Environmental Impact Statement

Main Report

Stage 2 State Significant Development Application (SSD 7689)
Infrastructure NSW on behalf of Arts NSW
15 November 2016

WALSH BAY ARTS PRECINCT

Walsh Bay Arts Precinct

Environmental Impact Statement

Contact: Kimberly Everett
Infrastructure NSW
Level 15, 167 Macquarie Street
Sydney NSW 2000
Ph: 02 8016 0100 www.insw.com

Prepared by

MG Planning Pty Ltd
Suite 1.4, 135 Victoria Road, Drummoyne, NSW, 2047, Australia
T +61 2 9719 3118 F +61 2 9719 3166 www.mgplanning.com.au
ABN 48 098 191 443

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Prepared by Nicola Gibson

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			Name/Position	Signature
Revision 01	7 November 2016	Sent to INSW for review	Nicola Gibson	
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Appendices

Statement of Validity

Environmental Impact Statement prepared by

Name	Nicola Gibson
Qualifications	Bachelor of Arts Graduate Diploma Urban and Regional Planning MPIA, CPP
Address	MG Planning Pty Ltd Suite 1.4, 135 Victoria Road DRUMMOYNE NSW 2047
In respect of	Walsh Bay Arts Precinct Stage 2

Applicant & Land Details

Applicant name Applicant address	Infrastructure NSW on behalf of Arts 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	15 November 2016

Abbreviations

ACO	Australian Chamber Orchestra
ATYP	Australian Theatre for Young People
BDT	Bangarra Dance Theatre
CMP	Conservation Management Plan
Concept SSDA	WBAP Stage 1 Concept State Significant Development Application
CPTED	Crime Prevention Through Environmental Design
CPTMP	Construction Pedestrian and Traffic Management Plan
Department	Department of Planning and Environment
DGRs	Director-General's Requirements
ECSMP	Environmental, Construction and Site Management Plan
EIS	Environmental Impact Statement
EMP	Events Management Plan
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
ETMP	Events Transport Management Plan
GTP	Green Travel Plan
HIS	Heritage Impact Statement
IWMP	Integrated Water Management Plan
LEP	Local Environmental Plan
OENMP	Operational Event Noise Management Plan
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
The Choirs	Includes Gondwana, the Sydney Philharmonia and the Song Company
WBAP	Walsh Bay Arts Precinct

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Executive Summary

This Environmental Impact Statement (EIS) accompanies the Walsh Bay Arts Precinct (WBAP) Stage 2 State Significant Development Application (SSDA) Number SSD 7689. The WBAP proposal comprises an integrated performing arts and cultural precinct together with an enhanced public domain at Walsh Bay.

This Stage 2 SSDA follows the approval of the Stage 1 Concept SSDA (Stage 1 SSDA) for the WBAP which was approved on 21 May 2015. The Stage 1 SSDA provided for the "in principle" approval of the overall WBAP concept, establishing a framework for the future detailed design, land use and construction works required to deliver the project.

The scope of this Stage 2 SSDA includes the approved WBAP project along with the remaining external fabric of Wharf 4/5 housing the tenancy of the Sydney Theatre Company (STC). This portion was not included in the Stage 1 SSDA, however, a whole of building consolidation will enable a coordinated upgrade of the external fabric of Wharf 4/5. In particular, this approach will ensure compliance with current structural, accessibility and fire engineering requirements as well as minimise disruption to the precinct occupants, visitors and stakeholders.

The WBAP 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 applicant for the SSDA is Infrastructure NSW on behalf of Arts NSW.

The Site

The site comprises Pier 2/3, Wharf 4/5 (excluding the internal space occupied by the Sydney Theatre Company); the Shore Sheds for Wharf 4/5 and an area between Pier 2/3 and Wharf 4/5 which is proposed to be built over for an expanded public domain.

The land owner of the WBAP 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 with Arts NSW, primarily for arts and cultural uses.

Overview of the Proposed Development

The WBAP Stage 2 State Significant Development Application 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 performances spaces, for the ACO, ATYP, SDC, Bell Shakespeare, BDC, 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;
- The construction of new public domain, comprising a public square between Pier 2/3 and Wharf 4/5 for multipurpose use as well as steps down to the waterway;
- 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;
- Use of the precinct for arts festivals, events and pop ups as well as a range of activating uses such as restaurants, cafes and bars;
- Construction works comprising infrastructure upgrades, demolition and hazmat removal.

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 WBAP will complement the other cultural initiatives in surrounding areas, including those at nearby Barangaroo).

Fundamental to the WBAP 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 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.

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.

Community services and facilities will be enhanced through the provision of an expanded and upgraded public domain and associated amenities. At present, the public areas in this important arts precinct are constrained and do not take full advantage of the site's proximity to the waterfront. The proposed development provides for enhanced public access to the foreshore through the expanded public domain greatly improving the recreational experience and public access along the foreshore.

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 Walsh Bay Arts Precinct 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 7.0 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 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 as well as relevant conditions of the Stage 1 SSDA development consent. Key issues that are addressed include:

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

The EIS and supporting specialist reports provide a detailed assessment of the WBAP project in relation to these and other matters set out in the SEARs and conditions 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

1.1 Introduction

This Environmental Impact Statement (EIS) is submitted to the NSW Department of Planning and Environment (the Department) in support of a Stage 2 State Significant Development Application (SSDA) for the construction and use of the Walsh Bay Arts Precinct (WBAP). The WBAP proposal comprises an integrated performing arts and cultural precinct together with an enhanced public domain at Walsh Bay.

This Stage 2 SSDA follows the approval of the Stage 1 Concept SSDA (Stage 1 SSDA) for the WBAP which was approved on 21 May 2015. The Stage 1 SSDA provided for the "in principle" approval of the overall WBAP concept, establishing a framework for the future detailed design, land use and construction works required to deliver the project.

The scope of this Stage 2 SSDA includes the approved WBAP project along with the remaining external fabric of Wharf 4/5 housing the tenancy of the Sydney Theatre Company (STC). This portion was not included in the Stage 1 SSDA, however, a whole of building consolidation will enable a coordinated upgrade of the external fabric of Wharf 4/5. In particular, this approach will ensure compliance with current structural, accessibility and fire engineering requirements as well as minimise disruption to the precinct occupants, visitors and stakeholders.

The WBAP 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.

As this Stage 2 SSDA follows on from the approval of the Stage 1 Concept SSDA, the provisions of Part 4 Division 2A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) will apply.

The EIS has been prepared in accordance with the requirements that were issued on 1 July 2016 by the Secretary of the Department (refer to Appendix 1). This report includes the following information relevant to the application and as set out in the Secretary's Environmental Assessment Requirements (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.

The proponent for the project is Infrastructure NSW on behalf of Arts NSW. The project team for the preparation of the EIS has comprised:

Architecture	Tonkin Zulaikha Greer
Urban planning	MG Planning
Public domain	McGregor Coxall
Community/stakeholder consultation	Elton Consulting
Heritage and archaeology	Tropman and Tropman
Noise	Arup
Traffic and transport	GTA Consultants
Marine and groundwater assessment	Jacobs
Maritime harbour impact	Arup
Accessibility	Accessibility Solutions
Building Code of Australia	Blackett Maguire + Goldsmith

Building services and ESD	Arup
Fire safety	Arup
Contamination	JBS&G
Sustainability	Arup
Utilities	Arup
Construction management	Cadence
Water management	Jacobs
Operational management	MI Consultants
Quantity surveying	WT Partnership
Structural engineering	Taylor Thomson Whitting
Visual impact assessment	Richard Lamb and Mogamma
CPTED	Arup
Wayfinding and signage	Urban and Public (Aspect Studios)
Environmental site auditor	Enviroview
Aboriginal and historical archaeology	CRM
Marine archaeology	Cosmos Archaeology
Land survey	LTS Lockley

1.2 Overview of proposed development

The WBAP Stage 2 SSDA seeks consent for construction works below to realise the WBAP project, as well as the proposed external alterations and additions to all of Wharf 4/5. It also seeks consent for new commercial and event uses in the precinct. A detailed description of the proposed development is provided in Section 6.0 and outlined below:

Demolition and construction works

- Construction works comprising infrastructure upgrades, demolition, hazmat removal and sub structure works.

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, cafes and foyer spaces extending onto external gantry platforms (balconies) providing breakout space for internal foyers and allowing views of outdoor performances;
  - Mezzanine spaces for offices and back of house facilities;
  - Upgrades to meet compliance with current BCA, DDA and fire codes;
  - New lifts and stairs;
  - Creation of new commercial tenancies and public toilets;
  - Removal of some storey posts and beams to facilitate internal reconfiguration and new uses; and
  - Retention of a large proportion of the ground floor in its existing ‘raw’ heritage state for events and festivals including Sydney Writers’ Festival and Biennale including venue and commercial hire.
- External alterations and additions comprising:
  - New balconies and external stairs for fire egress;
  - New external lift for access;

- 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;
- Roof penetrations within the central valley at the southern and northern end to accommodate new performance spaces and associated structural modifications including truss strengthening;
- Installation of ESD elements, such as photovoltaic panels and seawater heat exchange systems; and
- 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.

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 spaces;
  - Upgraded foyer and exhibition space along the eastern frontage;
  - Improved office space at mezzanine level including a new lift and stairs;
  - Provision of a function space at ground level of the northern end of wharf with associated kitchen facilities; and
  - New entrance and new glazing in bays of sliding cargo doors, opening up the foyer and main studio to the Pier 4 apron.
- Minor internal alterations and additions to the SDC tenancy comprising:
  - Reducing the existing workshop space to create a fifth dance studio; and
  - Upgrading office and reception areas.
- External alterations and additions to SDC tenancy comprising:
  - Raising of the timber wharf deck adjoining the SDC café and opening of the facade with new glazing to activate the waterfront square.
- Creation of new commercial tenancies and public toilets;
- External fabric alterations around the Sydney Theatre Company (STC) tenancy comprising:
  - 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 ‘gantry’ balconies, stairs and lifts mid-wharf and at the end of the wharf to provide for improved accessibility and compliance with fire engineering solutions;
  - Minor amendments to the existing façade to accommodate new entries and exits along the wharf;
  - Roof penetrations within the central valley at two locations to accommodate theatre and workshop spaces and associated structural modifications including truss strengthening; and
  - Reinstallation of existing photovoltaic panels where applicable.

Wharf 4/5 Shore Sheds

- Internal alterations to reconfigure the choir spaces, including provision of a mezzanine for choir administration;
- Creation of new commercial tenancies at ground and mezzanine levels; and
- Provision of office space at ground level.

Public Domain

- Construction of a new waterfront square comprising a deck on piled structure:
- Shaded informal performance space on piled structure; and
- Changes to existing levels and steps down to facilitate access between the existing apron and new waterfront square.

New Uses

- Use of the precinct for arts festivals, events and pop ups as well as a range of activating uses such as retail, restaurants, cafes and bars.

1.3 Background to Walsh Bay Arts Precinct

The WBAP Master Plan, released in November 2013, considered a range of development options for a revitalised arts and cultural precinct in Walsh Bay. The WBAP Master Plan proposed accommodation of resident arts companies, performance venues, rehearsal/studio spaces, commercial leasing opportunities, and spaces for creative and commercial mixed use. It also proposed an enhanced public domain.

Since the WBAP Master Plan was developed, further refinement of the various elements in the master plan was undertaken culminating in the development of a preferred option for the Precinct which was the subject of the Stage 1 Concept SSDA.

On 21 May 2015, development consent (SSD 6069) was granted by a delegate of the Minister for Planning to a Stage 1 SSDA. The Stage 1 SSDA sought "in principle" approval for the WBAP but did not include the STC's facilities at Wharf 4/5.

The development consent for the Stage 1 SSDA approved the following:

- The adaptive re-use of Pier 2/3 providing new arts facilities including performance venues for the Australian Chamber Orchestra (ACO), Bell Shakespeare and Australian Theatre for Young People (ATYP);
- Retaining a large heritage commercial events/art space for Sydney Writers Festival, Biennale of Sydney and a wide range of commercial and artistic events;
- Refurbishment of the ground floor arts facilities of Wharf 4/5 and its associated shore sheds for BDT, SDC, Sydney Philharmonia, Gondwana and Song Company;
- New commercial retail opportunities; and
- Creation of a major waterfront public square to become an innovative external platform for collaborative performances, festivals, public art, cafés, restaurants, commercial and community activities.

Condition A3(a) of the Stage 1 SSD consent states that future stages of the project are to be the subject of future development applications. Condition A3(b) requires that the determination of future applications for development of the WBAP are to be generally consistent with the terms of the development consent, including those modifications and future conditions as set out in Part B and Part C of Schedule 2, respectively. The requirements of the Stage 1 SSD consent are detailed in Section 4.0.

Consistent with the NSW Government's intention to create an enhanced arts and cultural precinct at Walsh Bay, the Sydney Theatre Company (STC) is intending to improve its facilities at Wharf 4/5. The project, known as STC50, is intended to create better theatre and rehearsal facilities as well as improved workspaces. The improvements are also focussed on creating enhanced visitor experiences and improving STC's revenue earning capacity.

To assist in the coordination of both projects, this Stage 2 SSDA seeks approval not only for the WBAP but also for the STC's proposed external alterations and additions to the facilities at Wharf 4/5. The internal changes proposed to the STC's facilities at Wharf 4/5 are, however, the subject of a separate SSDA.

1.4 Assessment of alternatives

As noted above, 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 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 the WBAP Master Plan was prepared which considered a range of arts and cultural development options in Walsh Bay. Following the preparation of the WBAP 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 WBAP Master Plan (most activated option): This option refined the Master Plan by locating the ACO, ATYP and Bell Shakespeare in Pier 2/3 along with around 2,000sqm of commercial events /arts space at ground level. The Shore Sheds would continue to accommodate the choirs as well as around 1,000sqm of new commercial retail space. Sydney Theatre Company (STC), Sydney Dance Company (SDC) and Bangarra 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 WBAP 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 Bangarra 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 are provided at the upper level of Pier 2/3.
- Option 4 Modified WBAP 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 Bangarra 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 WBAP 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 WBAP 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 has been deemed the preferred development option. Option 2 best supports the project objectives, in particular Objectives 3 and 4. Option 2 most closely resembles the original vision put forward in the WBAP Master Plan which was subject to extensive discussions and negotiations with the arts organisations over the past two years and best reflects their needs and tenancy requirements.

Option 2 also better supports the development of a financially viable precinct with the expansion of leasable commercial retail space on the ground floor of the precinct. It allows a diversity of commercial experiences, which benefits the visitor experience.

Of critical importance, the preferred option is financially viable operationally and pays for itself over the long term.

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2. Site Analysis

2.1 Site and surrounds

The WBAP 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 location of the WBAP site is shown in Figures 1 and 2.

Figure 1: Site location

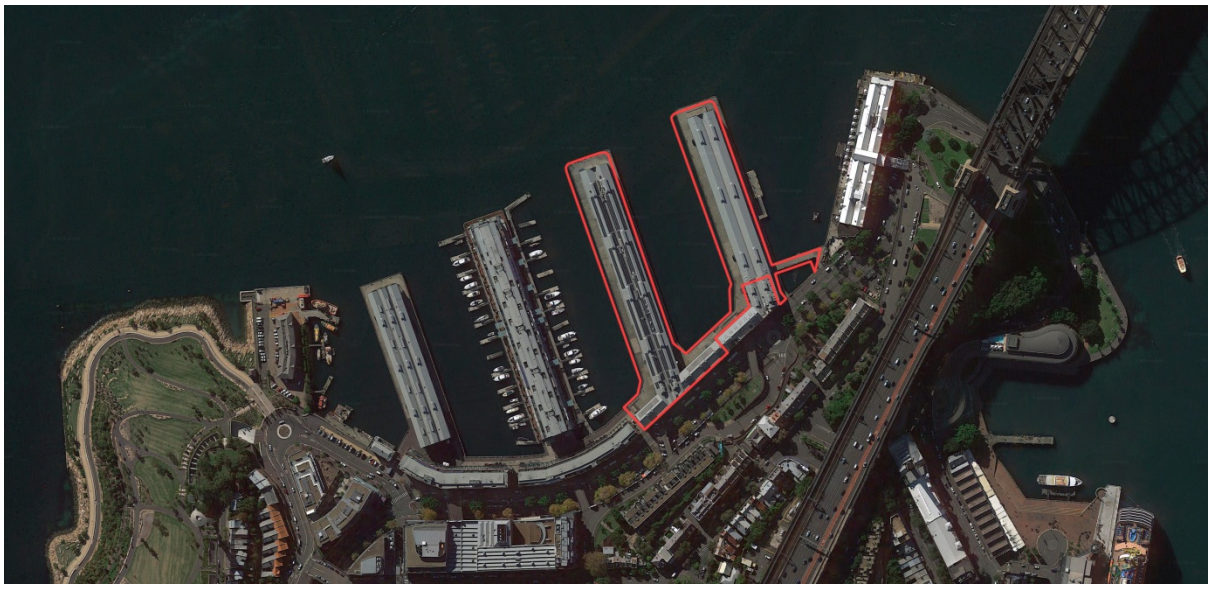

Figure 2: Site aerial

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, Bangarra Dance Theatre 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 of Walsh Bay comprises three redevelopment areas – Barangaroo Reserve, Central Barangaroo and Barangaroo South. Barangaroo Reserve is located adjacent to the Walsh Bay Precinct 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. The NSW Government has also indicated that 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

Photo 3: Existing commercial development in shore sheds

Photo 4: Existing offices in Pier 2/3

Photo 5: Hickson Road looking north-east. Note pedestrian bridge over Hickson Road in background.

