.

The VIA also notes that the overall scale, and scale relative to existing buildings, of the proposed alterations, is minimal. Together with its small scale and siting, form and design that is compatible with the character of existing buildings, the proposal will maintain the unique visual qualities of Sydney Harbour, and in particular that of the Walsh Bay precinct.

More subtle changes such as those involving altered openings and windows would not significantly alter the existing pattern of infill panels on the most exposed façades of Pier 2/3 or the character of the less visible façades of Wharf 4/5.

In summary, the overall visual impacts of the project were found to be minor and acceptable and will not require extensive impact mitigation. The VIA makes a number of recommendations that are addressed in the mitigation measures below.

7.5.3 Mitigation measures

The following mitigation measures are proposed:

- Stairs and external lifts should be designed to minimise view blocking. The design of the stair risers should maximise transparency to views and lifts are to be encased in glass as proposed
- No further obstruction of views through the shore shed opening leading to Wharf 4/5 should be permitted
- No new permanent structures that could obstruct views to the harbour through the openings in the shore sheds and the breezeway through Pier 2/3 should be allowed
- External stairs are to be detailed to maximise visual transparency as well as the appearance of lightness and openness
- Internal framing and structure is to be minimised to increase transparency in views and to reduce the visual presence of the lifts in views
- Non-reflective glass should be used on the lifts to increase the transparency of the lift glazing to views

7.6 Transport and access

GTA Consultants (GTA) has been engaged to provide transport advice and documentation for the SSDA. This has included the following key tasks:

- assessment of the construction and operational traffic impacts of the project
- preparation of a Green Travel Plan to provide an integrated and sustainable transport access concept for the precinct

The following reports have been prepared by GTA and are appended to this EIS:

- *Walsh Bay Arts and Cultural Precinct State Significant Development Application Transport Impact Assessment* (October 2017) - Appendix 15
- *Walsh Bay Arts and Cultural Precinct State Significant Development Application Green Travel Plan* (October 2017) – Appendix 16

- *State Significant Development Application Construction Pedestrian and Traffic Management Plan* (October 2017) – Appendix 21

A summary of each of these reports and an assessment of the transport impacts is provided below.

7.6.1 Existing conditions

The existing transport and traffic conditions are described in the Transport Impact Assessment (TIA). Notable features of the existing conditions include the following:

- Circular Quay is located approximately 1.3 km walk from the site (via George Street) and caters for ferry, train and bus services, as well as the future CBD light rail service. Wynyard railway station is located approximately 1.3 km walk from the site. Wynyard Walk provides easy pedestrian access between Wynyard and Barangaroo.
- Bus routes 324 and 325 (Watsons Bay to Walsh Bay) operate along Hickson Road outside the site. Bus route 311 also operates along Hickson Road with the nearest bus stop for this route is 250 metres to the south west opposite Barangaroo Reserve.
- As a result of the isolated nature of the site from the CBD and significant grade changes, topographically, the WBACP is currently somewhat difficult to navigate and access by foot. However, there are good pedestrian links along the Sydney Harbour foreshore between the site and The Rocks precinct. Pedestrian footpaths are generally provided on both sides of each of the roads in the vicinity of the subject site.
- Bike lanes are provided on both sides of Hickson Road and connect the site to the greater CBD cycle network.
- Hickson Road is designated as a regional route (7312) and is classified to its intersection with Lower Fort Street adjacent to Pier 1. Hickson Road is closed between Pottinger Street and Alfred Street between 10pm and 3am on Friday and Saturday, with access only for local residents. In the vicinity of the site, Hickson Road is a dual carriageway with three lanes in each direction. There are parking lanes either side of a single traffic lane on each carriageway. On-street time restricted car parking (generally 2P and 4P) is provided on both sides of the carriageway as well as within the median.
- A number of on and off-street car parking facilities are provided in the vicinity of the site. On-street 2P and 4P car parking is generally provided on the road network surrounding the site. There are three existing commercial car parks at Towns Place, Barangaroo Point (the Cutaway) and the Bond Store One building. All three car parks are located along Hickson Road within 200 metres of the WBACP.
- Two off-street car parking stations are located to the west of the site on Hickson Road, whilst a number of commuter car parking stations are located further afield in the northern part of the CBD.

7.6.2 Transport strategy for the WBACP

There is substantial transformation occurring in the northern Sydney CBD precinct inclusive of the WBACP. This transformation includes the Barangaroo redevelopment site, which is located immediately south-west of the WBACP. Barangaroo will include a major transport hub to service the northern Sydney CBD that includes a new metro station, ferry wharf and the Wynyard Walk link to Wynyard Station. A number of other transport initiatives identified by the Sydney Centre Access Strategy will also contribute to the use of sustainable transport modes for the WBACP.

<u>Public Transport</u>

There will be a substantial increase in the provision of public transport further into the future. There following major public transport initiatives proposed will change the way people access the northern section of Sydney's CBD and improve accessibility to the precinct:

- Sydney Metro, which will provide frequent train services to Barangaroo and will connect with the broader heavy rail network. The proposed station will be within 800 metres of the WBACP. Operation is anticipated to commence in 2024 with services provided every four minutes during the peak periods. The proposed station at Barangaroo is shown in Figure 23.
- The CBD and South East Light Rail (CSELR) will provide additional high capacity public transport services between Sydney's south east and Circular Quay, which is a key transport hub currently serving the WBACP. Light rail is proposed to provide a "turn up and go" service operating up to every four minutes during the peak periods.

- Barangaroo ferry wharf, which is now operational and provides services every 30 minutes to and from Sydney's CBD. These services run every day, between 6am and 11:30pm Mondays to Friday and between 8am and 11:30pm on weekends.
- A strategic bus corridor along Hickson Road, which will improve the existing bus network in the Sydney CBD, to support significant developments such as Barangaroo and new transport networks including the light rail and Sydney Metro projects. This involves provision of more direct routes and rationalised stops, making it easier for passengers to understand the bus network.
- New cyclist connections to link Barangaroo with the broader cyclist network, including the Sydney Harbour Bridge, Pyrmont Bridge and Kent Street cycleways. This will provide additional cyclist connections for the WBACP.

These public transport initiatives will support the shift away from using private vehicles to access the site to more sustainable transport options. Further discussion on sustainable transport solutions for the WBACP is provided in Section 7.6.6.

Figure 22: Existing and proposed public transport facilities

Figure 23: Artist's image of Barangaroo Metro Station (Source: www.sydneymetro.info)

Taxis

Three new taxi ranks are currently being considered within the vicinity of the WBACP, as shown in Figure 24. Given that taxis are likely to be a primary access mode to the site for patrons, this is considered appropriate. In the short term, these facilities would be provided through changes to existing signage, but in the longer term, higher quality facilities may be incorporated into the streetscape design as recommended by the Harbour Village North Public Domain Study. Any provisions implemented for taxis would be designed in accordance with Australian Standards and Council's parking requirements.

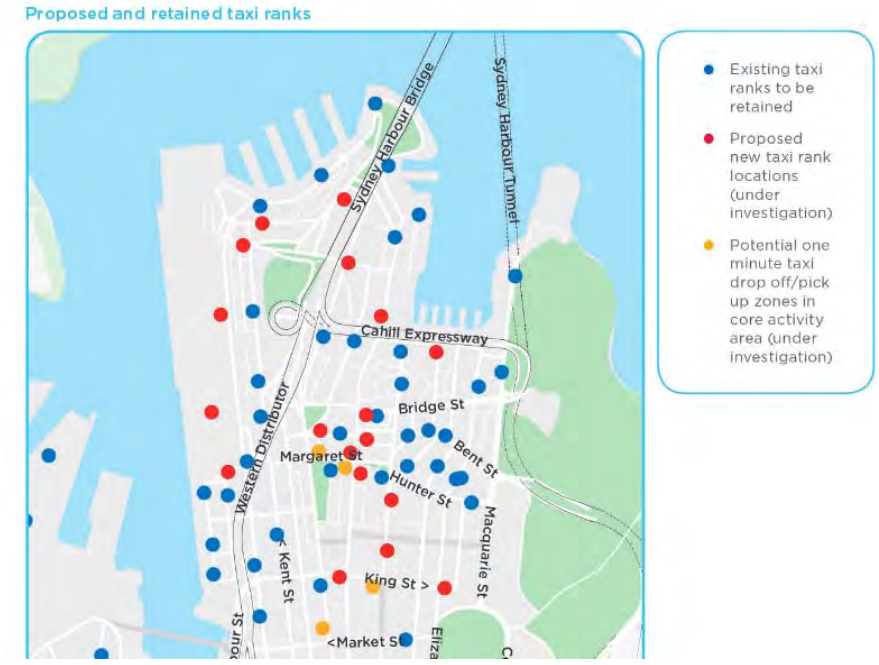


Figure 24: Taxi rank access (Source: Sydney City Centre Access Strategy)

Walking and cycling

There are existing bicycle lanes along Hickson Road providing connection to the wider cycleway network within the Sydney CBD. As part of the Sydney City Centre Access Strategy and Sydney's Cycling Future, a cycleway will be developed to integrate with Barangaroo. These existing and proposed cycling facilities provide access for the WBACP to key cycling links such as the Sydney Harbour Bridge, Kent Street and Pyrmont Bridge. Separated cycling infrastructure is not considered to be required due to the lower volumes of traffic on the peninsular.

35 bicycle parking facilities are proposed on site for staff and 40 visitor bicycle parking racks within the public domain. Bicycle parking provision will meet five per cent of the staff population and one per cent of the visitor population. The lower provision for visitor bicycle parking is based on the reasonable assumption that the anticipated clientele of the precinct (with consideration of time and function type) would not typically be expected to access the precinct by bicycle.

End of trip facilities are provided in each tenancy. The proposed end of trip facility provisions will adequately accommodate the expected demand for the WBACP and contribute to promoting cycling to the site, particularly for staff.

As noted elsewhere, Walsh Bay is currently somewhat difficult to navigate and access by foot. A number of initiatives have been, or will be, introduced to improve pedestrian access to the precinct. These include:

- Improved wayfinding and signage (refer discussion in Section 5.10).
- Barangaroo integration works, which are improving pedestrian connectivity between the CBD/Millers Point and the Walsh Bay and Barangaroo waterfront areas.
- Wynyard Walk, which now provides a fully accessible pedestrian link between Wynyard Station and Barangaroo. The walkway allows pedestrians to get from the Wynyard transport hub to the Barangaroo waterfront in approximately six minutes, avoiding steep inclines and road crossings.
- Upgrading of the north-south section of Hickson Road to form a more pedestrian friendly environment as part of the works associated with the Barangaroo development.

7.6.3 Traffic impact

In terms of traffic impact, the WBACP site already accommodates a range of arts and cultural uses and therefore the proposed development essentially involves an intensification of land use rather than a wholly new development.

The ability of the site to generate traffic is restricted by the zero on-site car parking provision, however, the redevelopment of the site will still generate traffic movements as a result of the following:

- Loading vehicle trips to the site
- Taxi trips to the site
- Pick up and drop off trips to the site
- Private vehicle trips to the site utilising nearby on- and off-street car parking within the precinct

The TIA assesses the impact of the proposed development for four different scenarios:

Scenario 1 – Peak Population

This scenario represents the potential for the most concurrent events to occur within tenancies within the precinct. As such, a level of concurrence will be rare, the peak populations have been normalised to account for periods without performances. This scenario does not represent a regular occurrence; rather it demonstrates the most probable upper limit of the population that would be within the tenancies at any one time.

Scenario 2 – Everyday Population

This scenario identifies the population on an everyday basis expected to be present within the precinct. The scenario reflects the peak population in terms of timing for peaks and further reduces it by 50 per cent, taking consideration of different aspects, which contribute in attracting population to the precinct. The assumptions considered for this scenario include:

- Different event profiles within Pier 2/3 Function Space, where the maximum population is 1,300 for a cocktail event but only 650 for a dinner event.
- Reduction in capacities for Commercial 3 and 4 (i.e. the restaurant/ bar is not full).

- Tenants that would be touring throughout the year.
- Performances that may not attract capacity crowds.
- A lack of concurrent performances amongst tenancies.
- Differences in scheduling times and days for performances amongst the tenancies.

Scenario 3 – Cumulative

This scenario reflects the worst-case scenario, where peak scenario population will appear concurrently and all venues are at full capacity. This scenario considers the expected population from other activities in venues surrounding the WBACP, including:

- Roslyn Packer Theatre
- Event space within Pier 2/3
- Pier 1 function spaces.

It is highly unlikely that the cumulative scenario would ever occur, since it relies on almost every venue within and surrounding the precinct to be at capacity concurrently.

Scenario 4 – Event

This scenario is based on the Sydney Writer's Festival and Biennale events. These events would utilise portions of the tenancies as well as the public domain as part of a programmed event. The maximum populations have been augmented by an additional 70 per cent to allow for changeover between various events, i.e. where one event is clearing and another is queuing to enter.