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

Photo 7: Residential apartments at Wharf 6/7

Photo 8: Residential apartments in the shore sheds of Wharf 6/7

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 Arts NSW 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 was subsequently extended in July 2014 for a further 3 years.

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 Sydney Dance Company and Bangarra Dance Theatre in the lower shed, along with Sydney Theatre Company 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.

2.2 Land ownership and legal description

Pier 2/3 is legally described as Lot 11 in DP 1138931 and Wharf 4/5 is legally described as Lot 65 in DP 1048377. The total area for these lots is 18,090m2.

A land survey is provided in Appendix 2.

The land owner of the WBAP 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 Arts NSW, Department of Justice, primarily for arts and cultural uses.

The area of water that the project proposes to build over is also owned by RMS. Its land title description is Lot 12 in DP 1138931.

2.3 Land owner's consent

Owner's consent to the lodgement of the SSDA is not required in this instance as Arts NSW is a public authority. Notwithstanding, owner's consent to the lodgement of the SSDA has been granted by RMS. A copy of the written notice is provided at Appendix 3.

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3. Secretary's Requirements

The environmental assessment requirements (SEARs) for the WBAP Stage 2 EIS were issued on 1 July 2016 by the Secretary of the Department of Planning and Environment (refer Appendix 1).

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	Appendix 6
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	Section 7.0
	Policies, Guidelines and Planning Agreements ▪ NSW State Priorities ▪ A Plan for Growing Sydney ▪ NSW Long Term Transport Master Plan ▪ Sustainable Sydney 2030 ▪ 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 ▪ Heritage Council Guidelines Assessing the Significance of Archaeological Sites and Relics ▪ Crime Prevention Through Environmental Design Principles	Section 7.0
	Stage 1 Consent ▪ Demonstrate consistency with terms of Stage 1 approval	Section 3.0 and throughout EIS as indicated in Table 3
	Built Form and Urban Design ▪ Address design quality, with specific consideration of the overall site layout, axes, vistas and connectivity, open spaces and edges,	Section 8.1 and SSDA Design Report at Appendix

ITEM	EIS REQUIREMENT	SECTION
	primary elements, gateways, façade, rooftop, mechanical plant, massing, setbacks, building articulation, materials and colours.	16
	Public Domain and Public Access ▪ Identify proposed streetscape, open space, public domain and key pedestrian linkages with and between other public domain spaces ▪ Address all aspects of the public domain within the precinct, including: - Footpaths and pavements, roads and/or rights of carriageways - Outdoor seating - Materials and finishes - Furniture and fixtures - Street lighting, pedestrian lighting and feature lighting - Edges, screens and fences - Walls, embankments and mounds - Steps, ramps, vehicle crossings, decks and pathways - Services where affected, utility poles and service pits - Civil and stormwater infrastructure - Tree planting - Mass planting beds, planter boxes and individual plantings - Bicycle parking ▪ Detail interface between proposed uses and public domain ▪ Provide public domain guidelines and plans for use and operation of the public domain ▪ Outline any signage strategy including wayfinding signage ▪ Prepare an accessibility report	Section 8.2, SSDA Design Report at Appendix 16 and Urban Design Guidelines at Appendix 17
	Ecologically Sustainable Development (ESD) ▪ Detail how ESD principles will be incorporated in the design, construction and ongoing operation of the development.	Sections 6.16 and 10.2 and Sustainability Report at Appendix 13
	Amenity ▪ Address and demonstrate a high level of environmental amenity in respect of solar access, acoustic and visual privacy, servicing requirements (including waste management, loading zones, mechanical plant), access to views, and wind impacts, particularly regarding the impacts of the outdoor waterfront square ▪ Assess design, construction and public safety associated with construction and operation of waterfront public square and water steps.	Sections 8.9, 8.10 and 8.11, and Wind Report at Appendix 29 and Maritime Impacts report at Appendix 30
	Heritage and Archaeology ▪ Prepare a Heritage Impact Assessment that: - Describes the heritage significance of all heritage items on and surrounding the site including submerged maritime heritage and all archaeology - Describes the potential impact of the proposal on the significance of the site, its components and values - 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 - Addresses the proposal against the policies of the Conservation Management Plans for the Wharves Precinct and specific buildings and the proposed adaptive reuse measures to minimise impacts on heritage items and archaeology - Proposes opportunities to interpret the site's heritage significance and archaeology maritime and historical	Sections 8.3 and 8.4 and HIS at Appendix 18 and Archaeological Assessment and Management Plan at Appendix 20

ITEM	EIS REQUIREMENT	SECTION
	association - Include a framework to manage and fund the maintenance of public domain/common areas through a committee of owners to maintain a consistent visual character throughout the precinct ▪ Prepare an Archaeological Assessment and Management Plan	
	Noise and Vibration ▪ Include a noise and vibration assessment that: ▪ Assesses construction noise and vibration impacts, including cumulative impacts from all concurrent construction activities ▪ Assesses operational noise from use of buildings and the public domain, associated events and any food and drink premises ▪ Assesses operational vibration from use of the premises ▪ Outlines 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 (EPA)*	Section 8.7 and Appendices 27 and 28
	Transport and Accessibility ▪ Include a Transport Impact Assessment that includes, not is not limited to, the following: <u>Construction</u> - An assessment of traffic and transport impacts during 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 - An assessment of cumulative impacts associated with other construction activities - 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 - 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 light rail, ferry and bus networks o Planned and approved developments in the area including Barangaroo - Detail the provision of vehicle, 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 - Detail any likely measures necessary to manage pedestrians and vehicles during events within the Precinct - Proposals for safe and efficient access to loading, deliveries and servicing of the development - Detail sustainable travel initiatives	Section 8.8 and Appendices 25, 26, 27 and 28
	Impacts on Harbour uses ▪ Address the impacts on Harbour vessel movements and all users of	Section 8.10 and Appendix 30

ITEM	EIS REQUIREMENT	SECTION
	Sydney Harbour ▪ Detail any berthing arrangements	
	Event Management and Operation ▪ Outline operational management strategies to mitigate impacts from the various cultural and performance events envisaged for the Precinct	Sections 6.8 and 6.13 and Appendices 5 and 10
	Environment ▪ Detail the potential impacts of the development on terrestrial and marine environments, including the seabed, marine ecology and biodiversity	Section 8.12 and Appendix 31
	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)	Section 8.13 and Appendices 32, 33 and 34
	Water, Drainage, Stormwater and Groundwater ▪ Prepare an Integrated Water Management Plan detailing stormwater and wastewater management, including any re-use and disposal requirements, demonstration of water sensitive urban design and any water conservation measures, and identification of any appropriate water quality management measures.	Section 8.14 and Appendix 15
	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 8.15 and Appendix 35 Acid sulfate soils – Section 8.19
	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 ▪ Noise and vibration impacts on and off site ▪ Air quality impacts on the neighbourhood ▪ Odour impacts ▪ Water quality management for the site ▪ Construction waste classification, transportation and management methods in accordance with relevant guidelines	Section 8.18 and Appendix 35
	BCA and Fire Safety ▪ Include a Fire Engineering Report demonstrating that proposed development can achieve compliance with BCA and fire safety requirements	Section 6.12 and Appendices 8 and 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 6.17 and Appendix 14
	Drainage, Flooding, Climate Change and Sea Level Rise ▪ Provide a drainage concept for the site incorporating water sensitive urban design ▪ Address the potential risks from flooding, wave movements and sea level rise on the development and the potential impacts on groundwater and detail any proposed mitigation measures	Section 8.14 and Appendices 13 and 20

ITEM	EIS REQUIREMENT	SECTION
	Licence requirements Address the provisions of the *Liquor Act 2007* relating to the "liquor freeze" matters within the Sydney CBD Entertainment Precinct and any impact on new licences, increase in licensed trading hours and or licensed areas.	Section 6.15
	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 5
	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 - Environment Protection Authority - Roads and Maritime Services - CBD Coordination Office within Transport for NSW - Heritage Council of NSW - Sydney Ports Corporation - NSW Police - Fisheries NSW (Department of Primary Industries) - Fire and Rescue NSW - 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 5.0

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4. Stage 1 SSDA Conditions of Consent

4.1 Compliance with Stage 1 SSDA conditions

As noted in Section 1.0, the site is subject to a previous Stage 1 SSDA approval for the WBAP (SSD 6069). The Stage 1 approval provided for the in principle consent of the overall WBAP concept, establishing a framework for the future detailed design, land use and construction works required to deliver the project.

The Stage 1 SSDA approval contains certain conditions of consent that are relevant to the proposed development because they address the specific built form and potential impacts of the proposal. In addition to the SEARs for SSDA 7689, the relevant conditions of SSD 6069 have been listed in Table 3 below and addressed throughout this EIS and the appendices.

Table 3: Stage 1 SSDA – Relevant Conditions of Consent

CONDITION NO.	CONDITION	COMPLIANCE
A3	**Determination of Future Applications** In accordance with Section 83B(3)(b) of the EP&A Act, future stages of the concept proposal are to be the subject of future development applications. The determination of future applications for development of the WBAP are to be generally consistent with the terms of this development consent	The detailed design, land use and construction proposed for the WBAP is the subject of this DA. The proposed WBAP development the subject of this DA is generally consistent with the Stage 1 development consent. This SSDA also seeks approval for the external STC works which are outside the scope of the Stage 1 SSDA.
A6	**Limitations of Consent** The Stage 1 consent is limited to the approval of the concept of the WBAP only and does not give consent for any construction works. Such works shall be the subject of separate development applications.	This SSDA seeks consent for construction works.
A7	**Restrictions on Use** The future use of the waterfront square and associated outdoor spaces for events is to be generally consistent with the scope and frequency of events set out in the table to A7.	SSDA is consistent with this requirement. Refer Operational Plan of Management at Appendix 12 for more detail regarding future use of public domain for events.
A8	**Walsh Bay Arts Precinct Working Group** A Working Group is to be established prior to the lodgement of the first DA. The Working Group is to meet on a regular basis to discuss issues associated with design development and environmental impact resolution. The Working Group is to be convened by Arts NSW and is to include representatives from the City of Sydney, Office of Environment and Heritage, Transport for NSW, RMS and Environment Protection Authority. Each future DA is to document the involvement of the Working Group in the design and environmental impact resolution of the proposal.	Authorities Working Group has been established – refer discussion in Section 5.0. The Authorities Working Group as well as individual agency members have been involved in the design and environmental impact resolution of the proposal.
A9	**View Corridor Between Buildings** ▪ The view corridor between Hickson Road and the	Refer discussion regarding visual impact in Section 8.6 and Visual Impact Assessment at

CONDITION NO.	CONDITION	COMPLIANCE
	harbour through the shore sheds is to remain unobstructed by any installation.	Appendix 22.
A10	**Urban Design Guidelines** Prior to the lodgement of the first DA, the applicant is to prepare a detailed set of Urban Design Guidelines for the WBAP. The Guidelines shall include but not be limited to the following: ▪ measures to ensure that: - public spaces are maintained for public use - privately leased areas do not intrude into the new public space - the potential for the proliferation of furniture and structures is minimised in the new public space and adjacent aprons ▪ design details in relation to the following: - wayfinding signage (including integration with Harbour Village North Public Domain Strategy and Sydney City Centre Access Strategy) - café, restaurant and bar furniture - advertising/branding - umbrellas and awnings - lighting - public seating - bike racks (the provision is to satisfy Council requirements) ▪ the activation of Hickson Rd to assist in the City's delivery of the Harbour Village North Public Domain Master Plan ▪ views and sightlines to the WBAP and Sydney Harbour are not unduly obstructed ▪ measures to preclude the addition of marquees, shade structures or enclosures on the balconies in the future	Urban Design Guidelines have been prepared in accordance with this condition and are provided at Appendix 17.
A11	**Interpretation Plan – Moveable Heritage** Prior to the lodgement of the first DA, an Interpretation Plan for moveable heritage currently housed at Pier 2/3 (upper and lower decks and pier apron) shall be prepared in consultation with RMS and the Heritage Council of NSW. The Interpretation Plan shall take into consideration the recommendations in Section 7.7 of the Heritage Impact Assessment prepared by Design 5 and dated June 2014. A copy of the final Interpretation Plan shall be submitted to the DP&E, City of Sydney and Heritage Council	An Interpretation Plan has been prepared in accordance with this condition and is provided at Appendix 19.
A12	**Operational Plan of Management** The applicant is to review and finalise the draft Operational Plan of Management (OPM) for WBAP in consultation with the WBAP Working Group (Authorities Working Group). A copy of the final OPM is to be submitted to the DP&E and City of Sydney prior to lodgement of the first DA.	An updated Operational Plan of Management has been prepared in consultation with the Authorities Working Group and is provided at Appendix 12.
A13	**Operational Event Noise Management Plan** ▪ The applicant is to finalise the draft Operational Event Noise Management Plan (OENMP) in consultation	An Operational Event Noise Management Plan has been prepared and is provided at

CONDITION NO.	CONDITION	COMPLIANCE
	with the EPA and Council. Specifically, the EPA and Council are to be consulted in relation to the following: - relevant event noise control targets for each specific category of event - the methodology for noise monitoring - reasonable and feasible noise mitigation techniques specific to each category of event - required community consultation techniques specific to each category of event. ▪ The Plan is to include management strategies and mitigation measures included in Sections 7 and 8 of the Noise and Vibration Management Plan prepared by WSP dated June 2014. ▪ A copy of the final OENMP is to be submitted to the DP&E and Council prior to lodgement of the first DA.	Appendix 24.
A14	**Community Consultation Strategy** ▪ Prior to lodgement of the first DA, the applicant is to prepare a detailed community consultation strategy for the future construction and operation of WBAP. The Strategy is to include details for the communication between the Applicant (and its contractors), government agencies, Council and community stakeholders (particularly adjoining landowners). The Strategy shall include, but not be limited to: - procedures and mechanisms for regular dissemination of information on construction management, the operation of the facility and matters associated with environmental management - procedures and mechanisms to be implemented to resolve any issues/disputes that arise - the establishment of a website for the provision of information associated with the development. ▪ Details demonstrating compliance with the terms of this condition are to be submitted to the DP&E prior to lodgement of the first DA.	A community consultation strategy has been prepared in accordance with this condition and is provided at Appendix 4
A15	**Complaints Management System** Prior to the lodgement of the first DA, the applicant is to prepare a detailed Complaints Management System: ▪ Complaints Management System for Construction – The System shall include the following: - A direct telephone number on which complaints and enquiries about the project may be registered - A postal address to which written complaints and enquiries may be sent - An email address to which electronic complaints and enquiries may be transmitted - Details of how reports complaints received will be recorded and responded for the duration of construction. ▪ Complaints Management System for Operation – The System shall establish a 24-hour event complaint hotline. The hotline must be operational for the full duration of each event, inclusive of the construction, bump-in/out and demolition works associated with	A complaints management system has been prepared in accordance with this condition and is provided at Appendix 4.

CONDITION NO.	CONDITION	COMPLIANCE
	each event. The System shall detail how complaints will be recorded and managed in accordance with sections 4.6 and 4.6 of the *Operational Noise Management Plan* prepared by WSP dated 10 December 2014. ▪ Details demonstrating compliance with the terms of this condition are to be submitted to the Secretary prior to the lodgement of the first DA.	
B1	**Marine Sediment Testing** ▪ Prior to the lodgement of the first DA, the applicant is to: - complete the soil and preliminary sediment sampling program outlined in the advice from JBS&G dated 28 April 2015 and prepare a detailed environmental monitoring program for the duration of the construction works - incorporate the environmental monitoring program into the Construction Framework Environmental Management Plan - update the Phase 1 Environmental Site Assessment prepared by JBS&G dated 23 June 2014 to include the results of the marine sediment testing - obtain a Site Audit Statement from a NSW EPA accredited Site Auditor certifying that the site is suitable for the proposed used.	Marine sediment testing has been undertaken in accordance with this condition – refer discussion in Section 8.13 and Appendices 32 and 33.
B2	**Heritage Requirements for all Future Applications** ▪ All future DAs shall be accompanied by a Heritage Impact Assessment ▪ All future DAs shall demonstrate compliance with the following: - the conclusions and recommendations in section 8.0 of the Heritage Impact Assessment prepared by Design 5 dated 23 June 2014 - the requirements of Conditions B4 to B7 (below, as relevant) - An experienced heritage practitioner is to be commissioned to work with the consultant team throughout the design development, contract documentation and construction stages of the project. The heritage practitioner is to be involved in the resolution of all matters where existing significant fabric and spaces are to be subject to preservation, restoration, reconstruction, adaptive reuse, recording and demolition - The interpretation Plan for the Moveable Heritage prepared in accordance with Condition A11.	A Heritage Impact Statement has been prepared in accordance with this condition and is provided at Appendix 18. An Interpretation Plan has been prepared and is provided at Appendix 19.
B3	**Operational Management Plans** ▪ All future applications for the fitout and adaptive reuse of the WBAP are to demonstrate compliance with the following: - The final Operational Plan of Management prepared in accordance with Condition A12	Noted.

CONDITION NO.	CONDITION	COMPLIANCE
	- The final Operational Event Noise management Plan prepared in accordance with Condition A13 ▪ Where future application/s require amendments to these Plans they are to be endorsed by the respective agencies/groups referred to in the respective Condition	
B4	**Archival Recording** ▪ Prior to the lodgement of the first DA, a complete and comprehensive archival recording of the WBAP is to be undertaken in accordance with NSW Heritage Division Guidelines for Photographic Recording of Heritage Items Using Film or Digital Capture (Heritage Office 2001, revised 2006). ▪ A copy of the archival documentation is to be submitted to the City of Sydney Archives, Heritage Council and the State Library of NSW.	Archival recording has been undertaken in accordance with this condition and is included in the Heritage Impact Statement at Appendix 18.
B5	**Heritage and Archaeology – Waterfront Square** ▪ An Archaeological Assessment and Management Plan is to be prepared and submitted with the future application for the construction of the waterfront square. The assessment is to be completed in accordance with the recommendations of the Tropman and Tropman CMP Policy 9.2.1.2 to 9.2.1.5. Specifically, the assessment shall include an underwater visual survey within the area between Pier 2/3 and Wharf 4/5 to locate and record any structural remains and/or cultural deposits associated with the previous wharves. ▪ Any new piles associated with construction of the waterfront square shall be informed by the Archaeological Assessment and Management Plan and shall demonstrate minimal disturbance to any archaeological fabric.	An Archaeological Assessment and Management Plan has been prepared in accordance with this condition and is provided at Appendix 20.
B6	**Design of the Performance Space** ▪ Any future application for the construction of the performance space and public domain shall demonstrate how the design has satisfied the design guidelines contained in Section 7.3.2 of the Heritage Impact Assessment prepared by Design 5 dated June 2014 including the following: - The structure is to be of exceptional design merit and quality - The design should be entirely modern and should not copy or confuse itself with the surrounding heritage buildings - The structure should respect the significance of the WBAP - The structure should be visually separate from the surrounding heritage buildings and be self-supporting - The structure respects significant views and vistas to and from the site and not impede other significant views that pass through the site. In this regard, it should be open on all sides but can have the ability to be temporarily screened	The Heritage Impact Statement at Appendix 18 provides an assessment of the performance space and public domain. A visual impact assessment has been undertaken in accordance with this condition and is provided at Appendix 22.

CONDITION NO.	CONDITION	COMPLIANCE
	when required for special performances or events - Ensures that the structure does not detract from the form, sense of exterior space and reading of the pier aprons - The materials and finishes appropriately respect the industrial character of Walsh Bay ▪ Any future application/s is to be supported by a visual impact assessment of the waterfront square (including the shelter) when viewed from the Harbour and Dawes Point. The assessment is to demonstrate that the visual impact of the structure is minimised through its design, and furthermore, that it does not overwhelm and dominate its setting.	
B7	**Roof Penetrations – Pier 2/3: ACO Auditorium** ▪ Any future proposal for new penetrations in the roof form of Pier 2/3 shall comply with the design criteria established by Design 5 and included in section 5.4.7 of the Heritage Impact Assessment dated 23 June 2014, including the following: - A single breech in the roof in one location only - It should only occur within the central valley and not impact or alter the outer roof slopes - It must not alter any existing roof lanterns and should respect prominence of the roof lanterns - Any alterations to the roof should be set back from the roof lanterns and preferably centred between them - The roof material and colour should match existing adjacent roofs	This Stage 2 SSDA seeks consent for two roof penetrations within the central valley at the southern and northern end in Pier 2/3 to accommodate mechanical plant and associated structural modifications including truss strengthening. Roofs of the Walsh Bay Wharves have been modified during the redevelopment that has taken place over the past 15 years, setting a precedent. The HIS has assessed the impact of the two roof penetrations to be minor – refer discussion in HIS at Appendix 18 and Section 8.3 of the EIS.
B8	**Wave Impact Assessment** ▪ Any future DA for the construction of the overwater decking and associated public domain works is to be supported by an assessment undertaken by a suitably qualified person to demonstrate that the design is capable of withstanding the impact of tidal and wave action including as a result of wave-wash from boats, ferries etc	A Maritime Impacts Assessment Report has been prepared and is provided at Appendix 30. The report provides an assessment of tidal and wave action and concludes that the proposed overwater structure is adequate subject to appropriate mitigation measures.
B9	**Waterfront Square and Water Steps** ▪ Any future application which proposes the construction of the waterfront square is to demonstrate that the design and construction issues identified in section 3.0 of the Maritime Facilities Report prepared by Royal Haskoning DHV dated 3 April 2014 have been suitably addressed. ▪ In addition to the above, the applicant is to demonstrate that the design of the project has adequately addressed the public liability and safety issues identified in section 3.1 and 4.2 of the Maritime Facilities Report, including to address the following: - To remove/treat hazardous slippery surfaces - Minimise or mitigate potential impacts from vessel wash - The requirement for a seaward safety barrier - The anticipated impacts of sea level rise	A Maritime Impacts Assessment Report has been prepared in accordance with this condition and is provided at Appendix 30.

CONDITION NO.	CONDITION	COMPLIANCE
B10	**Marine Assessment** ▪ Where relevant, future applications are to be supported by a report which addresses the potential impacts on the marine and groundwater environment during construction and operation, including the following matters as identified in sections 7 and 8 of the WBAP Redevelopment: Marine Assessment prepared by Jacobs SKM: - The potential impact/s from construction and operation on the water quality. Mitigation measures should be recommended to minimise the impact of resuspended sediment, gross pollutants and spills and contamination from construction materials - Mitigation measures to minimise the likely colonisation or spread of the *Caulerpa taxifloria* in accordance with the NSW Control Plan for Noxious Marine Alga *Caulerpa taxifloria* (NSW DPI 2009) - Any potential impacts on aquatic biota and terrestrial biota - Any potential ground water impacts	Drainage and groundwater impacts of the development are addressed in the Integrated Water Management Plan at Appendix 15. Marine ecology and terrestrial ecology are addressed in the Marine Ecology and Ecology Assessment at Appendix 31.
B11	**Ground Water** ▪ Any future application/s which has the potential to impact on the ground water is to be accompanied by a detailed site assessment and sampling regime of the local ground water resource. The Office of Water is to be consulted in relation to the results of the site assessment and if required, a Ground Water Environmental Management Plan is to be prepared and submitted with the application.	An assessment of the impact of the development on groundwater is provided in the Integrated Water Management Plan at Appendix 15. The assessment indicates that the proposed development will have negligible impacts on groundwater.
B12	**Survey – Southern Myotis** ▪ Prior to the lodgement of the first DA, a survey is to be undertaken by an appropriately qualified environmental consultant to determine whether the existing buildings currently provide habitat for the Southern Myotis. If relevant, mitigation measures are to be recommended to minimise the potential spread of the Southern Myotis. The results of the survey are to be submitted with the first DA and are to inform the design development.	A survey has been undertaken in accordance with this condition and is included in the Marine Ecology and Ecology Assessment at Appendix 31.
B13	**Sustainability Framework** ▪ All future applications are to demonstrate compliance with the Walsh Bay Arts Precinct Sustainability Framework prepared by Arup dated 24 June 2014	Appendix 13 provides an updated Sustainability Framework for the WBAP. It demonstrates compliance with the original WBAP Sustainability Framework dated June 2014.
B14	**Disabled Access** ▪ All future applications shall be accompanied by an Accessibility Report. As relevant, each application is to demonstrate that the recommendations in Section 6.0 of the Access Report prepared by Morris Goding dated 1 March 2014 have been suitably resolved	An Access Report has been prepared and is provided at Appendix 8. It demonstrates that the proposed works comply or can be made to comply with relevant legislation and standards.

CONDITION NO.	CONDITION	COMPLIANCE
	through the design development.	
B15	**Public Domain Plan** ▪ All future applications which seek approval for works to or the use of the public domain are to include a public domain plan. The plan is to demonstrate compliance with the Urban Design Guidelines prepared in accordance with Condition A10.	A public domain plan is provided at Appendix 5. The plan complies with the Urban Design Guidelines as discussed in Section 8.2 of the EIS.
B16	**Noise Impact Assessment** ▪ Where relevant, future applications are to include a Noise Impact Assessment (NIA) which includes performance based modelling. The NIA is to demonstrate how the recommendations in sections 7.0 and 8.0 of the Noise and Vibration Plan prepared by WSP dated June 2014 have been addressed, as relevant. The NIA is also to demonstrate how compliance can be achieved with the Operational Event Noise Management Plan prepared in accordance with Condition A13.	A Noise Impact Assessment has been prepared in accordance with this condition and is provided at Appendix 23.
B17	**Traffic Impact Assessment** ▪ The future DA for the adaptive re-use of Pier 2/3 shall be accompanied by a Traffic Impact Assessment (TIA). ▪ The mode share targets and recommendations included in sections 5 and 10 of the Traffic Management and Accessibility Report prepared by GTA Consultants are to be addressed in the TIA.	A Transport Impact Assessment has been prepared in accordance with this condition and is provided at Appendix 25.
B18	**Transport Management Plan (TMP)** ▪ All future Category 1 to 4 events at the WBAP are to be undertaken in accordance with a Transport Management Plan. The TMP is to be prepared in consultation with the WBAP Working Group, NSW Police, Council, Transport for NSW and the Transport Management Centre	An Event Transport Management Plan has been prepared in accordance with this condition and is provided at Appendix 27.
B19	**Green Travel Plan and Transport Access Guide** ▪ The first DA for the adaptive reuse of Pier 2/3 or 4/5 shall be accompanied by a Green Travel Plan and a Transport Access Guide prepared by a suitably qualified consultant which can be applied to the entire WBAP and which encourages sustainable transport options.	A Green Travel Plan has been prepared in accordance with this condition and is provided at Appendix 26.
B20	**Event Management Plan** ▪ All future event DAs are to be accompanied by a detailed event management plan prepared in accordance with an approved Operational Plan of Management required under Condition A12. The Plan is to be prepared in consultation with the NSW Police, RMS, Transport for NSW and the City of Sydney and is to comprehensively address the following matters: - Operational transport and traffic management including the use of integrated ticketing and shuttle bus systems when events are being held	An overarching Event Management Plan has been prepared which addresses the requirements of this condition and is provided at Appendix 7.

CONDITION NO.	CONDITION	COMPLIANCE
	at the site - Pedestrian access management, including provision for unimpeded access along the wharf aprons - Noise management, including reactive noise management measures and noise monitoring - Security and staff management - Lighting management - Emergency management and incident response protocols - Alcohol and food management - Occupational health and safety - Infrastructure and services management - Operational waste management - Water management - Community consultation and complaints management	
B21	**Seawater based air conditioning plant** ▪ Any future application which includes the installation of a harbour heat rejection system is to be accompanied by an environmental impact assessment report which includes an assessment of the following: - Seawater abstraction (if any) - Associated water pollution (including thermal pollution) and use of antifoulants *Note: it is recommended that the applicant consult with the NSW EPA prior to the lodgement of any future application which includes a harbour heat rejection system*	An assessment of the environmental impact of the proposed seawater based air conditioning plant has been prepared and is provided at Appendix 39.

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5. Consultation

5.1 Overview

A Communications and Stakeholder Management Plan has been prepared by Elton Consulting in liaison with Infrastructure NSW and Arts NSW which sets out a detailed strategy for communications and engagement to support the next phases of detailed planning, delivery and operation of the WBAP. A copy of the Communications and Stakeholder Management Plan is provided at Appendix 4.

The plan supports both agencies in engagement activities as part of their respective roles in implementing the project, with:

- Arts NSW as client and asset owner, primarily responsible for working with prospective arts tenants and arts organisations
- INSW as agent, assisting with project management, planning and delivery.

The Stage 1 SSDA consent for the WBAP specifies a number of conditions to be addressed in the detailed design as part of the Detailed SSDA. This includes detailed requirements for a Community Consultation Strategy and Complaints Management System – which are addressed in the Communications and Stakeholder Management Plan.

The Plan also responds to the SEARs. Requirements for consultation specify that during preparation of the EIS consultation must be undertaken 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
- Environment Protection Authority
- Roads and Maritime Services
- CBD Coordination Office within Transport for NSW
- Heritage Council of NSW
- Sydney Ports Corporation
- NSW Police
- Fisheries NSW (Department of Primary lndustries)
- Fire and Rescue NSW
- Local Aboriginal Land Council and stakeholders, if relevant.

This section of the EIS describes the consultation process and issues raised by agencies, and identifies where the design of the development has been amended in response to those issues.

5.1.1 Project phases and engagement

The Concept Plan, vision and objectives established the foundations for a robust process of stakeholder and community engagement for the WBAP. Communications and engagement will continue to support all further stages of the project – from Stage 2 SSDA, through to occupation and ongoing activation of the Precinct. The focus of engagement will reflect the specific needs of each phase of the project. The phases are shown in Table 4.

Table 4: Project phases and engagement

PHASE	ENGAGEMENT	ACTIVITIES / TIMEFRAMES / STATUTORY REQUIREMENTS
Extensive Stakeholder Consultation	Extensive targeted meetings and briefings were conducted around the Preliminary Business Case and Master Plan and Final Business Case	2012 / 2013
Public Release of the Walsh Bay Arts Precinct Master Plan / Final Business Case	Public comment on the Master Plan was invited through the Have You Say website, and two targeted information sessions were conducted as part of this phase. This phase considered a number of Concept Design options and established a preferred option. It involved development of an engagement strategy to effectively target key stakeholders and the community (to meet the specific requirements of Treasury and Infrastructure NSW).	Public engagement initiated (November to mid December 2013) NSW Government review of Final Business Case (Mid December 2013)
Concept State Significant Development Application	The preferred option emanating from the Final Business Case was further refined to a Concept Design, enabling a Stage 1 (Concept) SSDA to be submitted in March 2014. Multiple opportunities for engagement around the concept design were available to stakeholders and the community, ahead of and during the public exhibition period for the Stage 1 SSDA (including Final Concept Design). This phase included briefings with arts and cultural groups, businesses, residents, the City of Sydney and government agencies.	Stage 1 SSDA submitted (March 2014) Public exhibition required *Subsequently determined May 2015*
Detailed State Significant Development Application **WE ARE HERE**	Multiple opportunities for engagement around the detailed design and operational approvals will be available to stakeholders and the community during the public exhibition period for the Stage 2 SSDA. Engagement in this phase will focus on: ▪ Updates to the Concept Design / refinement of the Detailed Concept Design ▪ Updates to the project timeframe ▪ Available information about the construction phase and subsequent operational phase	Stage 2 SSDA to be submitted (November 2016) Public exhibition required (November / December 2016)
Construction / Delivery	Engagement in this phase will focus on: ▪ Community relations and communications around construction ▪ Engagement around refinements and modifications to existing approvals, where relevant.	Commencement of works is proposed for 2017, with completion scheduled for 2019 Public notification and exhibition of modifications may be required
Operation / Ongoing activation of the WBAP	As the Precinct moves into operation, the primary focus of engagement will be on community relations and communications. Continuing to be a good neighbour, to engage with new and existing audiences, and to activate the Precinct as Sydney grows – will provide challenges and opportunities for the project into the future.	The public domain and Pier 2/3 is scheduled to open in 2018 and Wharf 4/5 will open in 2019 Notifications for major events may be required

5.1.2 Key stakeholders

A stakeholder matrix is provided In Table 5 that reflects the wide range of stakeholders and various project governance arrangements that are currently in place.