Traffic generation for the proposal has been estimated based on the same assumptions used in the Barangaroo Integrated Transport Plan which outlines an intention of 85 per cent access to Barangaroo by public transport, 10 per cent by walking and cycling, and five per cent by private vehicles. This is considered reasonable given the proximity of the WBACP to Barangaroo. Having regard to this mode share assumption the TIA estimates the number of people travelling by each mode under each scenario as shown in Table 13.

Table 13: Future transport demands

Mode	Share	Scenarios			
		Peak population	Everyday population	Cumulative population	Event population
Train	33%	1,466	726	2,293	1,403
Bus	33%	1,466	726	2,293	1,403
Walk	17%	755	374	1,181	723
Car	8%	355	176	556	340
Bicycle	2%	89	44	139	85
Ferry	3%	133	66	608	127
Taxi	4%	177	88	277	169
Total	**100%**	**4,441**	**2,200**	**6,947**	**4,250**

Based on the above estimates of future transport demands, Table 14 estimates traffic generation for the different scenarios.

Table 14: Traffic generation estimation

Mode	Average vehicle occupancy	Trip generation			
		Peak scenario	Everyday scenario	Cumulative scenario	Event scenario
Taxi	1.5	118	59	185	113
Private vehicle (including pick up/drop off)	2	178	88	278	170
Loading vehicle	-		<5		
Total		**296**	**152**	**463**	**283**

The overall percentage increase in traffic volume on Hickson Road is estimated as follows:

Table 15: Percentage increase in traffic volume on Hickson Road

Scenario	Weekday peak		Weekend peak	
	Traffic volume	Percentage increase	Traffic volume	Percentage increase
Peak	863	24%	1,052	26%
Everyday	782	12%	947	13%
Cumulative	956	37%	1,174	40%
Event	855	23%	1,043	25%

Further details on how these figures were calculated are provided in the TIA.

The TIA notes that for the everyday, peak and event scenarios, the increase in traffic volumes is unlikely to have a substantial impact on existing operation of the road network. However, for the peak and event scenarios, it recommends that specific traffic management plans would need to be put in place to manage arrivals and departures.

In relation to the cumulative scenario, the TIA notes that while this scenario is highly unlikely, it would have a noticeable impact on the existing operation of the road network. Events falling into the cumulative scenario would require an event specific traffic management plan.

In relation to pick-up and set-down, the TIA recommends that the existing kerbside space on Hickson Road be reallocated to provide an additional three short-stay or pick-up/set-down spaces near the WBACP to accommodate the increase in demand.

In relation to car parking, no staff or visitor car parking is currently provided on-site and this will not change as a result of the proposed development. This is generally consistent with the current operation and reflects the constrained nature of the site.

Given the site's location within the City of Sydney, the TIA has referenced the City of Sydney's Local Environmental Plan 2012 (LEP 2012) as the basis for determining on-site car parking. LEP 2012 parking provisions for 'entertainment uses' specify the maximum number of car parking spaces that must be provided but no minimum car parking rate applies. Given that the City applies a maximum and no minimum car parking rate, the provision of no car parking meets the City's requirements and is consistent with many of the City's and Transport for NSW (TfNSW) transport policies that promote sustainable transport. The sustainable transport measures for the WBACP are discussed below.

Notwithstanding zero supply of car parking, it is acknowledged that the subject site is still anticipated to generate a level of car parking demand that will need to be accommodated off-site. The GTA report envisages that such demand might be expected to be in the order of 84 spaces on a typical weekday and 68 spaces on a typical Saturday. The additional car parking demands will be accommodated within the surrounding publicly available car parking supply, including a combination of the following:

- surrounding on-street car parking supply
- surrounding off-street car parking stations, with a total provision of approximately 690 spaces.

Having regard to surrounding existing on-street and off-street supply, the supply is modest and able to be accommodated.

The TIA notes that in the short term after the development, if there is a parking supply shortfall, then drivers will notice that parking is in short supply and in the medium-to-long term, this will likely support the shift to other transport modes.

In summary, the key findings of the TIA are as follows:

- The Barangaroo redevelopment will include a major transport hub to service the northern Sydney CBD. The proposed high frequency metro service within 800 metres, improved bus services near the site, additional connections to strategic cycleways, the recently commissioned ferry wharf and the new light rail to Circular Quay will improve the public transport offering and access for the WBACP. Based on the existing and proposed public transport facilities near the WBACP public transport provision is considered sufficient to accommodate increased future demand associated with the proposed development.

- The proposed development is permitted a maximum statutory parking requirement of 550 spaces. The development meets statutory requirements with no on-site parking provision proposed for the site.
- Sufficient on-street and off-street parking is available within the precinct, noting the focus on promoting non-car based travel modes. A preliminary Green Travel Plan has plan has been prepared as part of the SSDA requirements (refer discussion in Section 7.6.6).
- 35 secure bicycle parking facilities will be provided on site for staff with visitor bicycle parking racks provided in the public domain (with capacity for approximately 40 bicycles). End of trip facilities are provided within each tenancy.
- The anticipated everyday operation of the site is expected to increase traffic volumes on Hickson Road by up to 13 per cent. Under this scenario, there is adequate capacity in the surrounding road network to accommodate the traffic generated by the proposed development.
- The peak and event scenarios for the site estimate an increase of up to 26 per cent in traffic volumes on Hickson Road. This is not considered to have a substantial impact on the operation of the existing road network. However, it is recommended that an operational traffic management plan is developed to manage arrivals and departures for the WBACP to ensure pedestrian safety and access is maintained and kerbside allocation (public transport and pick-up/ set-down) effectively accommodates the demand. The operational traffic management plan would be implemented by the Precinct Manager.
- To accommodate additional demand associated with pick-up and set-down for the everyday, peak and event scenarios, it is recommended that the existing kerbside space is reallocated to provide an additional three short-stay or pick-up/ set-down spaces near the WBACP. This would result in the displacement of three on-street parking spaces, which could be absorbed by the surrounding off-street parking provisions near the WBACP.
- The cumulative scenario is considered highly unlikely to occur. Under this scenario it is estimated that traffic volumes on Hickson Road could increase by 40 per cent. The operational traffic management plans for such events would be developed and approved in consultation with TfNSW, Roads and Maritime, the Transport Management Centre and the Sydney Coordination Office.

7.6.5 Loading facilities

As noted in Section 5.8, a new loading facility will be provided on Pier 2/3, which will complement the existing loading facility on Wharf 4/5 and the on-street loading provisions.

The proposed land uses in the site is expected to be accessed by up to eight Small Rigid Vehicles (SRVs), eight Medium Rigid Vehicles (MRVs) and four Small Service Vehicles (SSV) on a typical weekday and weekend, during morning peak from 7am to 10pm. Table 16 shows the total number of expected service vehicles required to access the site.

Table 16: Cumulative loading trips

Loading Vehicle Type	Morning 7am – 12pm	Afternoon 12pm – 6pm	Evening 6pm – 10pm
SRV	18	9	2
MRV	14	6	2
SSV	17	13	5

It is anticipated that between the new loading dock on Pier 2/3, the existing loading dock on Wharf 4/5 and the on-street loading provisions, there will be adequate loading capacity to cater for the demands generated by the additional uses. In addition, a loading dock management system would be implemented to ensure efficient use of the available space.

7.6.6 Green Travel Plan

A Green Travel Plan (GTP) has been prepared for the WBACP (refer Appendix 16), which outlines initiatives that could be implemented to enable an integrated transport access concept for the precinct. The aim of the GTP is to reduce the environmental impact of travel to/from and in association with the operation of the precinct. In essence, the plan encourages the reduced use of motor vehicles as well as using alternatives to the single occupant motor car. Key target modes and actions in the GTP are summarised in Table 17.

Table 17: Key target modes and actions in GTP

TARGET MODE	RECOMMENDED ACTIONS
Implementation of the GTP	▪ Appoint a Travel Plan Coordinator (TPC) to ensure the successful implementation and monitoring of the GTP. This should be coordinated in an integrated format for the entire precinct not for individual developments. ▪ Conduct sporadic travel surveys to establish travel patterns in the area and assess success of the GTP. This is to be managed by the appointed TPC. Allow surveys to incorporate suggestions from visitors and staff to improve green travel arrangements. Door surveys may be undertaken simply asking where they have commuted from and how they arrived to the site.
Increase walking, running and cycling to work and to other destinations (errands, recreation, social) by staff, and visitors	▪ Ensure that there is accessible and secure bike parking for staff and visitors. ▪ Use the precinct bicycle store as a prominent reminder of cycling to the site. The 'Pit Stop' at City of Sydney represents a precedent in terms of the design of such a facility. ▪ Promote local bicycle facilities, shops and learn-to-ride or bike maintenance courses available through Sydney Cycleways to staff to encourage and facilitate an increase in cycling. ▪ Work with City of Sydney and other relevant partners to establish a clear tourist walk with associated wayfinding, maps and points of interest between Circular Quay and Barangaroo/ Wynyard. ▪ Advocate for the creation of street networks and associated cycleways, footpaths and links to encourage cycling and walking.
Increase public transport use	▪ Tenants to consider providing information about public transport access options to the site at the time of ticket purchase.
Increase consideration of point to point transport options	▪ Tenants to consider providing information about available point to point transport options to the site at the time of ticket purchase.
Increase car share use	▪ Undertake awareness campaigns with tenants of the WBACP to promote, where possible, the use of car share services.
Increase awareness and knowledge of available transport options by tenants	▪ Development and provision of a Transport Access Guide (TAG), which would be given to the tenants of the precinct. This document would be based upon facilities currently available at the site and would be updated regularly to reflect changes in public transport service, active travel facilities and other relevant pieces of information. ▪ Consider providing real time information on public transport arrival/ departure times. There is a growing trend of buildings with information screens in, for example, the lobby identifying information such the local weather and a rolling newsfeed. A similar display could be arranged to show train departure times from Circular Quay or Wynyard station and as well as bus stops within the vicinity of the site. This would also extend to informing tenants of the availability of smartphone apps such as TripView for real time data. The digital signs proposed for the precinct could include this information. ▪ A half-yearly newsletter could be provided to tenants for up to two years after occupation bringing the latest news on sustainable travel initiatives in the area and informing of upcoming changes (light rail and Sydney Metro). This newsletter could incorporate events occurring from the pedestrian generators identified in Section 2.4.4 of the GTP. ▪ Promote bicycle share scheme use to visitors to the precinct.

Further actions are detailed in Chapter 5 of the GTP.

The GTP also puts in place monitoring and review mechanisms to ensure that it is meeting its objectives and having the intended impact on car use and transport choices for visitors and staff of the WBACP.

7.6.7 Construction traffic

A Construction Pedestrian and Traffic Management Plan (CPTMP) together with a Traffic Guidance Scheme (TGS) have been prepared to appropriately address the construction traffic related impacts associated with the redevelopment of the WBACP. Copies of the CPTMP and TGS are provided in Appendix 21. The CPTMP has been prepared in accordance with the City of Sydney Standard Requirements for Construction Traffic

Management Plans and the Transport for NSW CPTMP Checklist. The appointed contractor will be required to undertake all works in accordance with the CPTMP.

The overall principles of traffic management during the construction activity include:

- Provide an appropriate and convenient environment for pedestrians
- Minimise the impact on pedestrian and cyclist movements
- Maintain appropriate capacity for pedestrians on footpaths around the site
- Maintain appropriate public transport access
- Minimise the loss of parking
- Maintain access to/ from adjacent properties
- Restrict construction vehicle movements to designated routes to/ from the site
- Manage and control construction vehicle activity in the vicinity of the site
- Carry out construction activity in accordance with the approved hours of works.

Construction traffic impact

Based on a preliminary assessment, the number of construction vehicle movements associated with proposed works has been estimated and is summarised in Table 18.

Table 18: Indicative two-way construction traffic movements

Construction stage	Average number of truck movements per day		Cumulative number of truck movements per day	Cumulative number of truck movements per hour
	Wharf 4/5	Pier 2/3		
Demolition	20	20	40	Up to 4
Construction	35	45	80	Up to 7

As shown in Table 18, the estimated cumulative impact of construction activities would generate up to seven two-way vehicle movements per hour. This would equate to approximately 80 cumulative vehicle movements per day. This number of construction vehicles is not expected to have an adverse impact on the safety and operation at the key intersections surrounding the site.

The largest truck proposed to be used for the works would be a 12.5-metre Large Rigid Vehicle.

At this low level of heavy vehicle movements, no adverse impacts to the surrounding road network are expected. However, further assessment would be undertaken prior to construction, with the cumulative impacts of other key construction sites (including Sydney Metro) considered using available data at the time.