Table 5: Key stakeholders by type

TYPE	KEY STAKEHOLDERS	RELATIONSHIP MANAGER
Elected representatives	▪ Local Member – Alex Greenwich ▪ Federal Member – The Hon Tanya Plibersek MP ▪ Lord Mayor – Clover Moore ▪ City of Sydney Councillors	▪ Joint – INSW and Arts NSW
Media – to manage key messages and to promote the project and related engagement opportunities	▪ The Sydney Morning Herald, The Daily Telegraph, The Australian, The Australian Financial Review ▪ ABC Radio and Television ▪ FBI Community Radio ▪ Local and community press and websites ('Walsh Bay News' newsletter, 'Streets of Barangaroo' publication, walshbay.com.au, barangaroosouth.com.au) ▪ Wider Sydney press and websites ▪ International press and websites (The Guardian 'Culture' section) ▪ Blogs (ArtsHub, The Design Files and others) ▪ Social media (Twitter, Facebook)	▪ Joint – INSW and Arts NSW
DELIVERY PARTNERS		
Owners	▪ Roads and Maritime Services (as land owner of the Walsh Bay Arts Precinct site and lessor of Pier 2/3 and Wharf 4/5) ▪ Arts NSW, Department of Justice (as the asset owner, and the long term head lessee of Pier 2/3) ▪ Infrastructure NSW (as the agent delivering project on behalf of owner)	
WBAP Project Steering Committee	▪ Andrew Cappie-Wood Secretary: Department of Justice (Chair) ▪ Samantha Torres Deputy Secretary: Arts and Culture Cluster Department of Justice (Alternate Chair) ▪ Mary Darwell formerly Executive Director: Arts NSW ▪ Michael Brealey Acting Executive Director: Arts NSW ▪ David Riches: Infrastructure NSW ▪ Peter Watts: Architectural / heritage expertise ▪ Brenna Hobson: Arts expertise ▪ Chum Darvall: Commercial / arts company expertise	▪ ArtsNSW
Statutory Authorities and City Authorities	▪ NSW Department of Planning and Environment (DPE) ▪ Roads and Maritime Services (RMS) ▪ City of Sydney	▪ INSW
Authorities Working Group	▪ Infrastructure NSW ▪ City of Sydney ▪ Office of Environment and Heritage ▪ Transport for NSW ▪ RMS ▪ Environment Protection Authority	▪ Joint – INSW and Arts NSW

TYPE	KEY STAKEHOLDERS	RELATIONSHIP MANAGER
Emergency services	▪ NSW Police ▪ NSW Fire Brigade ▪ Ambulance ▪ Sydney Ports To be engaged in design phase and in review of plans and certification	▪ INSW
Government agencies and bodies	▪ NSW Treasury ▪ Office for Environment and Heritage (OEH) ▪ Heritage Council of NSW (Heritage Branch) ▪ Major Events Coordination Group ▪ Sydney Ports / Port Authority of NSW	▪ Joint – INSW and Arts NSW
Committees	▪ **Design Advisory Committee** > Peter Watts > Peter Poulet > Mary Darwell > Marianna Southwick	▪ INSW
Project team	▪ **Design Team including:** > Tonkin Zulaikha Greer (TZG) > specialist consultants > operations consultants > Sydney Theatre Company and STC Design Team	▪ INSW
Tenants and hirers	▪ **Arts** Tenants **Committee** (General Managers) > Australian Chamber Orchestra (ACO) > Australian Theatre for Young People (ATYP) > Bangarra Dance Theatre > Bell Shakespeare Company > Biennale of Sydney > Gondwana Choirs > Song Company > Sydney Dance Company > Sydney Philharmonia Choirs > Sydney Theatre Company > Sydney Writer's Festival » **Tenant Working Group** (Operational working group) » **Festivals** – Sydney Writer's Festival, Biennale of Sydney, Sydney Festival, Vivid Festival, Sydney Corroboree	▪ ArtsNSW
Existing leaseholders with potential concurrence role	▪ Pier 2/3 stratum holders ▪ Walsh Bay Precinct Association	▪ INSW
Wider arts and cultural community	▪ The Australia Council for the Arts ▪ Arts and cultural institutions – such as the Sydney Opera House, Museum of Contemporary Art, Art Gallery of NSW, Carriageworks ▪ Arts and cultural producers ▪ Producers / organisers of other creative and cultural events consistent with the Precinct governance framework – such as Mercedes Benz Fashion Festival Sydney, maritime events ▪ Wider arts and cultural community including patrons and supporters of resident arts organisations	▪ ArtsNSW

TYPE	KEY STAKEHOLDERS	RELATIONSHIP MANAGER
COMMUNITY STAKEHOLDERS		
Local residential community	▪ Walsh Bay Precinct Association ▪ Manage-Meant, Dynamic Property Services (Strata Managers) ▪ Millers Point, Dawes Point, The Rocks and Walsh Bay Resident Action Group (RAG) ▪ Residents of Walsh Bay (Wharf 6/7), Millers Point, Barangaroo	▪ Joint – INSW and Arts NSW
Local business community	▪ Walsh Bay Arts and Commerce Association ▪ Chambers of Commerce (including Sydney and The Rocks chambers of commerce) ▪ Businesses in Walsh Bay – including businesses in Wharf 8/9 (offices) and the Shore Sheds (ten RMS lessees – restaurants, bars, shops and offices) ▪ Pier 2/3 Strata Management Group ▪ Neighbouring businesses (such as the Sebel Pier One Sydney Hotel)	▪ Joint – INSW and Arts NSW
Visitors	▪ Local visitors / broader Sydney community (including people of all ages from Sydney's inner and outer suburbs) ▪ Interstate visitors ▪ International visitors	▪ INSW

5.2 Community consultation

To date extensive consultation has been undertaken with a wide range of key stakeholders as part of the evolution of WBAP. Community consultation commenced as part of developing the vision for the Precinct in 2012.

Details of the consultation activities, engagement outcomes and letters of support that underpinned the first stages of planning for the Precinct are documented in the Stakeholder Consultation Strategy prepared by Elton Consulting in 2013.

In 2014, detailed community consultation occurred as part of the Stage 1 SSDA process. This included consultation prior to lodgement of the Stage 1 SSDA via a series of stakeholder briefings, and further consultation during the public exhibition period. Details of the consultation activities, engagement outcomes and stakeholder submissions are documented in the Community and Stakeholder Engagement Report prepared by Elton Consulting in 2014.

A Community Information Session and engagement with the local community is being conducted in November / December 2016. The Information Session will be open to all members of the public and will be promoted through a flyer drop to 2,800 homes and businesses in and around Walsh Bay. Meetings are currently scheduled with the following community groups:

- Millers Point Resident Action Group
- Walsh Bay Precinct Association
- Walsh Bay Arts and Commerce Association.

5.3 Stakeholder/ Agency Consultation

To date extensive consultation has been undertaken with a wide range of key stakeholders as part of the evolution of Walsh Bay Arts Precinct, commencing with development of the vision and Master Plan for the Precinct.

Consultation with arts and cultural producers commenced in 2010-11 through the Registrations of Interest (ROI) process for the long term use of Pier 2/3. Consultations with shortlisted arts organisations, further arts and cultural organisations / institutions, and other key stakeholders were undertaken in 2012 to 2013.

The Master Plan for Walsh Bay prepared by the NSW Government Architect (from 2011 to 2013) is consistent with the use of Pier 2/3 for arts and cultural purposes identified in the original Walsh Bay Master Plan in the 1980s, and the Walsh Bay Arts Precinct is identified as a priority arts project for the NSW Government. Consultations with government agencies and authorities have been ongoing from the earliest stages of planning for the Precinct. Arts NSW and its project team consulted with government agencies and authorities around the Master Plan and in developing the Preliminary and Final Business Cases in 2012 and 2013.

Details of the consultation activities, engagement outcomes and letters of support that underpinned the first stages of planning for the Precinct are documented in the Stakeholder Consultation Strategy prepared by Elton Consulting in 2013.

In 2014, detailed consultation occurred as part of the Stage 1 State Significant Development Application process. This included consultation prior to lodgement of the Concept State Significant Development Application via a series of stakeholder briefings, and further consultation during the public exhibition period. Details of the consultation activities, engagement outcomes and stakeholder submissions are documented in the Community and Stakeholder Engagement Report prepared by Elton Consulting in 2014.

In addition, two project health reviews attended by experts in business, the arts, and project delivery, were conducted 2013 and 2015.

More recently, consultation with prospective tenants, government agencies and authorities has been ongoing during the interim period. The latter includes engagement with Roads and Maritime Services, Department Planning and Environment, Destination NSW, Heritage Council of NSW, City of Sydney, Office of Environment and Heritage, and Transport for NSW. The Terms of Reference for the various project governance bodies and stakeholder liaison groups that have been active in this phase are attached. This includes the Walsh Bay Arts Precinct Project Steering Committee, Design Advisory Committee, Authorities Working Group, and Arts Tenants Committee.

Further stakeholder meetings are scheduled for November / December 2016. The outcomes of these further engagement activities will be provided by INSW. Stakeholder meetings are currently scheduled with the following stakeholders / agencies and authorities:

- Arts Tenants Committee
- Authorities Working Group
- Emergency Services (NSW Police, NSW Fire and Rescue, Ports Authority of NSW, Ambulance NSW and Transport for NSW)
- City of Sydney.

5.4 Outcomes of consultation

5.4.1 Key issues raised in stakeholder feedback

To date the WBAP has attracted broad overall support. Benefits associated with realisation of the Precinct range from social and cultural benefits for artists, audiences and the community – through to economic and tourism related benefits for local businesses and the broader economies of Sydney, NSW and Australia.

Key issues raised by stakeholders in the initial phases of planning for the Precinct focused on:

- Noise impacts
- Amenity impacts due to increased levels of visitation, particularly around major events
- Traffic and parking impacts
- Construction impacts
- Specific issues for businesses in Walsh Bay – such as short term impacts on trade during the construction phase; and perceived long term impacts on business viability.

Participants expressed a desire for further opportunities for comment on the plans at the detailed design stage.

5.4.2 Community consultation

The following table summarises the key issues raised by members of the community as part of the consultation process for the Walsh Bay Arts Precinct and related responses. For further detail please refer to the Stakeholder

Consultation Strategy (2013), Community and Stakeholder Engagement Report (2014) and Communications and Stakeholder Management Plan (2016) prepared by Elton Consulting.

Table 6: Key issues raised by community

KEY ISSUES RAISED	RESPONSE
Support for continued use of Walsh Bay as an arts and cultural hub for Greater Sydney	-
Traffic and parking impacts	See Transport Impact Assessment
Improved public transport and pedestrian access to the Precinct and surrounding local area	See Transport Impact Assessment at, Operational Plan of Management and Event Management Plan
Improved signage and wayfinding	See Operational Plan of Management, Event Management Plan, Wayfinding and Signage Strategy
Mitigation of construction impacts	See Communications and Stakeholder Management Plan, Environmental, Construction and Site Management Plan
Amenity impacts arising from operation of the Precinct including noise and visitor impacts (patron volume / movements)	See Noise Impact Assessment, Operational Plan of Management, Event Management Plan
Limits to hours of operation and intensity of activities within the Precinct, particularly relating to large scale events	See Operational Plan of Management, Event Management Plan, Communications and Stakeholder Management Plan
Communications and notifications during the construction and operational phases	See Communications and Stakeholder Management Plan

5.4.3 Stakeholder/agency consultation

The following table summarises the key issues raised by stakeholders as part of the consultation process for the Walsh Bay Arts Precinct and related responses. For further detail please refer to the Stakeholder Consultation Strategy (2013), Community and Stakeholder Engagement Report (2014) and Communications and Stakeholder Management Plan (2016) prepared by Elton Consulting.

Table 7: Issues raised by stakeholders

KEY ISSUES RAISED	RESPONSE
Support for continued use of Walsh Bay as an arts and cultural hub for Greater Sydney	-
Benefits for businesses arising from increased activation of the Precinct	-
Impacts on businesses during construction and operation	See Operational Plan of Management, Communications and Stakeholder Management Plan
Improved public transport and pedestrian access to the Precinct and surrounding local area	See Transport Impact Assessment, Green Travel Plan, Event Transport Management Plan
Management of potential impacts of large scale events within the Precinct	See Operational Plan of Management, Event Management Plan
Management of construction impacts including noise, dust, traffic and site appearance	See Communications and Stakeholder Management Plan, Environmental, Construction and Site Management Plan
Improved signage and wayfinding	See Operational Plan of Management, Event Management Plan, Wayfinding and Signage Strategy

5.4.4 Agency consultation

The following table summarises the key issues raised by agencies and authorities as part of the consultation process for the Walsh Bay Arts Precinct and related responses. For further detail please refer to the Stakeholder Consultation Strategy (2013), Community and Stakeholder Engagement Report (2014) and Communications and Stakeholder Management Plan (2016) prepared by Elton Consulting.

Table 8: Issues raised by agencies

KEY ISSUES RAISED	RESPONSE
Support for continued use of Walsh Bay as an arts and cultural hub for Greater Sydney	-
Consistent visual character throughout the Walsh Bay Arts Precinct / local area	See Design Report See Heritage Impact Statement
Adaptive reuse of the Precinct with minimal impact on heritage fabric	See Heritage Impact Statement
Improved public domain along Hickson Road / Management and maintenance of the public domain	See Design Report, Operational Plan of Management
Improved signage and wayfinding	See Operational Plan of Management, Event Management Plan, Wayfinding and Signage Report
Improved public transport and pedestrian access to the Precinct and surrounding local area	See Transport Impact Assessment, Green Travel Plan, Event Transport Management Plan
Mitigation of amenity impacts during construction of the Precinct (including noise, dust, runoff, construction vehicle movements)	See Noise Impact Assessment, Environmental, Construction and Site Management Plan, Construction, Pedestrian and Traffic Management Plan
Mitigation of amenity impacts during operation of the Precinct (including noise and traffic flows relating to events, noise from services)	See Noise Impact Assessment, Operational Plan of Management, Event Management Plan
Precinct governance and coordination with relevant agencies to support effective management of major events	See Operational Plan of Management, Event Management Plan, Event Transport Management Plan

Further / specific issues raised by agencies and authorities more recently include:

City of Sydney

- Further details of liquor licencing within the Precinct

Department of Primary Industries

- Assessment for compliance with Fish Habitat Management policy

Environment Protection Authority

- Harbour bed disturbance
- Adequacy of contamination assessment of shore side sediments
- Management of demolition and construction waste

Office of Environment and Heritage

- Guidance for Heritage Impact Assessment and Archaeological Assessment and Management Plan
- Opportunities for site interpretation

Sydney Ports / Port Authority of NSW

- Harbour Master approvals for potential seabed disturbance

Transport for NSW

- Guidance for preparing Transport Impact Assessment for construction including cumulative impact assessments, accounting for other large scale transport projects presently underway
- Guidance for Traffic Management Plan during operation including provision for active transport
- Engagement with CBD Coordination Office.

Sydney Water

- Need for an Integrated Water Management Strategy
- Protection of Sydney Water assets during construction and operation.

5.5 Future consultation strategy

Future opportunities for involvement in the detailed design, delivery and operation of the Walsh Bay Arts Precinct by the community and other stakeholders are detailed in the Communications and Stakeholder Management Plan 2016, and outlined below.

5.5.1 Consultation strategy for Stage 2 SSDA

There will be multiple opportunities for engagement around the detailed design and operational approvals. As in the previous phase, engagement activities will be available to stakeholders and the community both ahead of and during the public exhibition period for the Detailed SSDA. Targeted, proactive engagement of key impacted groups will be used to identify and address issues prior to lodgement of the detailed design.

This phase of engagement will continue discussion of the issues identified to date and will also include:

- Proposed updates to the public domain as part of the detailed design for the Precinct
- Proposed timeframes for detailed planning, construction and operation of the Precinct
- Proposed upgrade works to the Sydney Theatre Company's existing facilities (as appropriate).

5.5.2 Consultation strategy for Construction / Delivery (2017-2019)

Engagement in this phase will focus on community relations and communications around the construction process, and engagement around refinements and modifications to existing approvals, where relevant.

Details of the Complaints Management System for Construction are provided in the Plan. It sets out the protocols and procedures that will be in place for the duration of the construction period, to effectively manage complaints received from the community and other stakeholders. During this phase the Place Manager role for the Walsh Bay Arts Precinct would be undertaken by the construction contractor.

5.5.3 Consultation strategy for Operation / Ongoing activation of the WBAP (2018 - Pier 2/3 and 2019 - Wharf 4/5 onwards)

The primary focus of engagement in this phase will be on community relations and communications. Key areas of focus will be strengthening stakeholder relationships within the neighbourhood as a good neighbour, and engaging with new and existing audiences – supporting activation of the Precinct into the future.

The Communications and Stakeholder Management Plan provides details of the complaints management systems for the operational phase of the Walsh Bay Arts Precinct. The protocols and procedures it contains will be in place as part of the launch of the Precinct and its ongoing operation, to effectively manage complaints received from the community and other stakeholders. During this phase the Place Manager role for the Walsh Bay Arts Precinct would be undertaken by INSW through a dedicated precinct manager / event planner.

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6. Project description

6.1 Project overview

The WBAP Stage 2 State Significant Development Application 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 performances spaces, for the ACO, ATYP, SDC, Bell Shakespeare, BDC, 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;
- The construction of new public domain, comprising a public square between Pier 2/3 and Wharf 4/5 for multipurpose use as well as steps down to the waterway;
- 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;
- Use of the precinct for arts festivals, events and pop ups as well as a range of activating uses such as restaurants, cafes and bars;
- Construction works comprising infrastructure upgrades, demolition, hazmat removal and substructure works.

Demolition and architectural plans have been prepared by Tonkin Zulaikha Greer (TZG) and are provided at Appendix 5.

Figure 3: WBAP Ground Floor Plan

6.2 Capital investment value and job creation

WT Partnership has prepared an estimate of the Capital Investment Value (CIV) for the WBAP 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 at Appendix 6.

The estimated CIV for the project is $141,792,735 (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 Stage 2 SSDA (INSW, June 2016), it is anticipated that the project will generate 600 additional jobs during construction and 72 additional jobs during operation.

6.3 Pier 2/3

The proposed changes to Pier 2/3 are outlined below and detailed in the plans at Appendix 5.

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 facilities and offices 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 offices 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 events and festivals including Sydney Writers' Festival and Biennale including venue and commercial hire.

External alterations

External alterations and additions comprising:

- Three new balconies on the western elevation and one balcony 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.

6.4 Wharf 4/5

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

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 office 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 office and reception areas;
  - Improved staff amenities.
- Provision of two new commercial tenancies at ground and mezzanine levels, one at the southern end and one in the centre of the ground level. Future use of these tenancies will be subject to separate development applications;
- Removal of some storey posts and beams to facilitate internal reconfiguration and new uses;
- Provision of public toilets.

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;
- Raising of timber wharf deck adjoining the SDC café and opening of facade with new glazing to activate the waterfront square;
- 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.

6.5 Shore Sheds 4/5

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

- Internal alterations to reconfigure choir spaces, including provision of a large rehearsal space on the ground floor and creation of a mezzanine for choir administration;

- Creation of two new commercial tenancies at ground and mezzanine levels. Future use of these tenancies will be subject to separate development applications;
- Provision of office space at ground level, including an office in the western Shore Shed for use by the Precinct Manager;
- Provision of a waste room for Pier 2/3.

6.6 Waterfront Square

The design of the new Waterfront Square integrates the geometry of the existing wharf aprons with their varied angled shapes and changes of level, all derived from the original loading functions. At the north, the line of the Water Stair continues the alignment of the Breezeway in Pier 2/3, retaining the view of the water from this important gateway. The majority of the Square is set at RL2.1, matching the key entry at Pier 4/5. At either side, raised areas resolve the changes in level to the main Wharf Aprons at RL 3.4.

Overall, the design continues the principles endorsed by the Stage 1 consent, addressing concerns of event functionality, day-to-day use and shading. The forms proposed are inspired by the site itself: by the indented bays and headlands of the Harbour, by the shifting surfaces of the water, but the masts and rigging of the ships that for 150 years berthed in the bay, by the materiality and colours of the heritage structures.

A new layer of carefully-integrated infrastructure enables the Waterfront Square to function for day-to-day occupation, for small ‘pop-up’ events and small and large scale managed events, right up to city-wide celebrations such as New Year’s Eve, Vivid and the Festival of Sydney.

Figure 4: Image of proposed Waterfront Square

6.7 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 structure 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 Walsh Bay Arts Precinct 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.

6.8 Land uses and events

Development consent is sought for the adaptive reuse of the WBAP 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 350 people
- ATYP theatre and rehearsal room accommodating up to 300 people
- Bell Shakespeare rehearsal space for up to 200 people

A large proportion of the ground floor of Pier 2/3 will be retained in its existing ‘raw’ heritage state for events and festivals including Sydney Writers’ Festival and Biennale, although a kitchen will be installed to assist with catering. It will also be available for hire for public and private functions. This space has the capacity to accommodate up to a maximum of 1,500 people. An additional commercial function space is to be provided at the northern end of Level 1 accommodating up to 300 people.

Wharf 4/5

Two new commercial spaces are proposed within Wharf 4/5, one at the southern end and one centrally located mid-pier between the SDC and the BDT tenancies. These spaces are intended to activate the ground floor and apron of Wharf 4/5 and will comprise 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).

No other changes to the uses in Wharf 4/5 are proposed.

Shore Sheds

Shore Sheds 4/5 will be home to the Sydney Philharmonia Choir, Gondwana Choir and Song Company. The Shore Sheds are to be adaptively reused to provide performance and rehearsal spaces for these organisations.

Two new commercial spaces are proposed within Shore Sheds 4/5. Similar to the new commercial spaces proposed within Wharf 4/5, these new commercial tenancies within the Shore Sheds are intended to activate this area 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).

Shore Sheds 4/5 are also proposed to be reconfigured to provide for office space, including the provision of ancillary offices to support the various choirs as well an office for the WBAP Precinct Manager.

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

Events and other uses in the public domain

Events proposed to be held in the WBAP include:

- Arts festivals
- Musical concerts and other performances
- Special events such as New Year's Eve
- State significant events such as Vivid
- Markets
- Open air cinema and theatre
- Food and wine events
- Workshops for dance, choirs, and children's performance
- Performance rehearsals

The framework for the future use of the WBAP public domain is established by Condition A7 of the Stage 1 SSD consent which provides in principle approval to the future use of the Waterfront Square and associated outdoor spaces for events. Condition A7 also identifies the scope and frequency of events that may be held in the public domain. Table 9 also includes examples of the types of events that may be held.

Table 9 Scope of events proposed

CATEGORY	SCOPE OF EVENTS	EXAMPLES
Category 1 **Major Events**	▪ up to 10,000 people ▪ max 4 times per year ▪ must not occur over more than one day ▪ must not occur before 7 am or after midnight on any day, except new year's eve (when the use may occur until 2 am the following day.) ▪ music to be ceased by 11 pm in all cases (with the exception of new year's eve) ▪ set-up/dismantle time for the use must not start earlier than 6 am, or end later than 1 am, on any day, except new year's even when dismantle may occur until 2 am the following day ▪ clean up time for the use must end no later than 2 hours after the use was to stop occurring or may be under- taken the following day	▪ New Year's Eve ▪ Australia Day
Category 2 **Arts and Cultural Festivals**	▪ up to 7,500 people moving through the site at any one time ▪ can occur over consecutive days ▪ max 6 time per year ▪ use must not occur before 7 am or after 12 midnight on any day, including set up/dismantle and clean up time) music to be ceased by 11 pm in all cases	▪ Sydney Writer's Festival ▪ Corroboree ▪ Vivid ▪ Biennale ▪ Kaldor Projects
Category 3 **Community Events**	▪ up to 5,000 people ▪ no limit on number of community events held in a year ▪ can occur over consecutive days ▪ use must not occur before 7 am or after midnight on any day, including set up/dismantle time and clean up ▪ music to cease by 11 pm in all cases ▪ use of localised low output amplified sound system for announcements or for live intimate entertainment only	▪ Arts organisation open days ▪ Community markets ▪ City of Sydney Art and About ▪ ACO Christmas Gala
Category 4 **Private Events**	▪ up to 1,000 people ▪ no limit on number of private events ▪ use must not occur before 7 am or after midnight, including set up/dismantle and clean up time ▪ music to cease by 11 pm in all cases ▪ private event should not restrict or impede public access to public outdoor areas ▪ use of localised low output amplified sound system for live intimate entertainment only	▪ Commercial launches ▪ Exhibition openings ▪ Private functions ▪ Conferences, expos and the like

This Stage 2 SSDA confirms that development consent is now sought for a range of events and cultural activities to be held in the public domain consistent with the above table. A draft Event Management Plan has been prepared which provides further detail on the nature, scale and management of events in the WBAP public domain. A copy of the draft Event Management Plan is provided at Appendix 7.

6.9 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 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.

The existing apron is generally 5.8 metres wide and whilst not strictly in accordance with AS2890.2- 2002 (which requires 6.2 metres for two medium rigid vehicles (MRVs) to pass), would allow two small rigid vehicles (SRVs) to physically pass, noting some localised constraints associated with existing services (e.g. fire hydrant). Any passing movements would need to be undertaken with one vehicle parked hard up against the building or edge of the wharf and the other vehicle at low speed. However, it is noted that at the colonnade, the apron width reduces to approximately four metres wide, with vehicles not able to pass at this location. The width of the apron precludes two MRVs being able to pass each other (or one SRV and one MRV). The available facilities and associated heritage-related constraints are expected to be appropriate for the low service vehicle activity levels.

The existing loading facility on Wharf 4/5 will continue to operate as per its existing arrangement.

Multiple on-site bicycle parking facilities will be provided adjacent to the main entrance to the site and scattered throughout the public domain which will provide parking for 25 bicycles. Shower and change room facilities will be provided as part of each of the arts tenancies.

During major events, it is intended that access to the precinct will be controlled using existing entrances. Clear circulation zones will be marked around the buildings and water's edge.

Further discussion regarding vehicle and pedestrian access is provided in Section 8.8.

6.10 Disabled access

An Access Report has been prepared by Accessibility Solutions (November 2016) and is provided at Appendix 8. The report provides an accessibility review of the adaptive reuse and refurbishment of Pier 2/3, Wharf 4/5 and respective Shore Sheds 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 July 2016.
- 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.

6.11 Wayfinding and signage

The site is accessed by five entrances; one to the west, one to the east, two to the south on Hickson Road and one to the Pottinger Street bridge. While there are a number of entrances into the precinct, wayfinding is not particularly easy for new visitors to the site. The Shore Sheds along the Hickson Road frontage act as a barrier between the street and the waterfront and the laneways from Hickson Road into the precinct are not immediately identifiable. Improved wayfinding and precinct marking will be introduced at key site entries to help pedestrians navigate the precinct.

A Wayfinding and Signage Report has been prepared by Aspect Studio (October 2016) and is provided at Appendix 9. Key recommendations in the report are summarised below:

- The development of a spatial identity for the greater Walsh Bay Precinct should be considered in the establishment of new signage, building signage, directories and wharf side wayfinding;
- The City of Sydney's 'Legible Sydney' wayfinding should be used in the public domain on Hickson Road, side streets and public stairs while a more localised approach should be used on the harbourside and within wharf buildings;
- Precinct and venue naming should be determined in consultation with the City of Sydney for consistency across all wayfinding systems;
- Internal signage should be consistent with the overall palette of external signage, branding, typography, colours and materials. Key internal signage items include tenancy entries, directories, stair and lift access points, services, utility rooms and toilets;
- There is potential to add environmental graphics, signage, lighting and projections to the existing Hickson Road bridges that complement the utilitarian structures, whilst enhancing the precinct with a sense of theatre and arrival especially in the evening;
- The utility and simplicity of existing signage and materials on the wharves should serve as a guide for new building, wharf and pier identification;
- The marine environment needs to be considered in the selection of materials that are long lasting and stable and suitable to the conditions;
- The opportunity for digital panel signs, touch screens and mobile 'apps' for wayfinding and ongoing event information should be explored;
- Wayfinding systems should adhere to best practice international and Australian Standards. The relevant standards are covered in the Building Code of Australia, Aust Roads Pedestrian and Cycle Guidelines and the relevant State and Federal codes for accessibility (DDA);
- There is a range of existing statutory and regulatory signage that can be either replaced or preferably consolidated into new signage systems.

The detailed design of wayfinding and other signage in the precinct will be undertaken in accordance with the recommendations of the Wayfinding and Signage Report.

6.12 BCA and fire safety

A BCA Assessment Report has been prepared by Blackett Maguire + Goldsmith (October 2016), a copy of which is provided at Appendix 10. 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 10.

Table 10 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	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
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 (October 2016). A copy of the report is provided at Appendix 11.

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 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.

It is anticipated that other non-compliances with the DTS Provisions of the BCA may be identified as the design is developed. However, it is considered that there are unlikely to be significant issues that would impact the overall fire strategy concept approach.

6.13 Operational management

The day-to-day management of the WBAP will be undertaken in accordance with the Walsh Bay Arts Precinct Operational Plan of Management, a copy of which is provided at Appendix 12. The purpose of the Operational Plan of Management (OPM) is to ensure that the operation of the WBAP:

- 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.

This OPM is supplemented by an Event Management Plan (EMP), which identifies the operating principles for events held within the precinct. The EMP is provided at Appendix 7.

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

A Precinct Manager will be appointed to oversee the day-to-day management of the precinct. The Precinct Manager will be responsible for coordinating operational matters with the WBAP tenants and approve, monitor and oversee operational activities in consultation with Arts NSW and the Walsh Bay Precinct Association.

The Precinct Manager will also be responsible for progressively developing the overarching Operational Plan of Management into detailed operational programs, policies and procedures.

Further detail regarding the operational management of the WBAP is provided in the OPM at Appendix 12.

6.14 Hours of operation

Table 11 provides the typical hours of operation proposed for the various locations within the WBAP on a day to day basis. Development consent is being sought for the hours of operation as set out in the table.

Table 11: Proposed General Hours of Operation (excluding events)

LOCATIONS	MONDAY - SUNDAY
Waterfront Square and Public Domain	General Access 24 hours to Precinct – open access Use Logistics 0600 – 0200
Arts tenancies	Office 0800 – 1800 Teaching/Rehearsals/Performance 0600 – 0100 Logistics 0600 – 0200
Commercial Spaces 1 and 6 (Pier 2/3)	Office 0800 – 1800 Event/Production Hours 0600 – 0100 Logistics 0600 – 0200
Commercial Spaces 2-5 (Wharf 4/5)	Retail core hours 1000 – 2200 Café/restaurant core hours 0600 – 0100 Logistics 0600 - 0200

No change is proposed to the hours of operation stipulated for events in Condition A10 of the Stage 1 SSDA development consent.

6.15 Licence requirements

An overview of liquor licensing requirements is provided in the Operational Plan of Management (Appendix 12). It should be noted that it is the responsibility of the event organiser to ensure that all statutory requirements are met with respect to the provision of liquor licensing. As such, it will be the responsibility of the respective tenant or event holder to address the provisions of the *Liquor Act 2007* pertaining to the "liquor freeze" matters within the Sydney CBD Entertainment Precinct and any impact on new licences, increases in licensed trading hours and/or licensed areas.

6.16 Sustainability measures

The proposed sustainability measures being considered for the WBAP project are outlined in the Sustainability Report prepared by Arup (October 2016) which is provided at Appendix 13. This report builds on the Sustainability Framework Report (Arup, June 2014) submitted with the Stage 1 SSDA.

The report notes that the WBAP 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 wharfs, which maintain the heritage and history of the site. This also reduces the embodied energy of construction
- Recycled and re-used props for flooring, further reducing waste

A summary of the updated sustainability objectives and initiatives being considered for the WBAP is provided in Table 12. It should be noted that the range of sustainability measures to be adopted in the WBAP will be confirmed during the detailed design phase.

Table 12: 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 ▪ Provide sea water heat rejection cooling system
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 ▪ Remove parking from wharves to reduce oil from storm water runoff ▪ Provision for rainwater tank & infrastructure to pier 2/3 to facilitate later installation of storage tank ▪ Consider solar heating for domestic hot water as a future retrofit
Sustainable materials	▪ Maintain / fix existing heritage façade and structure. ▪ Use opportunity to specific internal materials with low environmental impact.	▪ 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

SUSTAINABILITY ELEMENT	OBJECTIVES	TARGETED SUSTAINABILITY OUTCOMES
	▪ Local and Responsible Sourcing	▪ 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 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. ▪ Large, user-operable windows to increase outdoor air ▪ High Visual Light Transmission (VLT) glazing selection where possible ▪ Space-specific temperature requirements ▪ Consider space heating to commercial arts 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
Operational sustainability	▪ Maintain an operation plan beyond occupancy for ongoing works ▪ Minimize 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

6.17 Utilities

A Utilities Infrastructure Report has been prepared by Arup (October 2016) and is provided at Appendix 14. 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 Walsh Bay Arts 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.

Early indications are that a new electrical substation will be required to reinforce the local electrical utility network in order to supply the development. Negotiations are ongoing with Ausgrid regarding modifications to the feeders and confirm the extent of the local electrical network reinforcement.

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.

6.18 Water management

An Integrated Water Management Plan has been prepared by Jacobs Australia Pty Ltd (October 2016) and is provided at Appendix 15. A summary of the key water management elements for the WBAP is provided below.

Water supply

The WBAP will rely on a mix of potable and non potable water to service the development. As noted in Section 6.17, 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. Provision for a rainwater tank and infrastructure to Pier 2/3 has been made to facilitate the potential installation of a storage tank. Collected rainwater will be treated and distributed via a separate system to flush toilets and urinals and clothes washing machines.

Stormwater and drainage

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

The proposed stormwater concept for the WBAP is discussed in Section 8.14.

Although the opportunity for water sensitive urban design (WSUD) treatments is limited given the nature of the site, two gross pollutant traps (GPTs) are proposed at low points on the Waterfront Square. These will trap sediment and small size litter and will also provide high quality treatment through a cartridge-type filtration mechanism.

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

6.19 Proposed sea-water cooling system

The Walsh Bay Arts Precinct 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.

6.20 Construction staging

This project is to be carried out in two main stages; demolition and construction. The indicative duration of each stage is as follows.

- Demolition – 4 months (approximately 17 weeks)
- Construction – 18 months (approximately 74 weeks).

The project would include the demolition and redevelopment of the internal building fabric, with the external structure to be maintained and improved. The construction works scheduled to be carried out in 22 to 23 months between mid 2017 and mid 2019. An indicative layout of the construction site is shown in Figure 5.