7.6.7 Cumulative construction traffic impacts

There are currently a number of significant developments under construction within the immediate local area. These projects include, but are not limited to:

- CSELR
- Sydney Metro
- Barangaroo precinct redevelopment

The CPTMP includes a review of the potential construction related impacts from key nearby developments. It estimates that the indicative construction vehicle movements generated by key construction sites are as follows:

- Walsh Bay: Seven vehicle trips per hour
- Sydney Metro: Eight vehicle trips per hour
- CBD and South East Light Rail (CSELR): One vehicle trip per hour
- Barangaroo: 50 to 80 vehicle trips per hour.

The above summary indicates that the indicative construction traffic generation from the WBACP site is relatively low in comparison with the anticipated increase to traffic from other construction sites. In particular, the Barangaroo development site would generate a notable increase in construction vehicle traffic of up to 80 vehicle

trips per hour, during a road network peak. As the traffic impact assessment for Barangaroo indicates that the surrounding road network would operate satisfactorily, the addition of seven vehicle trips per hour from the WBACP site plus another eight vehicle trips per hour from the Sydney Metro site, is anticipated to be a negligible increase in construction traffic and is unlikely to cause unacceptable levels of service.

In addition, as noted in the CPTMP, Transport for NSW has recently announced that following community consultation “crushed rock will be removed by barges for the excavation work that takes place at Blues Point, Barangaroo and under Sydney Harbour – reducing impacts to the road network and cutting truck movements” (CPTMP, p.16) The significance of this is that the cumulative construction traffic impacts of multiple concurrent projects on the road network would be reduced as a result.

It is therefore anticipated that the cumulative traffic impacts of the various work sites, with the addition of the WBACP, would not have adverse impacts to the surrounding local area given that peak activities would mostly occur outside road network peak periods and given the low volume of construction vehicles anticipated for the WBACP development.

It is recommended that the contractor liaises with the other sites to avoid duplication or conflicting messages of traffic control signs in the vicinity of the site. In particular, consultation with City of Sydney and the CBD Coordination Office would be required to ensure appropriate coordination with other works and events in the area.

Truck routes

Truck movements would be restricted to designated routes and confined to State roads in the broader road network. Truck routes to/ from the site have been identified in the CPTMP with the aim of minimising the impact of construction traffic on roads near the site.

The directional distribution and assignment of traffic generated by the development will be influenced by a number of factors, most notably the origin/ destination of materials and the configuration of the arterial road network in the immediate vicinity of the site. Ongoing changes to routing may be required due to the impacts from the construction of the CSELR and Barangaroo development, as well as the proposed Sydney Metro construction.

Site access

Separate construction vehicle accesses would be provided for Pier 2/3 and for Wharf 4/5.

Pier 2/3 would be accessed from the ground level via the existing eastern vehicle access of the pier. Vehicles would be required to enter the wharf and undertake a three to five-point turn at the corner of the wharf, to exit the site in a forward direction.

The existing western access at Wharf 4/5 is to be maintained for use by existing tenant vehicles and pedestrians.

At Pier 2/3, the existing pedestrian entries would be maintained with Class B hoarding provided at the eastern pedestrian access, which would cross the proposed construction site. A traffic controller would be present during construction hours to manage pedestrian and construction vehicle interaction.

Pedestrian and cyclist access

During construction, pedestrian and cyclist movements should be maintained wherever possible.

The bicycle shoulder lane and pedestrian footpath along Hickson Road are to operate and be maintained as existing. Along the harbour, the pedestrian connection between the piers would be closed for construction. As such, wayfinding signage would be implemented at key locations to direct pedestrians to the alternative route, such as the footpath on Hickson Road.

Class A construction fencing would be erected around the perimeter of the site.

Further details regarding pedestrian and traffic management during construction are provided in the CPTMP and TGS in Appendix 21.

7.7.8 Mitigation measures

The proposed works will be undertaken in accordance with the following mitigation measures:

Transport Impact Assessment

- 35 secure bicycle parking facilities will be provided on site for staff with visitor bicycle parking racks for 40 bicycles provided in the public domain. Additional bicycle spaces will be provided in the future subject to demand.

- Where conflicts are anticipated for the use of the on-street and on-site loading bays, the precinct manager will implement a loading dock management system which coordinates loading dock usage between tenants. The maximum vehicle size permitted on-site is an 8.8-metre MRV.
- An operational traffic management plan will be developed to manage arrivals and departures for the WBACP to ensure pedestrian safety and access is maintained and kerbside allocation (public transport and pick-up/ set-down) effectively accommodates the demand. The operational traffic management plan will be implemented by the appointed Precinct Manager.
- Opportunities to reallocate the existing kerbside space in Hickson Road to provide an additional three short-stay or pick-up/ set-down spaces near the WBACP will be investigated in liaison with City of Sydney.
- Operational traffic management plans for major events in the Precinct will be developed and approved in consultation with TfNSW, Roads and Maritime, the Transport Management Centre and the Sydney Coordination Office.
- The Precinct Manager will act as the Travel Plan Coordinator to implement and monitor the WBACP Green Travel Plan

Construction Traffic Management Plan

- The approved construction contractor will undertake demolition and construction works in accordance with the requirements of the CPTMP and the TGS (Appendix 21).
- The approved construction contractor will consult with the CBD Coordination Office, Transport for NSW, RMS, Barangaroo Delivery Authority, Sydney Metro and City of Sydney prior to undertaking the works.
- Construction workers will be encouraged to take public transport to site, with the bus service timetable provided to each worker during induction and displayed at prominent locations on site.
- Construction vehicles will be restricted to designated routes to and from the site.
- The proposed works zone will not to impede on the existing bus stop at the frontage of the site.
- Traffic controllers will be present at vehicle accesses to manage pedestrian, cyclist and construction vehicle interaction.
- Pedestrian wayfinding signage will be provided in accordance with the TGS.

7.7 Noise and vibration

Arup has prepared a Noise and Vibration Impact Assessment (NVIA) to assess the noise and vibration impacts associated with the new Walsh Bay Arts and Cultural Precinct. A copy of the NVIA is provided at Appendix 19. The following elements have been assessed and addressed:

- Construction noise and vibration impacts
- Operational noise and vibration impacts from the use of the buildings
- Mechanical and plant noise impacts
- Noise impacts associated with the holding of limited precinct wide events comprising the Sydney Writer's Festival and the Biennale only
- Operational traffic noise,
- Mitigation measures.

A summary of the NVIA is provided below.

The NVIA has been subject to peer review by Aecom to ensure that it adequately addresses all issues raised in the SEARs. The outcomes of the peer review have been incorporated into the NVIA.

7.7.1 Existing noise environment

The WBACP site is subject to the following existing noise sources:

- Marine traffic in Sydney Harbour (noise from boat engines, party boats and occasional horns)
- Road and rail traffic on the Sydney Harbour Bridge

- Regular civilian helicopter traffic
- Occasional military helicopter traffic
- Distant aircraft noise
- General activity noise from users of the existing facilities.

The nearest sensitive receivers are residential apartments in Pier 6/7 and within the shore shed buildings to the west of Wharf 4/5 as well as the hotel in Pier 1 to the east. Residential properties are also located immediately to the south east above Hickson Road. A number of commercial receivers are also in the vicinity of the site.

Figure 25 identifies the key receptors, as shown in the NVIA and groups residential receivers with similar existing background noise levels (RBLs) into Noise Catchment Areas (NCAs). To determine existing RBLs noise measurements were undertaken at the measurement locations identified in Figure 26.

Figure 25: Key noise receptors

Long-term noise monitoring was carried out from Tuesday 8 August to Wednesday 23 August 2017 and Friday, 1 September to Wednesday 6 September 2017. In addition, short-term operator attended noise measurements were conducted on 21 and 22 August 2017 at each logger location as well as a number of supplementary locations in order to identify noise sources present at each NCA.

Figure 26: Noise measurement locations

7.7.2 Noise criteria

The NSW Industrial Noise Policy (INP) provides the policy framework for the assessment and management of noise emissions from the proposed operation of the WBACP including the venues within the precinct (excluding events) and from other plant and equipment. The objective of the INP is to protect sensitive receivers, such as residences, from noise generated by commercial, industrial or trade premises. In this context, 'industrial' refers to the source of the noise (e.g. plant) rather than the nature of the premises.

The INP provides guidance on acceptable noise levels from the introduction of new industrial noise sources to an area. The assessment procedure for industrial noise sources has two components:

- Controlling intrusive noise impacts in the short term for residences; and
- Protecting noise level amenity for particular land uses such as residences, recreation areas and commercial offices etc.

Both of these components result in noise criteria that should not be exceeded in order to avoid any adverse noise impacts on the affected areas.

In accordance with the INP the NVIA identifies Project Specific Noise Emission Criteria for affected receivers in the vicinity of the WBACP. These criteria are reproduced in Table 19 below.

Table 19: Summary of Project Specific Noise Criteria

Location (refer Figure 25 for location references)	Time Period	RBL dB(A)	Project Specific Noise Goals dB(A)
NCA 1 – R1	Day (7:00 – 18:00)	48	53
	Evening (18:00 – 22:00)	46	50
	Early night (22:00 – 24:00)	46	47

Location (refer Figure 25 for location references)	Time Period	RBL dB(A)	Project Specific Noise Goals dB(A)
	Night (24:00 – 7:00)	42	45
NCA 2 – R3, R4, R5, R6	Day (7:00 – 18:00)	53	58
	Evening (18:00 – 22:00)	52	50
	Early night (22:00 – 24:00)	49	47
	Night (24:00 – 7:00)	47	45
NCA 3 – R2, R7	Day (7:00 – 18:00)	49	54
	Evening (18:00 – 22:00)	47	50
	Early night (22:00 – 24:00)	44	45
	Night (24:00 – 7:00)	42	47
NCA 4 – R8, R9, R10	Day (7:00 – 18:00)	48	53
	Evening (18:00 – 22:00)	44	45
	Early night (22:00 – 24:00)	41	42
	Night (24:00 – 7:00)	40	40
Other sensitive receivers			
C1 – C6	Use hours		65
P1	Use hours		50

As the above criteria relate to the total noise from the development as a whole, an allowance has been made for the additive effects of noise (including the proposed work for STC). A combined noise model has been constructed which includes noise from the STC plant and this will be used to assign appropriate levels of noise control to the individual items plant. In this way, the cumulative noise impacts have been accounted for.

In order to predict noise impacts generated by patrons and staff occupying the venues during general operation of the WBACP, three scenarios have been modelled:

1. Normal operating scenario - This scenario is expected to represent the majority of the calendar year
2. Peak operating scenario - This scenario is expected to represent a realistic maximum population of the WBACP
3. Logistics activity / patrons leaving scenario – This scenario represents patrons leaving the venues after an event and some internal back of house logistical activities taking place.

Construction noise has also been assessed and appropriate mitigation measures identified in accordance with the *Interim Construction Noise Guideline* (ICNG). The ICNG deals with the assessment of noise from construction activities and advises on best practice approaches to minimise noise impacts.

The WBACP seeks approval for precinct wide events in the form of the Sydney Writers Festival and Biennale. Accordingly the noise associated with these events has also been assessed and appropriate noise limits for occasional coordinated precinct wide events identified. These are summarised in Table 20 below and are based on noise limits outlined in the 2017 Consent Conditions for the Sydney Writers Festival (Application no: D/2017/178). The noise limits cover noise from setup and take down as well as noise generated by the event itself.

Table 20: Noise criteria for Events

Activity	Early Morning (0700h to 1000h)	Daytime & Evening (1000 to 2200h)	Night (2200h to 2400h)
Any noise sensitive residential or commercial receiver external to the operational area of the event			
Setup / takedown	$L_{Aeq,\ 15m}$<50	$L_{Aeq,\ 15m}$<55	$L_{Aeq,\ 15m}$<50
Event including sound check	None allowed	$L_{Aeq,\ 15m}$<55 $L_{Ceq,\ 15m}$<70	$L_{Aeq,\ 15m}$<50 $L_{Ceq,\ 15m}$<65

In order to predict noise impacts generated by occasional events at the WBACP, an event scenario has been modelled to represent the Sydney Writer's Festival and the Biennale.

As activities taking place during these type of events are largely spoken word, no significant noise breakout from the venues is expected. The dominant noise source during these events is anticipated to be noise from patrons talking on the precinct aprons.

Operational traffic noise impacts have also been assessed against the NSW Road Noise Policy (RNP) which sets out the assessment criteria for particular types of project, road category and land use.

7.7.3 Noise and vibration impacts

Operational noise

The results of noise modelling for the normal and peak scenarios are presented in NVIA. Noise impacts have been predicted under neutral weather conditions (no wind) and worst case weather conditions (3 m/s source to receiver winds). The modelling worst case scenario assumes all mechanical services are operational including those servicing STC.