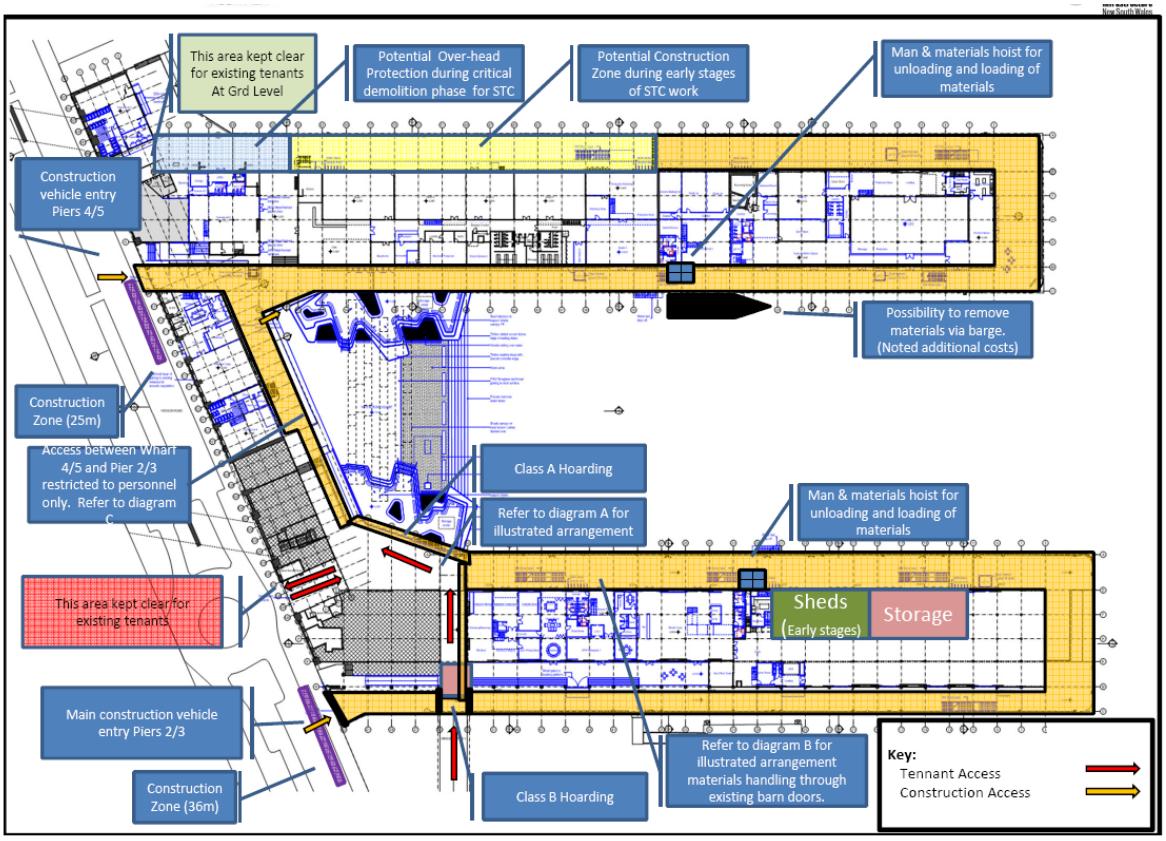

Figure 5: Construction site layout

7. Legislation and Planning Policies

7.1 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.

7.2 Environmental Planning and Assessment Act

7.2.1 EP&A Act Objects

An assessment of the project in relation to the objects of the EP&A Act is provided in Table 13.

Table 13: Assessment of WBAP 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 WBAP 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 a new program of events plus new 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 WBAP is a strategically important government site. The WBAP redevelopment 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 14) 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 WBAP will encourage the provision of land for public purposes through providing for an 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	Community services and facilities will be enhanced through the provision of an expanded and upgraded public domain and associated amenities. The project will also rejuvenate a vital piece of Sydney's waterfront cultural heritage, provide facilities that better enable arts organisations to develop world-class experiences, and create a financially viable operating model for the WBAP and its tenants.
5(a)(v) to encourage the protection of the environment, including the protection and conservation of native animals and plants, including threatened	A detailed Marine Ecology and Ecology Assessment has been prepared for the project. The assessment indicates that potential ecological impacts can be appropriately managed through recommended mitigation measures. Subject to the implementation of these measures the impacts of the project to the marine environment would be acceptable both during construction and operation. Further

OBJECT	ASSESSMENT
species, populations and ecological communities, and their habitats	details are provided in Section 8.12 and Appendix 31.
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	N/A
5(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State	An Authorities Working Group has been established comprising key state agencies and the City of Sydney (refer discussion in Section 5.0). Arts NSW and Infrastructure NSW has been working closely with the Authorities Working Group throughout the design development and environmental assessment for the project. Arts NSW is 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 5.0).

7.2.2 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 WBAP project is valued at over $30 million and is therefore considered to be SSD. A Quantity Surveyor's report confirming the CIV is provided at Appendix 6.

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.

Section 83B of the EP&A Act relates to staged development applications. A staged DA is one that sets out concept proposals for the development of a site, and for which detailed proposals for separate parts of the site are to be the subject of subsequent development applications. This SSDA is a staged DA under the provisions of Section 83B.

7.3 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 14 or discussed in more detail below.

Table 14: Compliance with Environmental Planning Instruments

PLANNING INSTRUMENT	ASSESSMENT
SEPP 55	Refer discussion in Section 8.13.
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 Roads and Maritime Services (formerly Roads and Traffic Authority). As the WBAP 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 7.2.2.
Walsh Bay REP	Refer discussion in Section 7.3.1.
Sydney Harbour Catchment REP	Refer discussion in Section 7.3.2

7.3.1 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 6, Zone 1 applies to the wharves and surrounding precinct on land. Zone 2 applies to the harbour area between the wharves.

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.

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

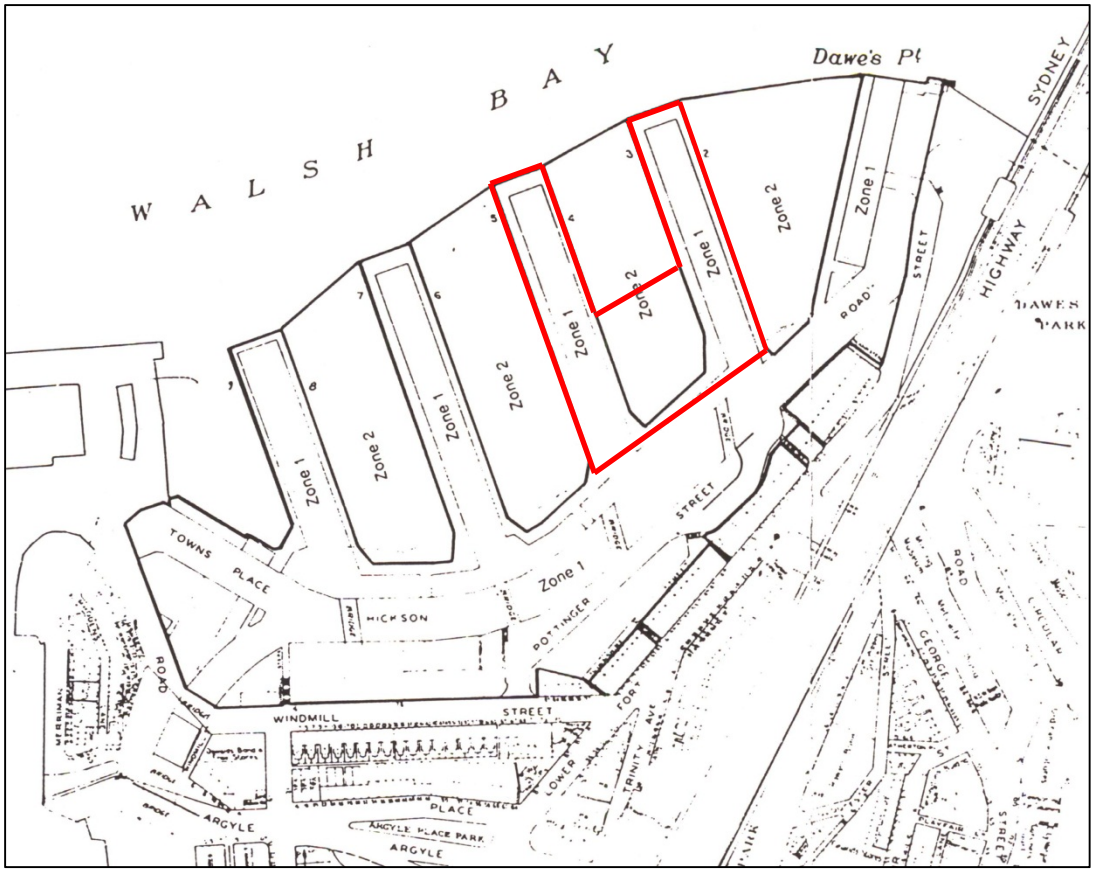

Figure 6 Zoning under Walsh Bay REP

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;
- 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 WBAP are therefore permissible with consent.

The objectives of the Zone 2 are:

(a) to control the use of the waterway between the wharves to ensure that any activities associated with any development are compatible with the commercial shipping and navigational requirements in Sydney Harbour,

(b) to ensure that the Harbour and Harbour foreshore is recognised as a community asset, and

(c) to limit mooring facilities for private vessels used by the lessees and tenants of property in Zone 1.

The WBAP proposal is consistent with these objectives. It will not result in any activities that impact on commercial shipping and navigational requirements in Sydney Harbour. It will greatly enhance public access to

and enjoyment of the Harbour and Harbour foreshore through an expanded and upgraded public domain. In addition, it does not propose new mooring facilities for private vessels.

The Walsh Bay REP identifies uses that are permissible with and without consent in Zone 2 as follows:

> ***Without development consent***
>
> *Aids to navigation, maintenance dredging, maintenance of mooring facilities, mooring of vessels owned by the Maritime Services Board*
>
> ***Only with development consent***
>
> *Boating or waterway access stairs, dredging, emergency vehicle accessways, floating restaurants or entertainment facilities, flora and fauna enclosures, mooring facilities, mooring of fishing and charter vessels, pontoons, public walkways, utility installations (other than gas holders and generating works).*

All other uses are prohibited in Zone 2.

The term "public walkway" is not defined in either the Walsh Bay REP or the *Environmental Planning and Assessment Model Provisions 1980* which are adopted by the REP. However, "public boardwalks" are defined in the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 ("the Sydney Harbour Catchment REP") as follows:

> ***public boardwalk*** *means a decked structure, supported by piers or piles, providing public pedestrian access extending over or beyond the intertidal zone, but does not include a structure that is intended merely to provide direct access to a vessel.*

It is considered that the term public boardwalk and public walkway are interchangeable. The intended design and use of the waterfront square is commensurate with a public boardwalk and therefore the use is permissible with development consent. It is noted that waterway access stairs are also 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 WBAP proposal on the heritage significance of the Walsh Bay Conservation Zone has been undertaken and is discussed in Section 8.3 of this report and in the Heritage Impact Statement provided at Appendix 18.

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

Consultation with the Central Sydney Planning Committee will occur during the exhibition period of the SSDA.

(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 Council regarding the proposal. The Heritage Council will also be formally consulted regarding the Stage 2 SSDA during the public exhibition period and will be able to recommend conditions of consent to the Department of Planning and Environment as part of its submission to the exhibition.

(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

RMS has been actively consulted during the preparation of this SSDA as both the landowner and public authority responsible for the use of the WBAP waterway. RMS has provided its landowner consent for the development to occur.

(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 18.

(e) any urban design guidelines

Condition A10 of the Stage 1 SSDA consent requires the preparation of a detailed set of Urban Design Guidelines for the WBAP. The Urban Design Guidelines have been prepared by TZG and a copy is provided at Appendix 17. A detailed discussion regarding the urban design of the project having regard to the Urban Design Guidelines is provided in Sections 8.1 and 8.2.

(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 WBAP is discussed in Section 8.3. 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 WBAP 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 and will 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 extent of interventions have been minimised and designed having regard to the Heritage and Conservation Guidelines and the Urban Design Guidelines prepared by TZG. Further discussion regarding the built form and urban design impacts are provided in Section 8.1.

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.*

No additional parking is proposed within the WBAP, however, the events that will be hosted within the precinct will generate some traffic and parking requirements. The Transport Impact Assessment in Appendix 25 provides details and mitigation strategies.

(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 7: Cultural Ribbon

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

The proposed upgrade of the public domain, comprising the development of the waterfront square, will greatly improve public access to the wharf aprons and to the foreshore.

(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 areas within the waterway between Pier 2/3 and Wharf 4/5 for mooring per RMS's direction.

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

An Archaeological Assessment and Management Plan has been prepared by Cultural Resources Management and is provided at Appendix 20. Appropriate strategies for conservation and interpretation are recommended and will be adhered to during the construction and operation phases. These plans have been shared with the Heritage Council 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 25 indicates that the proposal will not result in adverse traffic impacts, primarily because parking opportunities within and surrounding this site will be limited although the new parking facility at the Cutaway at Barangaroo Headland has the capacity to absorb much of any additional parking requirements associated with the WBAP. Refer also discussion in Section 8.8.

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 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.

The City of Sydney's 2006 Floor Space and Employment Survey of the CBD indicates that some 18,800 square metres of floorspace at Walsh Bay is being used as commercial office space. This represents around 13 per cent of the total gross floor area at Walsh Bay. The amount of commercial office space at Walsh Bay since that time has not changed significantly. It should be noted that the City's survey is based on how space is actually used which would seem to correspond with the terminology used under clause 17.

Accordingly, the amount of commercial floorspace currently in use in Walsh Bay appears to be well below the 30 per cent cap. While the WBAP will include a small amount of ancillary office space for arts and cultural facilities, this will not represent a significant increase in commercial floor space overall and will not result in an exceedence of the 30 per cent cap.

7.3.2 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 15.

Table 15: 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.	A detailed Marine Ecology and Ecology Assessment has been prepared for the project. The assessment indicates that potential ecological impacts can be appropriately managed through recommended mitigation measures. Subject to the implementation of these measures the impacts of the project to the marine environment would be acceptable both during construction and operation. Further details are provided in Section 8.12 and Appendix 31.
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 proposed development provides for enhanced public access to the foreshore through the expanded public domain. At present, the public areas in this important arts precinct are constrained and do not take full advantage of the site's proximity to the waterfront. The proposed

RELEVANT MATTERS TO BE TAKEN INTO ACCOUNT	ASSESSMENT
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.	extension of the existing apron between Wharf 4/5 and Pier 2/3 will greatly improve the recreational experience and facilitate public access along the foreshore. The impact of the project on sediments is discussed in section 8.13. The assessment indicates that any impacts to the marine environment due to the localised disturbance of marine sediments can be managed subject to appropriate mitigation measures.
Cl 23 Maintenance of a working harbour ▪ foreshore sites should be retained so as to preserve the character and functions of a working harbour ▪ consideration should be given to integrating facilities for maritime activities in any development,	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 WBAP – refer discussion in Section 8.3 and Heritage Impact Statement at Appendix 18.
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.	There will be no adverse impact on the use of the waterway as a result of the WBAP concept. The waterway is already exposed to considerable vessel wash and is generally not used for mooring of small craft. The new overwater structure will have negligible impact on the current interrelationship of the waterway and foreshore uses (refer discussion in Section 8.10 and Appendix 30).
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 WBAP 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 no impact on the foreshore and waterways scenic quality as a result. The changes to the public domain are modest in scale and will enhance rather than detract from the character of the waterways and scenic enjoyment of this important landmark. Refer discussion on visual impact in Section 8.6 and Visual Impact Assessment at Appendix 22.
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 21. 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 8.6.

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.

7.4 Strategic planning policies

The proposal's consistency and compliance with the relevant strategic planning policies is outlined in Table 16 below.

Table 16: Compliance with Policies

POLICY	ASSESSMENT
NSW State Priorities	The NSW State Priorities are: ▪ Creating jobs ▪ 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 WBAP 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 72 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 WBAP 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*

POLICY	ASSESSMENT
	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 Stage 2 SSDA is intended to enable the Government to realise this commitment.
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
Sustainable Sydney 2030	Sustainable Sydney 2030 is a set of goals aimed at making the city as green, global and connected as possible by 2030. The WBAP project is consistent with Sustainable Sydney 2030 as it supports a number of the strategic directions including the creation of a creative and cultural city. Sustainable Sydney 2030 notes that arts and cultural activities are fundamental to liveability, tolerance and quality of life and increasingly to economic development. The WBAP project will greatly enhance the cultural life of the city. A key action of Sustainable Sydney 2030 has been the preparation of the *Creative City and Cultural Policy and Action Plan 2014-2024*. This document acknowledges that Pier 2/3 and Wharf 4/5, along with a number of other major cultural facilities, are integral parts of Sydney's cultural infrastructure. It also notes that these facilities are surrounded by public spaces that could extend the work of the institutions with temporary activities and events, supported by amenities designed to extend the length of time that visitors spend in the area. The WBAP project is consistent with this intent as it will greatly enhance the use of the public domain for cultural purposes and encourage greater visitation.
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 WBAP.
Planning Guidelines for Walking and Cycling/NSW Bike Plan/ Cycle Strategy and Action Plan 2007-2017	The Planning Guidelines for Walking and Cycling provide guidance to land use planners to ensure that walking and cycling improvements are taken into consideration in planning policy and practice. The guidelines provide a walking and cycling focus to the NSW Government's *Integrating Land Use & Transport Planning Policy Package*. The guidelines suggest that *"when making planning instruments, councils are encouraged to integrate relevant state and local policies related to walking and cycling"*. This includes development policies in the DCPs and LEPs that encourage walking and/or cycling that would be considered during the development assessment stage thereby encourage improvements to walking and cycling facilities. The guidelines have since been supported by the City of Sydney's LEP which states a requirement for bicycle parking provision. In response to these requirements, 25 secure parking spaces for staff and approximately 80 visitor parking spaces are provided within WBAP. Showers and lockers are also provided within tenancies.

POLICY	ASSESSMENT
	In addition, the *City of Sydney Cycling Strategy and Action Plan 2007-2017 outlines* the City of Sydney's commitment to making cycling an equal first choice transport mode with along with walking and using public transport. The Strategy sets out the infrastructure requirements to ensure a safer and more comfortable cycling environment and the social initiatives to encourage more people to cycle as a means of ordinary transport. The CoS Cycling Strategy defines infrastructure and social initiatives that will be undertaken by the City over the period 2007-2017. The CoS Cycling Strategy includes identification of missing links in the cycle network and includes a proposed connection between the city, Barangaroo and Walsh Bay. While WBAP does not propose any modifications to Hickson Road, access and circulation supports future cycle network improvements.
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 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 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 WBAP.
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 recently constructed Wynyard Walk which provides direct pedestrian access from Wynyard Station to Kent Street, where bus services to Walsh Bay are provided.
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*

POLICY	ASSESSMENT
	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 WBAP redevelopment would not impact strategic cycling routes between city centres, however would promote their usage with internal bicycle end-of-trip facilities within the site.
Heritage Council Guidelines *Assessing the Significance of Archaeological Sites and Relics*	Refer Heritage Impact Statement at Appendix 18.
Crime Prevention Through Environmental Design Principles	Refer Section 8.16 for discussion

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8. Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the Walsh Bay Arts Precinct 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.

8.1 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 16.

8.1.1 Overview

The built form and urban design strategy for the WBAP 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 conditions that will enable the building to continue to functions as a public performance facility.
- The creation of a vibrant new public realm including a focal, multi-use Waterfront Square.
- The fitout of new event and function spaces to enable cost-effective and flexible use.
- The creation of commercial spaces that will support the activities of the precinct financially and improve visitation numbers and the visitor experience itself.
- Strengthening the precinct's links to Sydney's "Cultural Ribbon" and to the sequence of waterfront 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.
- Carefully modelling crowd flows and fire safety to reduce the impact of egress routes.
- 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, the Wharf Aprons and the new Waterfront Square.

Acknowledging the heritage significance of the Walsh Bay Wharves, the new uses are carefully inserted into the historic containers, 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.

8.1.2 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 which is defined by the new public domain and the Pier 3 and 4 aprons:

Pier 2/3

- ATYP and Bell have a shared foyer facing onto the southern end of the Pier 3 apron. ATYP have their reception at ground floor, while Bell's reception is on the mezzanine level. This will allow ATYP to gather children in the foyer prior to rehearsals, while minimising the impact on Bell's day to day activities.
- The Central Foyer, which gives access to all tenants of Pier 2/3, is accessed from both the Pier 3 apron and the eastern colonnade.
- The 'raw' event space to the north can spill out onto the Wharf 3 apron.
- Stairs to the upper lobby provide access to all of the performance spaces in the upper shed of Pier 2/3.

Wharf 4/5

- SDC retain their existing location, however their cafe will be opened up to better engage with the waterfront square and their workshop reconfigured to provide a new dance studio.
- Bangarra's space is reconfigured so their foyer and function space can better engage with the Pier 4 apron.
- A series of new external stairs and lifts along the length of Wharf 4/5 have been proposed as a part of the STC50 project in order to facilitate better access to STC's bar and theatres.
- The southern entry to Wharf 4/5 is reconfigured to improve the entry sequence to STC and to provide a Welcome Centre for the WBAP
- The Choirs are located in the Shore Sheds with direct access to the waterfront square
- In addition, a range of new commercial tenancies all open into the precinct

Waterfront Square

- The Waterfront Square sits between Wharf 4/5 and Pier 2/3. It creates an active water frontage by spreading a range of activity along the length of the wharves and engaging building users with the outdoor areas

8.1.3 Gateways

The WBAP is accessed via a series of key Gateways which provide eight entrances; 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.

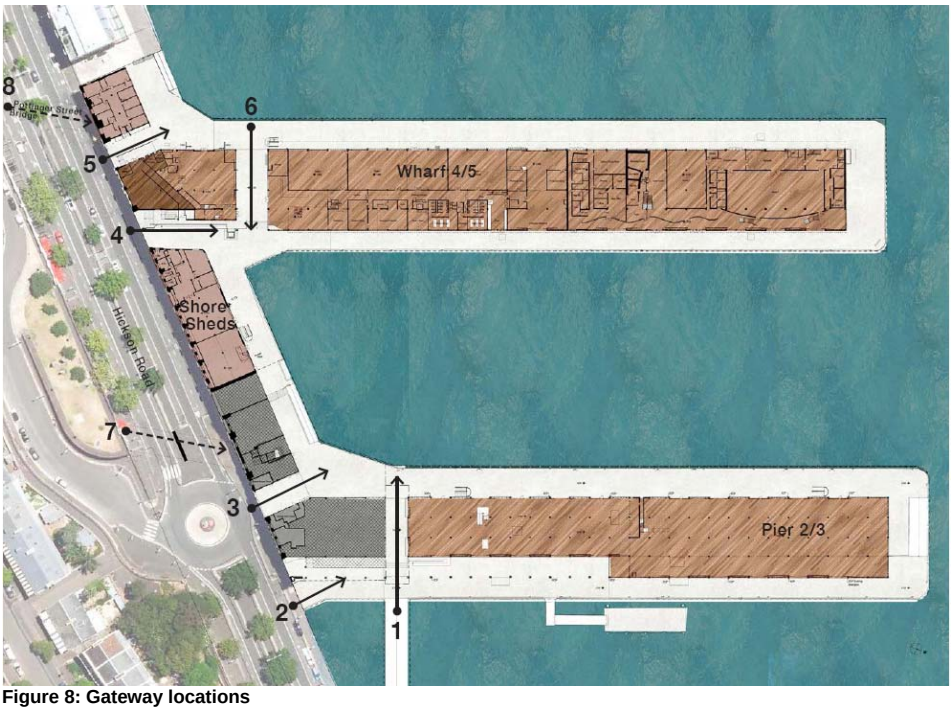


Figure 8: Gateway locations

The Gateway strategy for the WBAP 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.
- Supporting WBAP branding.

The eastern entry to the site (Gateway 1) presents an opportunity to mark the precinct and provide an important visual and ceremonial entry. The existing bridge from Pier 1 visually directs visitors to the precinct and key lobbies in Pier 2/3.

Gateway 2 provides access to the existing Shore Sheds function venue via the existing colonnade and will provide access to the proposed new foyer to Pier 2/3.

The breezeway that forms Gateway 4 is the existing primary gateway for visitors to the SDC, STC and BDC, particularly for visitors arriving at the precinct via taxi or car.

The breezeway that forms Gateway 3 has clear, wide sight lines into the precinct and the public domain, and is an important visual and physical link for visitors approaching the precinct from the upper Rocks via Pottinger Street and entrance (7).

The new loading and servicing strategy for Wharf 4/5 and Pier 2/3 proposes the removal of the existing boom gates and vehicle infrastructure from entries (3) and (4), and replacement with removable bollards to improve the address of these entries.

The breezeway that forms Gateway 6 connects the site to the rest of Walsh Bay including the waterfront commercial restaurants and bars located in the Shore Sheds to the west of the site.

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.

8.1.4 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’ event space is framed by an existing opening in the original timber screen. Lifts and a stair provide access to the upper foyer. The ‘raw’ event 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.

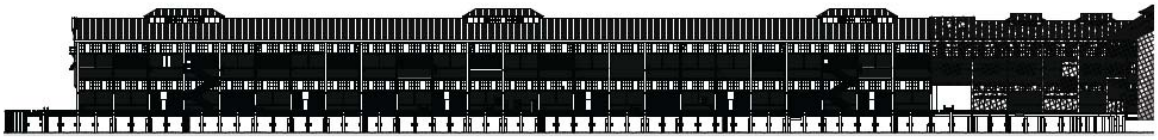


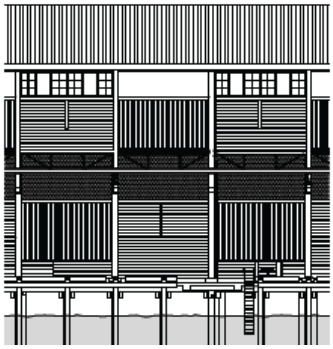
Figure 9: Pier 2/3 existing west elevation

Figure 10: Pier 2/3 proposed west elevation

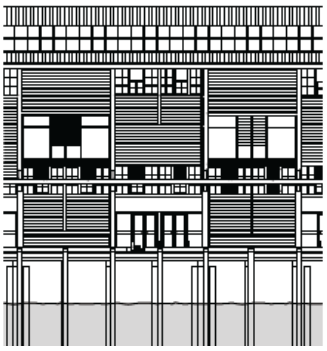
The gantry balconies have been designed to reference the travelling gantries that once moved along the wharf aprons. Combined with required access stairs, these create a sculptural contemporary architectural intervention which reads distinctly from the original building fabric. A similar approach has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



Pier 2/3 eastern elevation detail



Wharf 4/5 eastern elevation detail

The locations of the stairs and balconies have been modified since the Stage 1 SSDA consent in order to better relate to internal planning arrangements. The principle responding to the checkerboard rhythm of the facade, has however been adhered to.

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 ACOs offices and the 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 acoustics and mechanical plant associated with them. 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.

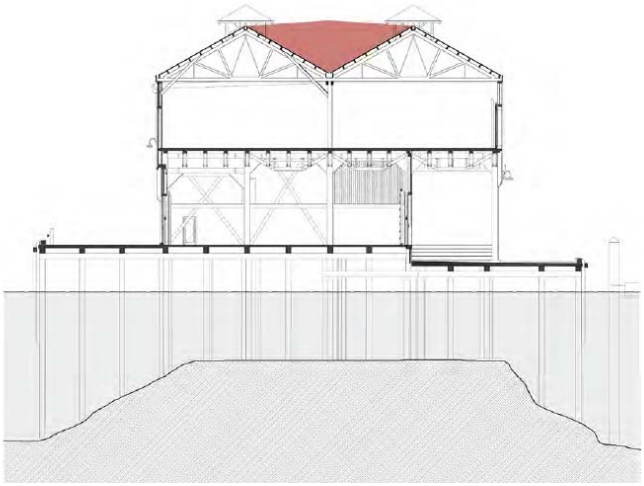


Figure 11: Section through raised section of roof

Figure 12: Comparison of existing roof profile (left photo) and proposed roof alterations (right photo)

As can be seen from Figure 12, 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 8.3 and 8.6 below.

Wharf 4/5

Externally, the design for Pier 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, the refurbishment works are fairly consistent with the Stage 1 DA consent. Three occupancies are proposed, each accessed separately from the wharf aprons, as well as public toilets 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.

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 as per the Stage 1 consent, and the

remaining spaces reconfigured to provide better foyer exhibition space and a new function room at the north end of the Pier, opening out onto the wharf apron.

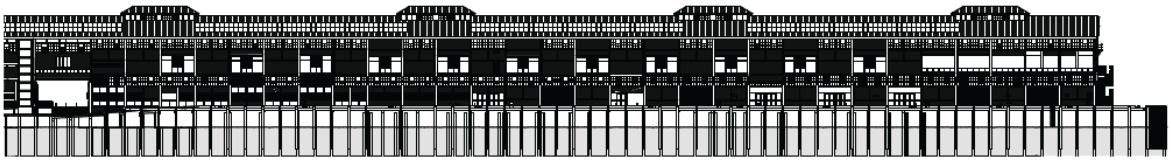


Figure 13: Wharf 4/5 existing east elevation

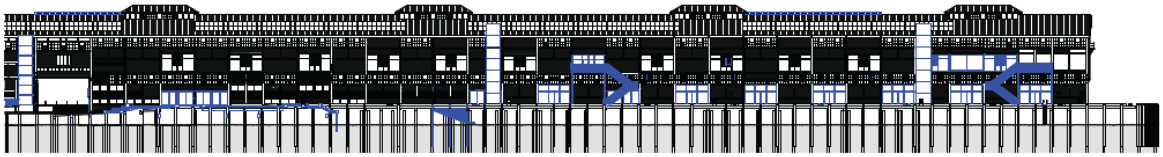


Figure 14: Wharf 4/5 proposed east elevation

Shore sheds

Work to the Shore Sheds is confined to those related to Wharf 4/5, the Shore Sheds to Pier 2/3 being occupied under separate leases and not forming part of this project. The work proposed to the Shore Sheds is mainly internal, and will have minimal impact on the external heritage fabric.

The significant brick and stone facades to Hickson Road will be conserved. New work is limited to the reconstruction of the entry stairs to Wharf 4/5, and removal of the existing roller shutter and construction of a new glass entry to the Choirs tenancy in the 4/5 Shore Shed. New gateway identification and tenant and precinct signage is proposed to be developed in accordance with the Signage and Wayfinding Strategy

In summary, the design for the WBAP 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 18):

> *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.*

8.2 Public domain

The following discussion regarding public domain is drawn from the SSDA Design Report prepared by TZG provided at Appendix 16 and drawings prepared by McGregor Coxall provided at Appendix 5.

Urban Design Guidelines have also been prepared in accordance with Condition A10 of the Stage 1 SSDA consent and are provided at Appendix 17.

8.2.1 Public domain strategies

Seven key public domain strategies have been established, based on the public domain goals, to drive the design development of the project. These are as follows:

- **Improve external identity and arrival experience** - creating a unique and legible arrival experience from the adjacent streets and breezeways that draws visitors into the space and responds sensitively to the industrial and heritage character.
- **Create an iconic 'destination' in the city** – creating an iconic and identifiable public space in the city that reflects the exceptional qualities of its tenants and responds to its identifiable industrial and heritage context.
- **Create a holistically considered public domain** - establishing a holistically considered public domain strategy that balances the complex working and performative requirements of the precinct with an active and engaged pedestrian environment.

- **Ensure tenants play a role in the design and use of the space** - establishing a shared vision that reflects a comprehensive understanding of how to maximise the use of the public domain for all stakeholders and their associated activities.
- **Explore a multidimensional use of space in the public domain** - creating a public domain that engages with all the dimensions of the space including the existing and proposed openings, views, vertical circulation of the space and the relationship of the public domain and the water.
- **Provide an appropriate response to the microclimate and environment** - developing a holistic response to the microclimate requirements that adds to the identity of the precinct and allows for a range of active and inactive uses throughout all seasons and times of the day.
- **Ensure the design supports a range of uses, events and performance types** - establishing a highly adaptable spatial response for the public domain that maximises its usability for a broad range of uses from large scale events to intimate performances, art installations and passive recreation.

Figure 15: Waterfront square image

8.2.2 Public domain design

The public domain will be characterised by the following design layers (locations shown in Figure 16):

1. Wayfinding and precinct marking at key precinct entries
2. A central, flexible space within the Waterfront Square will allow for multi-purpose activities and interactions, it consists of a new decking structure and grassed hangout space.
3. Generously scaled steps give greater connectivity between the central gathering space and the water.
4. The waterside edge of the central square will have provisions for bumping in a large scale screen for film events.
5. The spaces to the side of the central area “The Wings” exploit the level changes between the building aprons and the central square to create a variety of platforms that will provide a spill out space from nearby food and beverage outlets as well as both seating and staged events along with small scale performance exhibitions and installations to occur.

6. A unique netting structure further breaks down the scale of The Wings offering informal seating and a greater connectivity to the water below.
7. Shading to both The Wings and the central square will be provided by a soft, colourful, linear shade structure floating above the space using a catenary system. A flexible lighting system for the Waterfront Square will be incorporated within the catenary system supporting the shade structure.
8. Existing leased areas for existing food and beverage outlets will be retained.
9. The existing eastern ramp connecting the Pier 2/3 apron to the Shore Shed apron will be widened to facilitate vehicle movement and assist with event mode operations.