The results of the modelling show that during the normal scenario, representative of the majority of WBACP operations, no exceedances are predicted at any receivers during any period of the day. During the peak scenario which is representative of the realistic highest population of the precinct, a minimal exceedance of 1 dB is predicted at night during worst case weather conditions at R1 - Pier One Hotel suites and R7 – Pier 6/7 apartments. This result is not considered to result in significant community disturbance, and a 1 dB difference in noise levels is considered barely perceptible to the average person.

During late night hours when no venues are operational, with only patrons leaving and some internal logistics activities taking place, no exceedances are predicted.

In order to minimise the risk of sleep disturbance to surrounding residences while patrons are leaving the WBACP, patrons will be directed to leave via the aprons on the inside of the precinct, i.e. west of Pier 2/3 and the east of Pier 4/5. This will maximise the shielding of the residences to the west and east of the precinct by the precinct buildings.

Precinct staff will also be directing patrons to keep noise to a minimum when leaving in order to reduce shouting or unnecessary loud conversations between leaving the venues and leaving the precinct.

The three modelled scenarios represent the realistic typical and worst case scenarios to occur at the WBACP during the day, evening, early and late night periods, and are not expected to result in any significant noise issues. It should be noted, that these scenarios conservatively assume all mechanical plant is operational, and noise levels in venues are as indicated in the NVIA, which are considered high for the type of events to be expected.

Operational vibration

The results of the operational vibration assessment included in the NVIA indicate that the intended use of the precinct is not expected to result in any significant vibration. All plant will need to be carefully vibration isolated to control structure-borne vibration and regenerated noise. The overall sensitivity of the development itself to noise and vibration (because of the arts uses) will also mean that there will be tight control of any future vibration generating activities.

Event noise

Predictions have been made for noise from the Sydney Writer's Festival and Biennale. An 'event' scenario has been modelled to represent these events.

The limited space available for external activities means that any large event is likely to require most of the participants to be indoors and the majority of internal performance activities are anticipated to be spoken word. It is proposed that the management of the precinct implement an Operational Noise Management Plan for events at the WBACP.

Operational Traffic Noise

The results of the operational traffic noise assessment show that the noise impacts that are likely as a result of the generated traffic are predicted to increase road traffic noise levels by less than 1 dB under the worst case scenario of 150 vehicles leaving after 10pm. This represents a minimal impact and is considered to be barely perceptible to the average person. No mitigation of road traffic noise is therefore considered necessary.

Construction noise and vibration

The construction noise and vibration assessment has been prepared having regard to a list of indicative construction activities and associated items of equipment that has been developed along with likely staging and simultaneous operation throughout each stage of construction, as part of the Walsh Bay Arts and Cultural Precinct – Environmental, Construction and Site Management Plan (refer Appendix 26).

A large portion of the scope of works is internal demolition and fitout works which will be attenuated by the existing building envelopes which significantly mitigates the negative noise impacts on the public and surrounding areas. Further storage of materials will be within the existing buildings rather than externally. This will reduce noise from material handling. Five construction phases have been modelled to capture the significant proposed demolition and construction works: demolition and removal works; Lift, stair, balcony installation, facade modification, roof works; Structural works; Utilities & lifts; and Internal works.

The results of the assessment indicated in during the construction phase, some exceedances of up to 11 dB are predicted at both R1 – Pier One Hotel suites and R7 - Pier 6/7 apartments. The highest noise impacts are predicted during demolition stage, where the use of equipment such as chainsaws, concrete saws and jackhammers are likely to result in adverse noise affects to directly exposed receivers and exceedances of NMLs. These items are typically used over short durations and would likely only occur sporadically.

Receivers located north of the harbour and east of the precinct beyond Hickson Road are not predicted to experience noise levels above NMLs due to proximity to the site and shielding from the precinct buildings themselves.

No residences are predicted to be 'highly affected', i.e. experience noise levels of 75 dB(A) or above.

Noise impacts at commercial premises directly exposed to the construction works, namely C4 - View By Sydney, Simmer on the Bay are predicted to exceed NMLs by 2 dB, representing a 'minor' exceedance.

Construction Traffic

Trucks will be used to remove demolition and construction waste from the site, with the ramp at Wharf 4/5 proposed for access. Construction works are anticipated to generate 80 trucks per day during four months out of the 24 month construction program, and 30 trucks a day in the remaining 20 months. In light of the existing traffic numbers and the small number of construction generated vehicles, the additional construction traffic created by construction works is considered an insignificant additional contribution to the ambient noise environment.

Construction vibration

No significant issues are expected with construction vibration affecting residential or commercial properties or the users of the existing venues at site.

7.7.4 Cumulative impact

The NVIA includes an assessment of the cumulative impact of the proposal in terms of construction, operation and during the proposed events.

The proposed STC construction works have been considered in the assessment in order to ensure that cumulative impacts are addressed although it is noted that a major part of the STC work is the installation of noise sound insulating provisions for the envelope of the building. This will help reduce any noise breakout from the internal construction works such that there would be a minimal additional external noise from the STC works. No other developments that would result in cumulative impacts have been identified.

In relation to construction and operational impacts the assessment concludes that no significant exceedances of relevant criteria will result from the proposed works as outlined above.

The NVIA notes that other external events (other than the Sydney Writers Festival and the Biennale) have not been modelled in the assessment however that it is unlikely that external and internal events would occur concurrently as they would interfere with each other and would therefore have to be programmed such that there is no mutual disruption. No cumulative noise impact on the community is therefore likely to result.

7.6.4 Mitigation measures

Construction

- Appoint a construction staff member responsible for construction noise and vibration management on site.
- Ensure construction staff are trained in ways to minimise noise during work, e.g. minimise dropping items, avoiding the use of stereos outdoors, avoiding shouting, slamming doors
- Turn off construction equipment when not in use. Maintain equipment and use quiet equipment where possible.
- Ensure construction only occurs between 7am to 6pm on weekdays and 8am to 1pm on Saturdays. No work on Sundays or public holidays.

- Undertake internal works in the proposed Bell Studio early in the construction schedule to minimise disturbance to adjacent tenants.
- Undertake construction noise monitoring to alert the Contractor and Precinct Management of potential exceedances of Noise Management Levels.
- Maintain open communication channels with nearby receivers, including commercial tenants and residents.
- Maintain a complaints log including timing, issues, immediate and on-going actions.
- Endeavour to schedule construction works around noise sensitive events occurring within or near the Precinct.
- Maintain minimum working distances for vibration intensive plant. Where this is not possible, vibration monitoring with real-time alerts should be considered.

Detailed design

- Mechanical services acoustic treatment will be finalised at the detailed design stage. Standard noise control measures may be required, including quiet plant selection, attenuators, acoustic louvres, vibration isolators, screening and absorptive lining.

Operation

- Internal noise sources within non-acoustically treated venues shall be limited to patrons talking and foreground music, representative of cocktail party functions and performances. Amplified music at ‘ concert’ levels (i.e. ~105 dB(A)) is not permitted.
- Loading dock activities and waste and recycling removal should be scheduled outside of night-time hours, i.e. before 10:00pm or after 7:00am.
- Management of the precinct shall undertake implement an Operational Noise Management Plan for events at the WBACP.
- In order to minimise the risk of sleep disturbance to surrounding residences while patrons are leaving the WBACP, patrons will be directed to leave via the aprons on the inside of the precinct, i.e. west of Pier 2/3 and the east of Pier 4/5.
- Precinct staff will direct patrons to keep noise to a minimum when leaving to reduce shouting or unnecessary loud conversations between leaving the venues and leaving the precinct.

7.8 Amenity

7.8.1 Privacy

It is considered that the impact on the privacy of adjoining occupants will be minimal. The adjoining occupants beyond the WBACP itself comprise a range of residential, commercial, retail and tourist uses.

For the adjoining RMS tenancies in the Pier 2/3 Shore Sheds, there will be no change to the existing overlooking which is possible only from the public domain.

There will be no change to the privacy of occupants to the south of Hickson Road as no changes are proposed to the building facades facing them.

In relation to Pier 1, east of Pier 2/3, this hotel is located some 70m from Pier 2/3 over a significant water body. Whilst additional glazed openings replacing existing cargo doors will increase overlooking, the relative distance will mean any impact will be minimal.

In relation to Pier 6/7, west of Pier 4/5, there will be no change to the overlooking of these occupants as there are no significant changes proposed to the building facades facing them.

7.8.2 Solar access

As there is no additional building bulk proposed beyond the extent of the existing envelope, other than lifts, stairs and gantry balconies, there will be no increase in overshadowing of public or private space beyond the boundaries to the WBACP.

7.8.3 Acoustic privacy

Acoustic impacts have been addressed in Section 7.7 and the Noise and Vibration Impact Assessment at Appendix 19. Appropriate mitigation measures are proposed to minimise acoustic impacts.

7.8.4 Access to views

As discussed in the VIA at Appendix 18, there will be minimal impact on existing views as a result of the proposal.

7.8.5 Design construction and public safety

The project has been designed in accordance with Infrastructure NSW's Health Safety and Environment (HSE) Management Project Delivery Framework to manage HSE requirements when delivering projects. As a part of this framework all consultants are required to provide a safe design report to confirm they have complied with the necessary standards and in principle considered safety in their role and production of design documentation for the project. The HSE Management Project Delivery Framework also requires a project-specific safe design workshop to be conducted during the design phase. One of the requirements of the workshop is that responsibility and method for ensuring that the design outcomes/risk controls outcomes and any other actions/requirements identified are documented, tracked and completed before design finalisation.

The Operational Plan of Management (Appendix 10) includes measures to ensure the safety of all visitors given the waterfront location of the WBACP. The following water edge protection and monitoring controls will be established including during the operational phase:

- CCTV will be provided to the perimeter of buildings and in the precinct to monitor and space and deter antisocial behaviour.
- Provision of Emergency Management Plan in case of an incident.
- Use of balustrades and fencing to entry and egress areas immediately outside of alcohol service locations and within 5 meters of the waterside edge, or the use of approved fixed planter boxes to areas within 10 meters of the waterside edge.

CPTED measures are addressed in Section 7.13.

7.8.6 Servicing

Loading and servicing arrangements are addressed in Section 7.6.

Waste management is addressed in Section 7.16.

Mechanical plant is likely to include air handling units, chillers, condensers and fans although the final selection of plant will be determined during the detailed design. The assessment of noise impacts associated with the mechanical plant is included in the Noise and Vibration Impact Assessment at Appendix 19 and discussed in Section 7.7. The visual impact where plant is proposed to be located on the roof is assessed in the Visual Impact Assessment at Appendix 18.

7.8.7 Mitigation measures

- The detailed design of the project will be undertaken in accordance with Infrastructure NSW's Health Safety and Environment (HSE) Management Project Delivery Framework
- The operation of the precinct will be undertaken in accordance with the requirements of the Operational Plan of Management.

7.9 Maritime impacts

A Maritime Impacts Assessment Report has been prepared for the project by Arup (September 2017), a copy of which is provided at Appendix 22. The report addresses:

- Extreme water level and wave impacts on public safety of public domain areas (including consideration of future sea level rise); and
- Impacts on Sydney Harbour users including detailing any berthing arrangements.

In addition, a Metocean Conditions Report has been prepared by Arup which documents the methods used to develop site specific metocean design criteria, including water levels, wave heights and current flows. The Metocean Conditions Report is appended to the Maritime Impacts Assessment Report.

The key findings and recommendations of the assessment are summarised below.

7.9.1 Existing conditions

The site is located on the southern shore of Sydney Harbour, approximately 300m to the west of the Sydney Harbour Bridge. The two existing wharves extend approximately 200m into the harbour from the shore. There are a large number of recreation, commercial and public transport vessels operating on the harbour, a significant proportion of which will pass by the WBACP site under normal operations.

Details of existing wave conditions and water levels are provided in the Metocean Conditions Report.

7.9.2 Water level impacts including sea level rise

The deck level of the wharf deck area is above the present day and predicted future tidal and extreme 100yr ARI water levels. Inundation of the deck is therefore unlikely over the design life of the project.

For the future scenario allowing for sea level rise, lower sections of the pier/wharf may experience some periodic wave overtopping onto the deck during an extreme 100yr ARI water level event. However, during this rare event wave overtopping is expected to be relatively minor in magnitude and there is adequate provision for the overtopped water to drain away into the harbour to avoid significant landside ponding/buildup.

7.9.3 Wave impacts

AS 4997-2005 Guidelines for the design of maritime structures recommends normal maritime structures to be designed for the 500 year ARI wind generated wave climate, which was determined to have a significant wave height (Hs) of 0.6m and 2.96s peak wave period (Tp). As the wharves are existing structures and these estimated design wave characteristics are sufficiently small no impact is expected.

As discussed above, for the future scenario allowing for sea level rise, lower sections of the pier/wharf may experience some periodic wave overtopping onto the deck during an extreme 100yr ARI water level event. During this rare event public access to the lower deck levels may be restricted. However, a more appropriate assessment of user safety is to consider wave overtopping for a more frequent 5yr ARI wave event at MHWS and in this case no overtopping is expected.

7.9.4 Impacts on harbour users

Construction

Given the constrained landside access for construction there is potential that major construction works associated with the project will be undertaken from the water using marine plant and an offsite prefabrication. This form of construction has the beneficial effect of reducing construction truck traffic.

The marine plant would likely consist of a number of construction barges to transport prefabricated components from a waterside prefabrication yard located elsewhere in Sydney Harbour and barge mounted cranes and contractor's amenities. There is sufficient space between Pier 2/3 and Wharf 4/5 to locate the construction plant without projecting out past the existing wharves into the main harbour area. A vessel exclusion zone would need to be established around the site for the duration of the maritime construction works. This is not expected to impact on existing harbour users and access could be maintained to existing berthing facilities on adjacent wharves however it is likely that berthing would be restricted in the area between Pier 2/3 and Wharf 4/5, as shown in Figure 27. The Harbour Master would need to be consulted on any temporary vessel exclusion zones enacted in Sydney Harbour.

Transport barges operating between the WBACP site and an offsite prefabrication yard will need to operate in Sydney Harbour. This is unlikely to generate a large number of barge movements given the scale of the development and is a typical method of transporting materials for maritime construction in the harbour. Construction traffic would need to follow the Harbour Master's Directions which provides standard protocols that must be adopted by all commercial vessels operating in Sydney Harbour.

Figure 27: Assumed construction works vessel exclusion zone

Operation

The proposed design does not alter the footprint of the existing Pier 2/3 or Wharf 4/5 structures. RMS have retained the right to berth super yacht vessels alongside Pier 2/3 and Wharf 4/5 within the area bound by the two wharves, however there is no ferry or commercial vessel berthing provision at these wharves in the site area.

As there is no change to the existing berthing arrangements at the site the development will generate negligible vessel traffic. This combined with the planned footprint of the existing wharves remaining the same as the existing configuration means there is no change to the navigable area of Sydney Harbour resulting from the development. Therefore the impact to harbour users during the operational phase of the WBACP development is considered negligible.

Accidental Vessel Impact

Considering construction and operational phases of the project, the probability of large vessel impact is very low and it would likely be prohibitive to design for the impact loads. The probability of medium vessel impact is increased compared to large vessels but still considered very improbable. The damage resulting from an impact is unlikely to cause failure of the wharf structure, which has significant structural redundancy, or damage to the buildings which are setback from the edge of the wharf. The risk to wharf occupants is considered very low. The highest probability of impact arises from small vessels. However an impact from this vessel category is unlikely to cause anything other than minor localised damage and presents very low risk to wharf occupants.

7.9.5 Mitigation measures

- Consideration will be given to further assess the structural redundancy of the existing wharf structures against medium size vessel impact to confirm the assumptions made in the qualitative assessment

- Should any water-based construction be proposed to implement the works, the Harbour Master will be contacted to agree construction stage vessel exclusion zones.

7.10 Contamination

JBS&G was engaged by Infrastructure NSW to prepare a Phase 2 Environmental Site Assessment (ESA) of the area of the proposed WBACP. A copy of the ESA is provided at Appendix 23.

The objectives of the ESA are to characterise potential contamination at the site through:

- documenting the history of the site to identify areas of potential environmental concern (AECs) and contaminants of potential concern (COPC) associated with the current and former land uses;
- conducting a detailed inspection of current site conditions and surrounding land uses to identify potential on and off-site sources of site contamination;
- completing of a program of soil sampling to assess whether further works, or management plans, are required to address potential site impacts; and
- preparing a report on the results of the investigation in accordance with the requirements of OEH (2011) and DEC (2006) which draws conclusions regarding the likely suitability of the site for the proposed land use, or makes recommendations to enable such conclusions to be drawn.

The investigation was conducted in general accordance with relevant guidelines made or endorsed by the NSW EPA.

7.10.1 Summary of ESA findings

Historical information indicates that the existing Pier 2/3, Wharf 4/5 and shore shed buildings were constructed circa 1910, however the alignment of the existing built structures and seawall are consistent with earlier versions of the Walsh Bay wharves in operation as early as 1890.

At the time of the site inspection and when the sampling was completed the entire site surface comprised a concrete ground slab. The existing Pier 2/3 and Wharf 4/5 buildings were observed to be fully suspended structures founded on timber piles driven into the seabed. Based on observations made during the inspection it would appear that more than 50% of the shore shed buildings are similarly founded on timber piles driven in the seabed. Less than 50% of the existing shore shed buildings are founded on a seawall and possible backfill material.

Whilst the current use of the site is considered to have negligible potential for contamination of land and sea, the site was previously used as part of the Walsh Bay Wharves shipping facility. This former use, in combination with the location of the site in the central inner city suggested that heavy metals, organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH) and asbestos were contaminants of potential concern in soil and sediments underlying the site. The proximity of the WBACP to the former Millers Point Gasworks has also led to the inclusion of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) as potential contaminants of concern for the site.

The installation of six boreholes was attempted across the site to assess the potential for these contaminants to be present. One or more concrete slabs at the ground surface at each location, with sandstone bedrock was encountered at all completed locations within 100mm of the slab bases. No evidence of aesthetic issues such as significant anthropogenic inclusions, odours or staining were observed during sampling.

Representative soil samples from three of the installed boreholes were successfully collected and analysed for contaminants of potential concern (COPCs) identified at the site. Reported concentrations of the COPCs were below the adopted NEPC (2013) human health criteria for standard commercial land use. Based on the analytical results for the COPCs, no unacceptable risk to future on-site human or ecological receptors has been identified within site soils sampled during this investigation. Results of the current investigation did not identify any impacts that indicate widespread or gross contamination of the land. This was also confirmed by the results of analytical testing on one sub-slab vapour sample collected in proximity of bore JBBH06.

7.10.3 Building Assessments

Hazardous Materials Assessment reports for Pier 2/3 and Wharf 4/5 have been prepared by Presna and are provided at Appendices 24 and 25. The reports identify and assess the risks associated with the suspected hazardous materials at the site. The reports recommend appropriate mitigation and management measures which will be adhered to during the project's development.

7.10.4 Conclusions

Based on the findings set out in the report JBS&G concluded that the site is suitable for the continued commercial land use as proposed by the State Significant Development Application (SSDA) for the WBACP. Standard unexpected find protocols should be implemented during any future development.

Additionally, available information suggests that potential contaminants in sediment and seawater at the site do not appear to represent a potential human health risk for continued commercial use of the site and the associated arts/cultural use.

The results of the ESA conclude that a RAP is not required for the uses proposed under the WBACP SSDA. Rather, collectively the results of the ESA indicate that the site is suitable for the uses proposed under the WBACP SSDA without the need for further investigation or remediation.

7.10.5 Mitigation measures

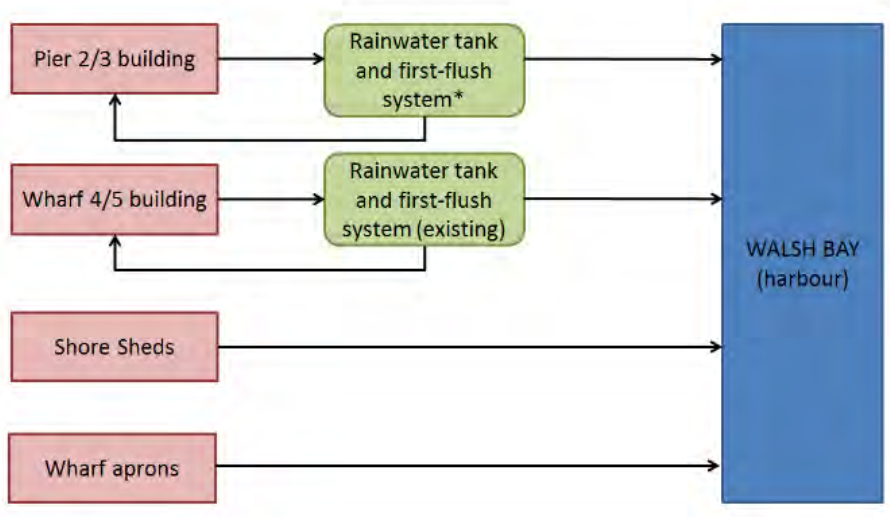
- The proposed works are to be undertaken in accordance with the Preliminary 'Environmental, Construction and Site Management Plan' prepared by Cadence Australia Pty Ltd dated September 2017
- Standard unexpected finds protocols are to be implemented during the proposed works
- Hazardous materials on site are to be managed in accordance with the recommendations of the 'Hazardous Materials Assessment, Wharf 2/3' (Presna Pty Ltd, October 2011) and 'Hazardous Materials Re-Assessment, Wharf 4/5' (Prensa Pty Limited, September 2012.

7.11 Drainage and flooding

An Integrated Water Management Plan (IWMP) has been prepared for the site by Jacobs (September 2017), a copy of which is provided at Appendix 13. The IWMP provides an overview of the proposed drainage system for the project as well as an assessment of flooding and groundwater impacts. A summary of the key findings of the IWMP is provided below.

7.11.1 Drainage

The IWMP provides a schematic of the stormwater drainage concept for the WBACP as shown in Figure 28 below.



*Currently under consideration

Figure 28: Proposed stormwater drainage concept for the WBACP

Management measures have been identified to minimise drainage and flooding impacts to the site and surrounding environment. To minimise impacts to water quality within Sydney Harbour an integrated water cycle management philosophy has been adopted for the site, acknowledging that the nature of the Walsh Bay Wharves

limits opportunities to introduce water sensitive urban design initiatives. However, rainwater tanks will continue to be used at Wharf 4/5 to collect runoff for reuse and a similar system is being considered for Pier 2/3.

Given the proximity of the site to the harbour, it is not proposed to provide On Site Detention (OSD) within the development, as OSD is not beneficial in reducing peak overland flows from the wider catchment when located at the downstream end of the catchment. In addition, given that the site is effectively 100% impermeable in both the pre and post-development scenario, the peak flow from the development is anticipated to be unchanged from existing.

There is currently a rainwater harvesting tank collecting roof drainage from Wharf 4/5. Overflow from the rainwater tank is discharged to the harbour. This arrangement will be retained in the proposed re-development. Rainwater harvesting and reuse for toilet flushing, irrigation and wash down is currently being considered for Pier 2/3. Intercepting and treating roof water runoff for reuse as described will aid in improving the water quality of the development's discharge to the harbour.

The wharf site is currently impervious and will remain impervious, and no change to groundwater conditions is anticipated (refer discussion in Section 7.11.3 below).

7.11.2 Flooding

Existing conditions

While the WBACP site itself is not subject to mainstream flooding, sections of Hickson Road adjacent to the Shore Sheds are identified as problem areas in relation to flood inundation. The IWMP notes that a Sydney City Area Catchment Flood Study was prepared by BMT WBM in 2014 which states that:

> *Whilst there is a relatively small and localised catchment contributing flow to Hickson Road in the Walsh Bay area, modelling shows that flooding occurs in the 5 year ARI design event. Furthermore, responses received during the community consultation exercise indicated that flooding has occurred here in the past. At this location the roadway is relatively flat and does not promote efficient drainage. Flooding is relatively shallow with depths less than 0.20m, but these depths may still impede pedestrian and vehicle access and possibly inundate car parks.*

From the design flood mapping provided in the BMT WBM report, the following flood conditions were modelled in the sections of Hickson Road adjacent to the Shore Sheds for a 100 year ARI event:

- Peak Flood Depths – up to 0.1 metres (indicating that overland flows will be contained within the road reserve)
- Peak Flood Levels – up to 3.47 mAHD (noting that the building ground floors and wharf apron elevations are approximately 3.44 and 3.4 mAHD, respectively)
- Peak Flood Velocities – up to 1.0 m/s.

Potential flooding impacts

BMT WBM (2014) identifies the WBACP as an indirectly flood affected area in the 2 year ARI event and as a Low Flow Island in the 5% AEP event. A Low Flow Island is defined in the *Floodplain Risk Management Guideline - Flood Emergency Response Planning Classification of Communities* (DECC, 2007) as follows:

> *The flood island is lower than the limit of flooding (i.e. below the probable maximum flood) or does not have enough land above the limit of flooding to cope with the number of people in the area. During a flood event the area is isolated by floodwaters and property will be inundated. If floodwater continues to rise after it is isolated, the island will eventually be completely covered. People left stranded on the island may drown and property will be inundated.*

The guideline identifies that Rescue/Medivac and evacuation will be required for Low Flood Island. However, considering that the WBACP has multiple floors and Hickson Road is subject to low hydraulic hazard up to and including the Probable Maximum Flood event, Jacobs considers it appropriate to designate the WBACP a High Trapped Perimeter (HTP). A HTP Area is defined in DECC (2007) as:

> *The inhabited or potentially inhabited area includes enough land to cope with the number of people in the area that is higher than the limit of flooding (i.e. above the probable maximum flood). During a flood event the area is isolated by floodwater and property may be inundated. However, there is an opportunity for people to retreat to higher ground above the probable maximum flood within the area and therefore the direct risk to life is limited. The area will require resupply by boat or air if not evacuated before the road is cut. If it will not be possible to provide adequate support during the period of isolation, evacuation will have to take place before isolation occurs.*

In terms of existing flood behaviour, no construction or operational activities are proposed along Hickson Road as part of the WBACP project, therefore the project will have negligible impacts. Construction materials are not to be stored along Hickson Road.

The WBACP site is currently impervious and will remain impervious. Pier 2/3 will be subject to flows from rainfall falling directly on the site only, and therefore entrances will not be subject to flooding. There are no proposed changes to entrance thresholds at Wharf 4/5 and the Shore Sheds.

7.11.3 Groundwater

Existing environment

Walsh Bay is located on bedrock consisting of Hawkesbury Sandstone. Overlying the sandstone locally, the marine sediments in Walsh Bay are layers of surficial silts and clayey silts over older marine sediments consisting of interbedded clays, sands and clayey sands. Numerous investigations around Sydney Harbour indicate that the groundwater of the Hawkesbury Sandstone is located close to ground surface and hence discharges to the estuary. However, in the immediate offshore vicinity of the WBACP, sediments in the estuary are dominated by muds which suggests that this area is not a prominent area of groundwater discharge. This is supported by a number of local investigations that report a strong correlation between groundwater levels and tidal influences. Further, the shallow groundwater in the area are all highly saline, generally up to seawater composition, indicating the influence of seawater intrusion in the immediate area.

A large movement to reclaim land at multiple foreshore sites along the banks of Sydney Harbour, including Walsh Bay, occurred between 1922-2002. The materials used for reclamation mainly consisted of dredging spoils from the estuary, demolition rubble, construction materials and domestic and industrial wastes but varied with location and few records exist (Birch, 2006). With such materials characterising soil profiles, contaminants resting dormant may be activated and mobilised by tidal pumping or rainwater percolation.

Above the Hawkesbury Sandstone, the fill provides an enhanced hydraulic conductivity (greater than 50 m/day compared to less than 0.03 m/day for the Hawkesbury Sandstone) through which contaminants in the fill materials may be preferentially transported around the area. The shallow, low gradient groundwater system is strongly dependent on tidal forcing and flow can change direction depending on tidal heights. Therefore, while dominate flow would generally be towards the harbour, during high tides flow may reverse towards the south.

Potential impacts

The IWMP assessment indicates that:

- Groundwater impacts are expected to be minimal provided the appropriate standard controls are in place to contain spills and leakages during construction.
- The project does not include the extraction of groundwater. The nearest groundwater users (greater than three kilometres) will not be impacted. No Groundwater Dependent Ecosystems occur within or near the Project Site.

Due to the unlikelihood of impacts on groundwater, sampling of groundwater was considered unnecessary. It was also considered unnecessary for a Groundwater Environmental Management Plan to be prepared due to the low risk nature of the proposed activities to be undertaken.

7.11.5 Mitigation measures

No specific mitigation measures are required in relation to drainage, flooding or groundwater impacts associated with the development.

7.12 Sediment, erosion and dust management

Sediment, erosion and dust management measures are detailed in the Environmental, Construction and Site Management Plan at Appendix 26.

The existing stormwater provision to collect and divert stormwater to the council mains will be maintained at all times during construction. The existing surface pits and grated drains will be protected from any silt or construction debris entering the system. The protective measures may include filter fabric, hay bales and temporary diversion gutters and drains.

During placement of concrete the areas adjacent to the pumping equipment will be assessed for risk of concreting material entering the harbour. The risk mitigating measures may include local silt fences along the

edge of the pier, temporary hay bales to catch any cement slurry runoff, and temporary plastic sheeting to catch any concrete spills.

The Contractor will be expected to carry out regular inspections of all erosion and sediment controls. The contractor will have within its standard procedures, the requirement of spill kits for hazardous materials also including environmental audits that review the usage and storage of hazardous materials onsite. Concrete waste and rinse water will not be disposed of on-site and will be prevented from entering the harbour.

As the project consists of redevelopment of the existing premises, with trucks being confined within the construction zones and hardstand areas a truck wash facility will not be required onsite. Construction zones will be kept clean at all times to ensure tyres of trucks and vehicles exit in the same condition that they have entered.

During the construction of the work silt curtains may be required within the construction area if any sediment generation is expected within the immediate construction areas. Daily monitoring by the Principal Contractor may be required, although it is not expected to be required with the proposed works.

If works are expected to generate sediment, silt curtains will be installed prior to proposed works with at least a 5-15 m buffer to allow for the influence of tides, wind, waves and currents. Vessel movements in and out of the silt curtain will be minimised during the course of work; and suspended sediments will be allowed to settle prior to removal of the curtain.

Monitoring of water quality measures (primarily turbidity) may be undertaken to validate the effectiveness of the sediment control measures. Monitoring may include:

- Visual inspection of water turbidity and sediment plumes;
- Monitoring of metal contaminants that had been recorded in the sediments.

A suitable approach to monitoring water quality would include:

- Sampling of turbidity immediately inside and outside of the silt curtain; and
- Baseline monitoring of water quality in the immediate vicinity of Walsh Bay to provide data for comparison with that measured during construction.

It is considered that implementation of the above controls will be sufficient to reduce residual impacts to the marine environment due to the Project to acceptable levels.

Dust control and management will be the responsibility of the Principal Contractor. The contractor will be required to implement a management plans that addresses the generation of dust.

Dust control measures may include wetting down areas prior to and during demolition of masonry elements including concrete, brick and block walls vacuuming of dust and debris following completion of demolition and upon completion of construction activity.

Demolition and construction works will be undertaken in accordance with the recommendations of the preliminary ECSMP as amended in more detailed environmental, site and construction management plans following appointment of the construction contractor.

7.12.1 Mitigation measures

Sediment, erosion and dust management measures will be implemented in accordance with the recommendations of the preliminary ECSMP as amended in more detailed environmental, site and construction management plans following appointment of the construction contractor.

7.13 CPTED

An assessment of the project against Crime Prevention through Environmental Design (CPTED) principles has been prepared by Arup and is provided at Appendix 27.

The assessment indicates that overall the proposed design for the WBACP provides good natural surveillance, natural access control, and territoriality. The design of space is generally open and visible from several angles, and public spaces are readily accessible, clearly defined, and will activate the space at different times of day.

There are however several opportunities for improving CPTED security measures such as natural surveillance, natural access control, and territoriality within the WBACP designs. These opportunities include:

- Ensuring adequate lighting is provided throughout the precinct, particularly at the ends of Wharf 4/5 and Pier 2/3, the precinct and building entry/exit points. Adequate lighting attracts legitimate people to the area at night, facilitates the precinct's use at night, and deters illegitimate users and crime;
- Providing way finding signage throughout the precinct to assist natural access control, and reinforce boundaries;
- Providing security signage throughout the precinct, particularly at precinct and building entry/exit points, to notify people of the security measures in place, and to provide a deterrence;
- Maintaining precinct image and repair vandalism or remove graffiti as quickly as possible;
- Activating the precinct as much as possible, to attract legitimate users to the area, and to deter illegitimate users and crime;
- Using as much glazing as possible to assist natural and electronic surveillance. Glazing should be particularly used at ground level, and at function, and hospitality spaces;
- Minimising areas of possible concealment of people, actions, or packages, particularly at the ends of Wharf 4/5 and Pier 2/3, staircases, lifts and the northern most and southern most boardwalks.

By implementing these recommendations, CPTED principles will be further reinforced in the current design, and the opportunity for illegitimate use of the space and crime will be reduced. The above recommendations are therefore included below as mitigation measures. Subject to the implementation of these measures it is considered that the proposal will provide a high degree of safety and security to visitors to the precinct and will be consistent with CPTED principles.

7.13.1 Mitigation measures

The proposed works will be undertaken in accordance with the following recommendations in relation to safety and security:

- Adequate lighting is to be provided throughout the precinct, particularly at the ends of Wharf 4/5 and Pier 2/3, the precinct and building entry/exit points.
- Wayfinding signage will be provided throughout the precinct to assist natural access control, and reinforce boundaries
- Security signage will be provided throughout the precinct, particularly at precinct and building entry/exit points, to notify people of the security measures in place, and to provide a deterrence
- The precinct image will be maintained at all times with vandalism repaired and graffiti to be removed as quickly as possible
- The precinct will be activated as much as possible, to attract legitimate users to the area, and to deter illegitimate users and crime
- As much glazing as possible, within heritage conservation limits, will be used to assist natural and electronic surveillance particularly at ground level, and in function, and hospitality spaces
- Areas of possible concealment of people, actions, or packages will be minimised particularly at the ends of Wharf 4/5 and Pier 2/3, staircases, lifts and the northern most and southern most boardwalks, and,
- CCTV will be provided to the perimeter of buildings and in the precinct to monitor and space and deter opportunistic crime.

7.14 Thermal impacts of seawater cooling system

It is proposed that the new facilities at WBACP will feature an air conditioning system that utilises a closed loop sea water cooling system to reject heat. The closed loop sea water cooling system will transfer heat to adjacent sea-water without discharging any effluent. Jacobs was commissioned to undertake an assessment of the potential thermal impacts of the closed loop sea water cooling system on the receiving waters of Walsh Bay and Sydney Harbour. The Harbour Heat Rejection Impact Assessment Report (Jacobs, September 2017) documents the outcomes of this assessment and is provided at Appendix 28.

A summary of the Harbour Heat Rejection Impact Assessment Report is provided below.

7.14.1 Methodology

The heat rejection impact assessment involved a number of technical analyses and modelling investigations. Key task components of the scope included:

- Development of a numerical model that can simulate the key dispersion processes within Walsh Bay and Sydney Harbour;
- Modelling of the likely maximum thermal impacts of the proposed closed loop sea water cooling system operations; and
- Assessment of the potential thermals impacts of the sea water cooling system on the receiving water environment.

7.14.2 Impact assessment

Modelling was undertaken to investigate the likely maximum thermal impact of the installation of a Heat Rejection System at Pier 2/3 in Walsh Bay. The likely maximum thermal impacts were determined by simulating the thermal plume behaviour under a range of model scenarios. The model scenarios adopted for assessment are considered to be conservative; it is more likely that less extreme conditions will prevail and as such thermal impacts are likely to be less than that shown in the model results in the Jacobs report.

The model results demonstrate that the footprint of the thermal plume will be small, with a temperature impact of greater than 0.1°C confined to an area of approximately 50m from the Heat Rejection System. The highest 95th percentile impact (approximately 0.8°C) is significantly below the temperature increase limit of 2°C. Based on the assessment undertaken, the environmental risks associated with operating the proposed heat rejection system are considered insignificant.

7.14.3 Mitigation measures

No mitigation measures are required.

7.15 Construction management

A preliminary environmental, construction and site management plan (ECSMP) has been prepared for the proposal by Cadence Australia (refer Appendix 26). The ECSMP addresses relevant construction requirements including:

- Heritage considerations;
- Public amenity, safety, and pedestrian management;
- Materials handling;
- Traffic management including public transport interfaces;
- Environmental management including water and waste management;
- Impact on adjoining and surrounding properties; and
- Community consultation, notification and complaints handling.

The proposed site establishment and access arrangements during construction are shown in Figure 29. The preliminary ECSMP encompasses the entire scope of the WBACP project. However, it may be feasible that the construction activities for the project are staged. In staging the project, the construction and impact mitigation measures identified within the preliminary ECSMP will be adopted.

Construction hours will be limited to Mondays to Fridays 7am to 6pm and Saturdays 8am to 1pm to ensure noise and other impacts do not interfere with amenity during evening hours and for most of the weekend period.

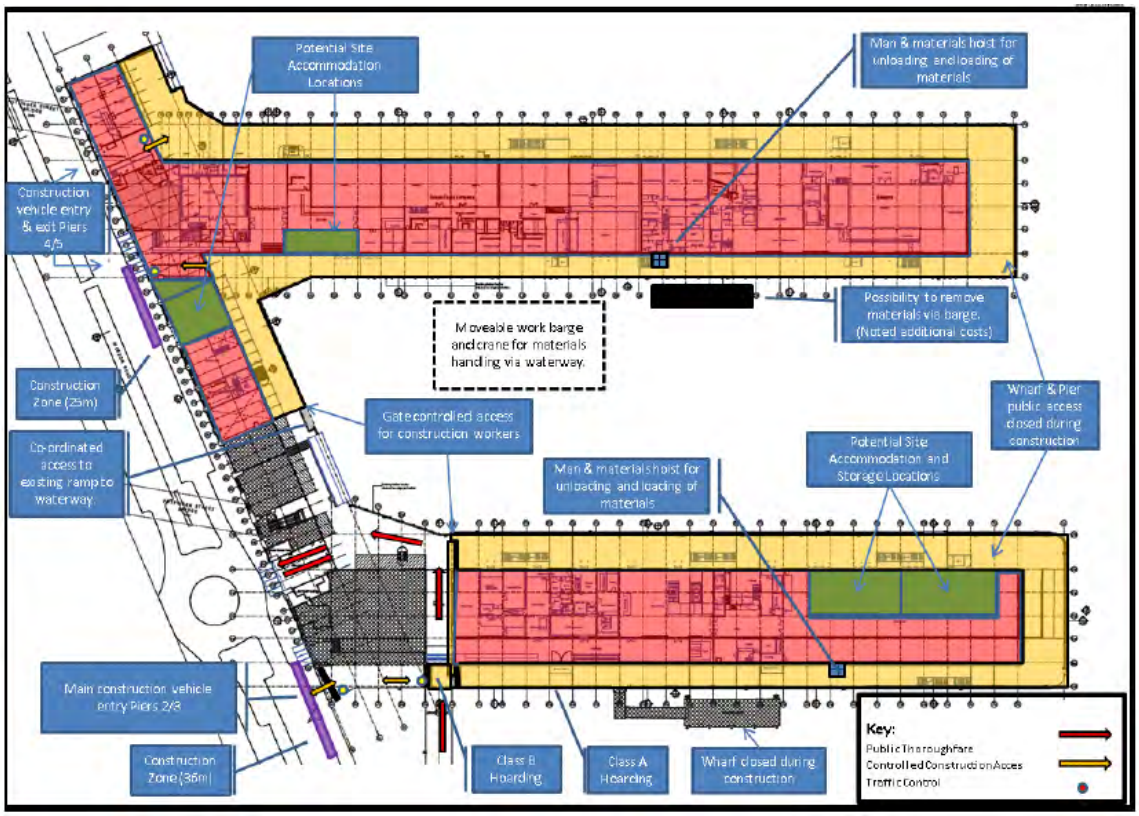


Figure 29: Site establishment and access arrangements during construction

The Principal Contractor will be required to follow the mitigation and management procedures identified in the preliminary ECSMP. It is proposed that once a construction contractor has been appointed and further details of the proposed works, construction methods and development staging are available, more detailed environmental, site and construction management plans will be prepared and implemented for the proposed works.

Having regard to the measures outlined in the preliminary ESCMP it is considered that the works will be adequately managed to ensure no adverse environmental impacts during construction.

7.15.1 Mitigation measures

Demolition and construction works will be undertaken in accordance with the recommendations of the preliminary ECSMP as amended in more detailed environmental, site and construction management plans following appointment of the construction contractor.

7.16 Waste management

To address the waste impacts of the proposal both during construction and operation, a waste management plan (WMP) has been prepared by ARUP (September 2017) and is provided at Appendix 29. The WMP primarily relates to operational waste noting that a detailed Construction Waste Management Plan (CWMP) will be prepared by the Principal Contractor prior to the commencement of construction. However the WMP includes a guided framework for the classification, transportation and management of construction waste.

7.16.1 Construction waste management

To provide for the minimisation of waste resulting from construction activities, it is proposed that a CWMP will be developed by the Principal Contractor prior to construction for implementation during construction. This plan will align with the project's specific sustainability goals including:

- Target 80% of demolition and construction to be reused or recycled in alignment with the NSW WARR Strategy. Waste reports (quarterly) will be prepared to ensure these targets are met.

It is intended that waste generation and management during the construction phase will be the responsibility of the Principal Contractor and is to be handled in accordance with the approved Construction Waste Management

Plan as it relates to materials procurement, handling, storage, and use. Waste generated during construction will be reused and recycled as a priority, and only disposed to landfill when unavoidable.

During construction, suitable areas on site (or off site, if necessary), will be allocated which provide adequate space and access for:

- Storage of building materials,
- Storage of construction waste,
- Sorting of construction waste, and
- Removal of construction waste for recycling, re-use or landfill.

Waste that is unable to be reused or recycled will be disposed of offsite to an EPA-approved waste management facility following classification. Details of waste types, volumes and destinations will be recorded in recording and tracking schedules. Prior to transporting waste materials to offsite facilities, it will be verified that the transporter and facility is licensed to handle the material it is designated to carry. Demolition and construction waste tracking sheets will be completed by all contractors.

Further measures for construction waste management outlined in the Construction Environmental Management Plan as follows will also be included in the Construction Waste Management Plan to be prepared by the Principal Constructor. These matters include:

- The Contractor's will adopt a philosophy that a tidy site is a safe site, and this principle will be maintained throughout the construction duration. Rubbish bins / skips will be provided at strategic positions around the site, where all subcontractors will be required to clear their rubbish as it accumulates. These bins will be brought down the pier in the construction hoists / builders lifts and loaded via forklift into the large skips for removal from site.
- A specific Waste Minimisation Plan will be developed by the principal contractor in accordance with the Contractor's Environmental Management System to ensure optimum waste management initiatives are implemented.
- All subcontractors will be responsible for removing their own packaging and other re-usable items such as pallets from site in order to promote recycling by subcontractors and suppliers, remove unnecessary packaging at the source rather than at site, and reduce the amount of rubbish being sent to land fill.

7.16.3 Operational waste

Day to Day Operations

To ensure best practice operation, an operational waste management strategy will be adopted for the project that ensures unavoidable waste generated during the operation of the WBACP will be handled, stored and managed in accordance with legislative and regulatory requirements. It will also support waste reduction and diversion targets set for its operation which form part of the WBACP sustainability objectives. To achieve this objective the WMP specifies the following targets to achieve best practice waste management:

- Waste avoidance and reduction
- 90% diversion of operational waste from landfill by 2020.

The proposed targets are based on diversion rates achieved by similar urban precincts

In terms of day to day operations the WMP report identifies waste streams, waste generation (performing arts and commercial waste) required storage based on waste generation rates and proposed waste storage locations. It also recommends servicing requirements and waste movement routes through the Precinct.

Based on the WMP it is considered that the proposed day to day operations of the WBACP can be appropriately serviced in terms of waste management, will meet best practice measures for waste minimisation and will not result in any adverse impact.

The Operational Plan of Management (Appendix 10) notes that to achieve the waste management target, additional initiatives will be needed, that will target the people's behaviours and the avoidance of specific different wastes. These could include:

- Mandating compostable food packaging (100% biodegradable products) for all Commercial retail tenants.
- Precinct wide waste education initiative, including updating signage and tenant workshops. and

- Set design and back of house construction reuse and recycling programs.

In accordance with the OPM, the Precinct Manager will be required to develop a specific WBACP Waste Management Plan to identify waste sources and propose appropriate management measures.

7.16.4 Mitigation measures

The proposed works will be undertaken in accordance with the following waste management mitigation measures:

Construction

- A Construction Waste Management Plan will be prepared prior to the commencement of construction works and will include detailed measures to be implemented to achieve project specific sustainability targets including waste reuse and recycling targets as outlined in the WBACP Waste Management Plan (ARUP, 4.11.2016). The CWMP will have regard to relevant EPA guidelines, City of Sydney Water Management Guidelines 2014 and address the additional requirements set out in Section 7.16.1 above.

Operational

- The Precinct Manager will be required to develop a specific WBACP Waste Management Plan to identify waste sources and propose appropriate waste management measures.

7.17 Site suitability

Having regard to the characteristics of the WBACP site and its location to the north of the Sydney CBD and adjacent to the harbour, the proposal is considered suitable for the site as it:

- will provide for the rejuvenation of the two wharves, which are State significant heritage buildings, to create a world class arts and cultural precinct
- is capable of being developed in a manner that will minimise impacts to the natural, historical, and environmental qualities of the Walsh Bay Wharves and the surrounding area;
- will only result in minor environmental impacts that can be appropriately managed and mitigated;
- is consistent with the site's existing use and land use zoning
- will be well served by proposed high frequency and high capacity public transport options, including the Sydney Metro and CSELR as foreshadowed in the Sydney City Centre Access Strategy

7.18 Public interest

The WBACP redevelopment is considered to be in the public interest as it will:

- enhance Sydney's reputation as a globally competitive city and as a major arts and cultural destination
- ensure the economic use and long term sustainability of the State's valuable heritage assets
- meet Sydney's arts and cultural needs for the 21st Century by modernising the facilities at Wharf 4/5 and providing new facilities in Pier 2/3 to facilitate the creation of world class performances and experiences, and to ensure Australia's pre-eminent companies are able to compete with their national and international peers, and
- stimulate increased public participation and tourism engagement in NSW cultural and heritage attractions, delivering direct and indirect economic benefits to the State.
- activate the precinct and enhance public use of, and access to, the precinct.

8. Environmental risk assessment and mitigation measures

The section provides an environmental risk assessment to identify the key environmental impacts associated with construction and operation of the Proposal, as required by the SEAR's. The table below summarises the potential environmental impacts identified in Section 7.0 and the mitigation measures proposed to ameliorate these impacts. Risks have been categorised as low, minor, moderate, high and/or extreme.

Table 21: Mitigation measures

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
Built form and urban design	The proposed works will adversely impact on the built form and character of the existing Wharf and its internal spaces **Risk: Low**	▪ Development will be undertaken in accordance with the submitted plans and supporting documentation.
Heritage	Works impact on the heritage values of the WBACP **Risk: Minor - Moderate**	▪ The proposed works will be undertaken in accordance with the recommendations in Section 8.1 of the Heritage Impact Statement prepared by Tropman and Tropman (September 2017).
Archaeology	Potential disturbance of historic or Aboriginal archaeology **Risk:** ▪ **Aboriginal – low** ▪ **Historic – minor**	<u>Aboriginal Archaeology</u> ▪ No further archaeological investigation in regard to Aboriginal archaeological sites is necessary. It is recommended that the proponent proceed with the proposed works with caution. ▪ In the unlikely event that suspected Aboriginal objects are discovered during the course of the proposed works then work will be stopped in this area, the object safeguarded and a suitably qualified archaeologist contacted to record the find prior to work continuing. ▪ The Office of Environment and Heritage (OEH) and the Metropolitan Local Aboriginal Land Council will be contacted and informed of any finds as soon as possible and prior to work in that location continuing. <u>Historic Period Archaeology</u> ▪ Excavation works for utilities will be monitored by an archaeologist for the purpose of documenting the archaeological profile and any relics or features that are revealed by that work. ▪ This work will not require an excavation permit to be issued by the Heritage Division of the Office of Environment and Heritage, however, a statement of methodology and research design will be prepared to define the scope of works and outcomes for monitoring programmes. ▪ Evidence recovered from monitoring and maritime archaeological work will be assessed to determine if an interpretation strategy would be appropriate. ▪ Moveable heritage will be managed according to the current interpretation strategy
Visual impact	Proposed development will disrupt or block views to and from the Harbour Proposed development will adversely impact on the visual amenity of the precinct.	▪ Stairs and external lifts will be designed to minimise view blocking. The design of the stair risers will endeavour to maximise transparency to views and lifts will be encased in glass as proposed. ▪ No further obstruction of views through the shore shed opening leading to Wharf 4/5 will be permitted ▪ No new permanent structures that could obstruct views to

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
	Risk: Low	the harbour through the openings in the shore sheds and the breezeway through Pier 2/3 will be allowed ▪ Internal framing and structure will be minimised as far as practicable to increase transparency in views and to reduce the visual presence of the lifts in views ▪ Non-reflective glass will be used on the lifts to increase the transparency of the lift glazing to views.
Traffic	The proposed development will result in increased traffic and parking on local roads during construction and operation **Risk: Minor to moderate**	<u>Transport Impact Assessment</u> ▪ 35 secure bicycle parking facilities will be provided on site for staff with visitor bicycle parking racks for 40 bicycles provided in the public domain. Additional bicycle spaces will be provided in the future subject to demand. ▪ Where conflicts are anticipated for the use of the on-street and on-site loading bays, the precinct manager will implement a loading dock management system which coordinates loading dock usage between tenants. The maximum vehicle size permitted on-site is an 8.8-metre MRV. ▪ An operational traffic management plan will be developed to manage arrivals and departures for the WBACP to ensure pedestrian safety and access is maintained and kerbside allocation (public transport and pick-up/ set-down) effectively accommodates the demand. The operational traffic management plan will be implemented by the appointed Precinct Manager. ▪ Opportunities to reallocate the existing kerbside space in Hickson Road to provide an additional three short-stay or pick-up/ set-down spaces near the WBACP will be investigated in liaison with City of Sydney. ▪ Operational traffic management plans for major events in the Precinct will be developed and approved in consultation with TfNSW, Roads and Maritime, the Transport Management Centre and the Sydney Coordination Office. ▪ The Precinct Manager will act as the Travel Plan Coordinator to implement and monitor the WBACP Green Travel Plan <u>Construction Traffic Management Plan</u> ▪ The approved construction contractor will undertake demolition and construction works in accordance with the requirements of the CPTMP and the TGS (Appendix 21). ▪ The approved construction contractor will consult with the CBD Coordination Office prior to undertaking the works. ▪ Construction workers will be encouraged to take public transport to site, with the bus service timetable provided to each worker during induction and displayed at prominent locations on site. ▪ Construction vehicles will be restricted to designated routes to and from the site. ▪ The proposed works zone will not impede access to the existing bus stop at the frontage of the site. ▪ Traffic controllers will be present at vehicle accesses to manage pedestrian, cyclist and construction vehicle interaction. ▪ Pedestrian wayfinding signage will be provided in accordance with the TGS.

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
Noise	Construction works impact on the amenity of neighbouring properties The operation of the WBACP impacts on the amenity of neighbouring properties **Risk:** ▪ **Construction - minor to moderate** ▪ **Operation – minor to moderate**	<u>Construction</u> ▪ Appoint a construction staff member responsible for construction noise and vibration management on site. ▪ Ensure construction staff are trained in ways to minimise noise during work, e.g. minimise dropping items, avoiding the use of stereos outdoors, avoiding shouting, slamming doors ▪ Turn off construction equipment when not in use. Maintain equipment and use quiet equipment where possible. ▪ Ensure construction only occurs between 7am to 6pm on weekdays and 8am to 1pm on Saturdays. No work on Sundays or public holidays. ▪ Undertake internal works in the proposed Bell Studio early in the construction schedule to minimise disturbance to adjacent tenants. ▪ Undertake construction noise monitoring to alert the Contractor and Precinct Management of potential exceedances of Noise Management Levels. ▪ Maintain open communication channels with nearby receivers, including commercial tenants and residents. ▪ Maintain a complaints log including timing, issues, immediate and on-going actions. ▪ Endeavour to schedule construction works around noise sensitive events occurring within or near the Precinct. ▪ Maintain minimum working distances for vibration intensive plant. Where this is not possible, vibration monitoring with real-time alerts should be considered. <u>Detailed design</u> ▪ Mechanical services acoustic treatment will be finalised at the detailed design stage. Standard noise control measures may be required, including quiet plant selection, attenuators, acoustic louvres, vibration isolators, screening and absorptive lining. <u>Operation</u> ▪ Internal noise sources within non-acoustically treated venues shall be limited to patrons talking and foreground music, representative of cocktail party functions and performances. Amplified music at ‘concert’ levels (i.e. ~105 dB(A)) is not permitted. ▪ Loading dock activities and waste and recycling removal should be scheduled outside of night-time hours, i.e. before 10:00pm or after 7:00am. ▪ Management of the precinct shall implement an Operational Noise Management Plan for events at the WBACP. ▪ In order to minimise the risk of sleep disturbance to surrounding residences while patrons are leaving the WBACP, patrons will be directed to leave via the aprons on the inside of the precinct, i.e. west of Pier 2/3 and the east of Pier 4/5. ▪ Precinct staff will direct patrons to keep noise to a minimum when leaving to reduce shouting or unnecessary loud conversations between leaving the

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		venues and leaving the precinct.
Amenity	Proposed development will result in adverse amenity impacts on surrounding properties **Risk: Minor to moderate**	▪ Construction works will be undertaken in accordance with the recommendations of the preliminary ECSMP as amended in more detailed environmental, site and construction management plans following appointment of the construction contractor. ▪ Day-to-day operations of the Precinct will be undertaken in accordance with the Operational Plan of Management
Maritime and Public Safety	The proposed development will adversely impact vessel movements/users of Sydney Harbour. The project design will put public safety at risk. **Risk: Low**	▪ The detailed design of the project will be undertaken in accordance with Infrastructure NSW's Health Safety and Environment (HSE) Management Project Delivery Framework ▪ Consideration will be given to further assessing the structural redundancy of the existing wharf structures against medium size vessel impact ▪ Should any water-based construction be proposed to implement the works, the Harbour Master will be contacted to agree construction stage vessel exclusion zones.
Contamination and acid sulfate soils	Site is not suitable for proposed development due to contamination **Risk: Low**	▪ The proposed works will be undertaken in accordance with the Preliminary 'Environmental, Construction and Site Management Plan' prepared by Cadence Australia Pty Ltd dated September 2017 ▪ Standard unexpected finds protocols will be implemented during the proposed works ▪ Hazardous materials on site will be managed in accordance with the recommendations of the 'Hazardous Materials Assessment, Wharf 2/3' (Presna Pty Ltd, October 2011) and 'Hazardous Materials Re-Assessment, Wharf 4/5' (Prensa Pty Limited, September 2012.
CPTED and Security	Proposed development will increase the risk to public safety and security **Risk: Minor**	▪ Adequate lighting will be provided throughout the precinct, particularly at the ends of Wharf 4/5 and Pier 2/3, the precinct and building entry/exit points. ▪ Wayfinding signage will be provided throughout the precinct to assist natural access control, and reinforce boundaries ▪ Security signage will be provided throughout the precinct, particularly at precinct and building entry/exit points, to notify people of the security measures in place, and to provide a deterrence ▪ The precinct image will be maintained at all times with vandalism repaired and graffiti to be removed as quickly as possible ▪ The precinct will be activated as much as possible, to attract legitimate users to the area, and to deter illegitimate users and crime ▪ As much glazing as possible, within heritage conservation limits, will be used to assist natural and electronic surveillance particularly at ground level, and in function, and hospitality spaces ▪ Areas of possible concealment of people, actions, or packages will be minimised particularly at the ends of Wharf 4/5 and Pier 2/3, staircases, lifts and the northern most and southern most boardwalks, and, ▪ CCTV will be provided to the perimeter of buildings and in

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		the precinct to monitor and space and deter opportunistic crime.
Construction	Construction works impact on the surrounding environment and amenity of neighbouring properties **Risk: Minor**	▪ Appoint a Community Liaison Officer to work with neighbours, understand their needs and requirements, and, where possible, adjust construction work methodologies accordingly. ▪ Demolition and construction works will be undertaken in accordance with the recommendations of the preliminary ECSMP as amended in more detailed environmental, site and construction management plans following appointment of the construction contractor.
Waste	Proposed development will generate additional waste during construction and operation **Risk: Low to Minor**	The proposed works will be undertaken in accordance with the following waste management mitigation measures: <u>Construction</u> ▪ A Construction Waste Management Plan will be prepared prior to the commencement of construction works and will include detailed measures to be implemented to achieve project specific sustainability targets including waste reuse and recycling targets as outlined in the WBACP Waste Management Plan (Arup, September 2017). . <u>Operational</u> ▪ The Precinct Manager will be required to develop a specific WBACP Waste Management Plan to identify waste sources and propose appropriate waste management measures.
Water	Proposed development will result in adverse flooding, groundwater and drainage impacts. **Risk: Low**	▪ Stormwater flows will be managed in accordance with the Integrated Water Management Plan for the site.

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9. Justification and conclusion

9.1 Justification

The new arts precinct at Walsh Bay is intended to expand and strengthen the existing cluster of cultural institutions and attractions along Sydney's foreshore. The arts and cultural program within the WBACP will complement the other cultural initiatives in surrounding areas, including those at nearby Barangaroo. Fundamental to the WBACP concept is the recognition that the wharves' unique location and distinctive heritage architecture provide significant opportunities for place making.

A number of identified needs and drivers have led to the development of the WBACP concept. These include:

- the Precinct's potential is not realised, negating opportunities for a range of socio-economic benefits;
- the current physical conditions and design of the facilities (particularly Pier 2/3) do not support the operational, commercial and artistic needs of current and future resident arts companies; and
- NSW's arts and cultural offering cannot develop and compete internationally or nationally, without provision of new and improved facilities for premier arts organisations.

The importance of the urban renewal of Walsh Bay is recognised in several key strategic planning documents, including the NSW State Infrastructure Strategy and the Metropolitan Strategy, *A Plan for Growing Sydney.* The NSW State Infrastructure Strategy (December 2012) identifies the completion of the development of a world class arts and cultural precinct at Walsh Bay as a key target action and one of the Government's priority arts projects. In addition, The WBACP is a priority project in *Create in NSW: NSW Arts and Cultural Policy Framework* published by the NSW Government in 2015.

The social and economic benefits that result from a redeveloped Walsh Bay include direct and indirect use values (value attributable to the visitation and enjoyment of the area by local, interstate and international visitors), as well as the more intangible benefits derived from the intrinsic and existence value.

Having regard to the broader context, with the Barangaroo development and activation of the Harbour's western waterfront underway, there is an opportunity for the WBACP to capitalise on the significant increase in local, interstate and international visitors that will be drawn to the area in the first years following commissioning and operation of these adjacent sites. Synergies with public transport and urban design solutions, complementary cultural activities and events and governance and operational efficiencies can also be explored and secured.

9.2 Ecologically Sustainable Development

The EP&A Regulation lists four principles of ecologically sustainable development to be considered in assessing a project. They are:

- The precautionary principle;
- Intergenerational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

9.2.1 Precautionary Principle

The precautionary principle provides that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

This EIS has not identified any serious threat of irreversible damage to the environment as a result of the WBACP and therefore the precautionary principle is not applicable to the proposal.

9.2.2 Intergenerational equity

Inter-generational equity seeks to ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

The proposal has been designed to benefit both the existing and future generations by providing for the long term viable adaptive reuse of Wharf 4/5 and Pier 2/3 which are part of the broader Walsh Bay Wharves Precinct which is identified as having heritage significance for the state.

9.2.3 Conservation of biological diversity and ecological integrity

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration.

No works are proposed within the adjoining harbour. Appropriate management measures will be put in place to ensure protection of the harbour's water quality from any works occurring landside. There will therefore be negligible ecological impacts as a result of the project.

9.2.4 Improved valuation, pricing and incentive mechanisms

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things.

As demonstrated throughout this EIS, the project will have significant social, economic and environmental benefits. Mitigation measures will be put in place to ensure environmental resources are protected. Sustainability initiatives will be incorporated into the design and operation of the various elements of the project, as discussed in Section 6.16.

9.3 Conclusion

This EIS submitted to the NSW Department of Planning and Environment (the Department) in support of a SSDA for the construction and operation of Pier 2/3 and Wharf 4/5 for arts and cultural uses. It also seeks consent for complementary commercial and retail offerings to activate the precinct. However, it does not seek consent for the waterfront square component of the original master plan which remains subject to further design consideration.

This SSDA seeks consent for the following:

- Internal reconfiguration and upgrading of Pier 2/3, Wharf 4/5 and Shore Sheds 4/5 to provide for improved rehearsal spaces, and in some cases performance spaces, for the ACO, ATYP, SDC, Bell Shakespeare, BDT, Sydney Philharmonia Choir, Gondwana Choir and Song Company as well as improved back-of-house and administrative facilities;
- External alterations to Pier 2/3 and Wharf 4/5 to provide for improved street entry at Hickson Road, additional external stairs, lifts and balconies designed as a contemporary interpretation of the original gantries reflecting the precinct's former industrial heritage;
- Installation of new glazing and doorways within the existing chequerboard design framework to allow for improved access and views in and out of the wharf buildings;
- Modification to the roofs of Pier 2/3 and Wharf 4/5 contained within the central valleys to provide for improved performance spaces and acoustics and to accommodate plant without the need for significant change to the roof profiles;
- Three new commercial spaces within Shore Sheds 4/5 for use as shops, cafes, restaurants, small bars and the like to activate the precinct;
- Use of the ground floor of Pier 2/3 for arts and cultural events and festivals including Sydney Writers' Festival and Biennale as well as for venue hire;
- Installation of shopfront glazing and retractable awnings to the north of the proposed commercial uses in Shore Sheds 4/5 similar to the existing awning on the Pier 2/3 Shore Sheds café;
- Early construction works comprising infrastructure upgrades, demolition and hazmat removal.

The construction program is estimated to take approximately 24 months commencing in July 2018.

In summary, the design for the WBACP has been well considered and designed to provide for the current and foreseeable future demands of the place whilst at the same time preserving its heritage and cultural significance. This EIS has demonstrated that the proposed development will have minimal adverse environmental effects and where impacts do occur appropriate measures can be adopted to mitigate these impacts. Given the significant public benefits of the project to both the local and wider community of Sydney as well as visitors to the city, it is

requested that the Minister approve the State Significant Development Application under Section 89E of the EP&A Act.