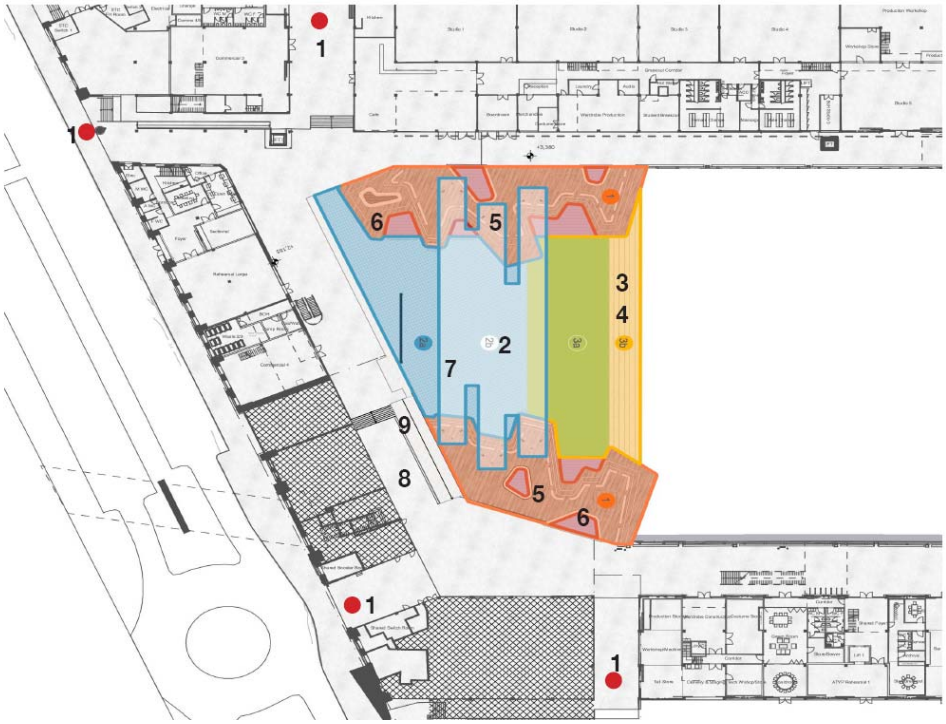


Figure 16 Public domain key spaces

Additional elements will include:

- Fixable and movable, urban scale umbrellas will be used to provide more intimate spaces and supplement the linear shade structure.
- Permanent seating is provided within the level changes to The Wings and temporary seating in the form of café style tables and chairs for the food and beverage outlets and large scale colourful bean bags across the Waterfront Square.
- Bicycle parking will be provided adjacent to primary building entrances.
- Pop-up and temporary activity opportunities to be located along wharf aprons to further activate and connect the precinct.

8.2.3 Modes of use

The public realm for the WBAP will provide an everyday hangout space as well as promote opportunities for performance, display and community events. Its design will allow for flexibility in use and configuration, with a strong emphasis on curation and diversity of cultural programming.

In day to day mode, the Waterfront Square will be a generous suntrap, with a comfortable lawn area edged with broad decking steps which engage with the water. The Wings provide outdoor dining opportunities adjacent to the cafes and restaurants and the terrace structure allows for both informal gathering and events. Large scale colourful bean bags create comfortable and intimate gathering spaces, by providing temporary seating that can be removed during event mode to allow for maximum flexibility.

During event and performance modes, the square can be configured in a myriad of ways, from the intimate to the large scale. The Waterfront Square sits at the same level as the building apron in front of the shore sheds allowing for easy bump in and bump out operations. Access to the precinct can be controlled using existing entrances with clear circulation zones maintained around the building aprons.

Table 17: Waterfront Square Modes of use

Daily Use	Event Use
▪ Occupation of platforms on The Wings and water steps, sitting on the lawn, hanging out on the tensile netting and large scale bean bags. ▪ Sun protection and shade provided by overhead shade structure and temporary umbrellas in fixings located around the site. ▪ Examples in the public space: outdoor recreation, sunbaking, dining, kayaking, lounging, swimming, dining. ▪ Examples on public space edge: mixed use retail, restaurants, cafes and bars.	▪ Additional temporary seating and bleachers as required. ▪ Temporary stage and associated infrastructure (eg. lighting, sound, rigging) erected as required. ▪ Multiple stage and audience configurations. ▪ Possibility to float in additional, temporary, water-based stage, depending on performance requirements. ▪ Examples include art exhibitions, community events, pop ups, arts festivals, outdoor cinemas, outdoor performances.

8.2.4 Urban design guidelines

Urban Design Guidelines have been prepared to guide the detailed design of the public domain. A copy of the Urban Design Guidelines is provided at Appendix 17. These guidelines also respond to the requirements of Condition A10 of the Stage 1 SSDA development consent.

The Urban Design Guidelines set out the functional requirements of the public domain relating to crowd flow, lighting levels, edge protection, egress from water, equal access, CPTED, event infrastructure, and shelter and shade. The Urban Design Guidelines have provided the overall design framework for the public domain and will continue to guide its detailed design.

Specific guidelines are included the document relating to the following:

Defining the public realm

All design development and management plans for the Walsh Bay Arts Precinct should ensure that new and existing public spaces are maintained for public use. This includes but is not limited to the following:

1. *A design which clearly demarcates privately leased space from new public space. Privately leased spaces should be designed to enhance the activity and vibrancy of the public domain, though clear visual engagement, yet without spatial intrusion.*
2. *Develop a strategy which cleverly walks the line between activation of space and the proliferation of ad hoc furniture and structures. The role of a creative precinct is to provide the flexibility for spontaneity to offer in the public domain. Imposing strict furniture and structure guidelines can sometimes unintentionally deter and limit this type of vibrancy. However, no control of the extent and type of furniture can also result in an ad-hoc and incoherent public domain. To allow for freedom and creativity yet control the potential for an over proliferation of furniture and structures in the new public space and adjacent aprons all furniture and spatial layouts by tenants should be reviewed and approved by the landlord.*

Paving

Existing wharf aprons

- *These are to remain concrete as existing, with repair as required.*
- *New extensions, stairs and ramps should match this finish, with the new work distinguishable from the old by its lack of patina.*
- *The theatre walk plaques should be retained and incorporated as part of the pier apron design.*

New decking

- *New Decking can be timber or fibreglass reinforced plastic (FRP), clearly new to distinguish it from the original wharf aprons.*

Lighting

Lighting should comply with both the Lighting Strategy and the Wayfinding and Signage Strategy. Lighting should be sensitive to the industrial context, ensure CPTD compliance and should not be over lit to minimise potential light pollution.

Lighting will preferably be fixed from adjoining structures, avoiding pole-top lighting where possible, acknowledging that the waterfront square may require some pole mounted infrastructure to cater for large events.

Urban furniture

Any furniture, including bike racks, along Hickson Road should work with the standard City of Sydney guidelines for streets.

Once you pass though the breezeways and into the precinct furniture should be a clear visual departure from this aesthetic.

- *Umbrellas & awnings. These support the public domain, and should respond to the colour palette utilised in the public space.*
- *Awnings/Entry Canopies: Any static awnings should be consistent and their design sensitive to the industrial and heritage context.*
- *Public seating should be playful, industrial furniture sympathetic to heritage character, and fixed to avoid vandalism.*
- *Bike racks should be provided to code close to Hickson Road to encouraged cycling to the precinct. Cycling along the wharf aprons is not permitted.*

Commercial area furniture

To ensure the creative flexibility of tenants yet prevent an over cluttering and inappropriate selection of outdoor furniture, all cafe, bar and restaurant furniture must be reviewed and approved by the landlord.

Guidelines are also provided on signage and wayfinding as well as event infrastructure.

8.3 Heritage

A Heritage Impact Statement (HIS) for the WBAP has been prepared by Tropman and Tropman Architects and is provided at Appendix 18. The purpose of the HIS is to provide an assessment of the heritage impacts of the Stage 2 SSDA. The key elements and findings of the HIS are summarised below.

8.3.1 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.

8.3.2 Regulatory and policy context

The following statutory heritage listings relate to the WBAP:

- 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.

8.3.3 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 18.

Table 18: 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 - 7 on First Floor Level Warf 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	Nil / minimal negative effect	Minimise fixings where possible. Significant building fabric and

DESIGN PROPOSAL	POSITIVE EFFECT	NEGATIVE EFFECT	RECOMMENDATIONS
	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		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 standards.	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 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 events and festivals including Sydney Writers’ Festival and Biennale including venue and commercial	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.

DESIGN PROPOSAL	POSITIVE EFFECT	NEGATIVE EFFECT	RECOMMENDATIONS
hire.			
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.
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 WBAP.	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 Wharfs 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	This operation is necessary to create additional space in height,	Minor impact. In context of the size of the structures, this is a small compensation	All original and early fabric must be appropriately protected during construction and subsequently

DESIGN PROPOSAL	POSITIVE EFFECT	NEGATIVE EFFECT	RECOMMENDATIONS
to accommodate new performance spaces and associated structural modifications including truss strengthening	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	which will adequately accommodate current and foreseeable future demands on the place. This is demonstrated by the visual impact analysis.	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.
Public domain	The current design of the public domain has a strong distinction between the existent Wharfs and the addition, as an independent element but well connected with the surrounding and the original idea of the bay. The modern materials and colours mark the distinction to the heritage buildings. It is at the water level, so it doesn't impede or obstruct any vistas or views of the site, but it creates a new viewpoint to admire the existing Wharfs.		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*** *however it was the conclusion of the Design 5 report that this style of roof was relatively inconspicuous when viewed from key vantage points and vistas.* [NB: References to the Design 5 report refer to the Heritage Impact Assessment (Design 5, June 2014) submitted with the Walsh Bay Arts Precinct Stage 1 SSDA.]
- ***Roof plant rooms*** *on the Pier 4/5* [Wharf 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 recommended by Design 5*
- ***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 **wharf Apron and performance spaces** are designed in accordance with the original approved proposal and take cognisance of the original wharf layout. These spaces are required to address the life safety needs of the public and comply to those regulations as a priority. The original outline and form of the wharf decks have been interpreted in the design*
- *The **Structural solutions** and removal of heritage fabric have been prepared in a similar manner as described in the Design 5 report.*
- *The **large scale spans** in both wharf buildings are treated similarly and there is a unity in the structural solutions. The impact is acknowledged by Design 5 as being significant to the Exceptional heritage fabric but necessary to achieve the outcomes for the WBAP.*
- *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 a structural elements **where in the case of Pier 4/5 STC repositioned back three columns where was removed.***
- ***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. This is in order to comply with the directives in the Design 5 report. The design has extended the area of the raised roof section however it was the conclusion of the Design 5 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 and the Design 5 report recommendations.*

8.3.4 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 18.

8.3.5 Stage 1 SSDA conditions of consent relating to heritage

The Stage 1 SSDA requires the following heritage matters be addressed:

- **Condition A11 Interpretation Plan - Moveable Heritage**

  An Interpretation Plan for Moveable Heritage has been prepared by Tropman and Tropman Architects (November 2016) and is provided at Appendix 19.

- **Condition B2 Heritage Requirements for all Future Applications**

  Addressed in the Tropman and Tropman HIS and as otherwise outlined in this section.

- **Condition B4 Archival Recording**

  Archival recording of the WBAP has been completed and is appended to the Heritage Impact Statement at Appendix 18.

- **Condition B5 Heritage and Archaeology – Waterfront Square**

  A Maritime Archaeological Assessment and Management Plan has been prepared by Cosmos Archaeology Pty Ltd, a copy of which is provided at Appendix 21. Maritime archaeology is addressed in Section 8.5 below.

- **Condition B6 Design of the Performance Space**

  Addressed in Section 7.3.2 of the Tropman and Tropman HIS.

- **Condition B7 Roof Penetrations – Pier 2/3: ACO Auditorium**

  Addressed in Tropman and Tropman HIS.

8.4 Archaeology

An Archaeological Assessment for the WBAP has been prepared by Cultural Resources Management (CRM) and is provided at Appendix 20. The work addresses both historic period archaeology and Aboriginal archaeology. Maritime archaeological resources are assessed in a separate report, as discussed in Section 8.5. The key elements and findings of the CRM Archaeological Assessment are summarised below.

8.4.1 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 WBAP 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

8.4.2 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:

<u>Aboriginal Archaeological Resources</u>

- 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

8.4.3 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.

8.4.4 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.

8.4.5 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 WBAP 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 WBAP 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.

8.4.6 Impact assessment

Most works for the redevelopment of Pier 2/3, Wharf 4/5 and the new waterfront square 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 principal impacts to sub-surface areas will be associated with the construction of the new public square. These works are more likely to impact maritime archaeological resources (refer discussion in Section 8.5).

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

8.4.7 Mitigation measures

<u>Aboriginal Archaeology</u>

- 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.

<u>Historic Period Archaeology</u>

- 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

8.5 Maritime archaeology

A Maritime Archaeological Assessment and Management Plan (MAAMP) has been prepared by Cosmos Archaeology and is provided at Appendix 21. The key objective of the report is to:

> *Prepare a Maritime Archaeological Assessment and Management Plan for the waterfront square area between Pier 2/3 and Wharf 4/5 to satisfy the Stage 2 SEARs for Heritage and Archaeology, Stage 1 Condition B5 of the Development Consent and items 9.2.1.2 to 9.2.1.5 of the Tropman and Tropman CMP Policy.*

The key elements and findings of the MAAMP are summarised below.

8.5.1 Methodology

The methodology for the MAAMP involved:

- Preparing a history of maritime infrastructure constructed at WBAP, including known and potential features present between Pier 2/3 and Wharf 4/5, using past heritage reports and additional historic research. Also review remote sensing data and identify any anomalies of potential cultural heritage significance.
- Conducting a maritime archaeological visual dive survey within the waterfront square area to identify exposed archaeological features and relics and assess the potential for underwater archaeological remains elsewhere.
- Determining the archaeological potential of the area and preparing statements of significance for all identified heritage items, in the form of archaeological remains, between Pier 2/3 and Wharf 4/5**Error! Reference source not found.**.
- Identifying heritage impacts arising from the proposed development.
- Preparing mitigation measures and management guidelines for identified underwater archaeological remains, including advice on pile locations and the construction of the waterfront square.

8.5.2 Archaeological potential

The history of Walsh Bay is associated with the development of the shipping industry and construction of wharves. As maritime trade grew and larger vessels were entering the harbour, larger wharves and facilities were required. This led to the demolition and redevelopment of wharves in Walsh Bay.

It is believed that any capital dredging that took place within the study area (Phase 4 – 1900 to present) impacted *in situ* remains associated with the earlier phases (Phases 1 to 3 1788-1900) but is unlikely to have completely removed them. This is because Walsh Bay was relatively deep for shipping in the early 20th century and would not have required substantial deepening within the study area. Some deepening at the berths would have occurred as vessels became larger throughout the 20th century. This would have resulted in further impacts to the underwater archaeological remains associated with the earlier phases.

Underwater archaeological remains were identified within the study area through historical research and an underwater diver survey. The assessed significance and predicted density of these remains are detailed in the Table 19.

Table 19: Assessment of Underwater Archaeological Remains

Identified Underwater Archaeological Remains	Predicted Density	Significance
• Cultural deposits prior to wharf development	Negligible – higher densities towards the southern part of the study area	Not assessed
• Wharf elements from Pitman's Wharf (later Alger's Wharf) • Cultural deposits from Pitman's Wharf (later Alger's Wharf) and/or moored vessels	Low – higher densities within the footprint of Pitman's Wharf decreasing with distance from the wharf. Also lower densities in the berths of Pier 3 and Wharf 4.	State significance
• Wharf elements from Hoffnung's Wharf (later Parbury's Wharf 3) • Cultural deposits from Hoffnung's Wharf (later Parbury's Wharf 3) and/or moored vessels	Low to medium – higher densities within the footprint of Hoffnung's Wharf decreasing with distance from the wharf. Also lower densities in the berths of Pier 3 and Wharf 4.	State significance
• Wharf elements from Pier 2/3 and Wharf 4/5 during the operational years of the wharves until the 1970s • Cultural deposits from Pier 2/3 and Wharf 4/5 during the operational years of the wharves until the 1970s	Medium – higher densities from the final operational years closer to Pier 3, Wharf 4 and the timber apron linking the two. Lower densities from early and middle years of operation due to dredging.	Local Significance
• Shipwreck material from the tug *Undine*	Low – higher towards Wharf 4 although the exact location of the wrecking event is not known.	Local significance

8.5.3 Potential impact

At the time of writing, it is understood that the design and construction of the square will require the placement of piles in the seabed and that no dredging or reclamation will take place. The detailed design for the piling of the waterfront square will be in part guided by the MAAMP.

The development of the waterfront square has been presumed to impact – currently only limited to piling – on identified underwater archaeological remains which can provide information not available in the historic record. This includes wharf construction and the life of workers from the 19th century up until the 1970s. The significance of these remains was assessed as follows:

- Wharves and cultural deposits from the 19th century to early 20th century have been assessed as having State significance; and,
- Remains of the tug Undine and cultural deposits of the 1970s era have been assessed as having Local significance.

Both bathymetric survey data and an underwater inspection have not been able to conclusively locate any underwater archaeological remains associated with wharves and cultural deposits from the 19th century to early 20th century. It is almost certain that any such remains have been buried by accumulated silt. Intensive excavation and surveying would be required to identify the specific location of these remains. The densities of remains have been assessed as being low to medium.

Based on the indicative information supplied concerning the method and extent of piling, it is assessed that the proposed works will have a limited impact to the seabed within the study area and a minor impact to the cultural heritage significance of the underwater archaeological remains of wharf elements and cultural deposits, while also having a potential, albeit remote, possibility of moderate impact to the remains of the Undine (Table 2020).

Table 20: Potential impact to identified underwater archaeological remains.

Identified Underwater Archaeological Remains	Likelihood of Impact	Potential Scale of Impact
• Cultural deposits prior to wharf development	Very unlikely	Minor
• Wharf elements from Pitman's Wharf (later Alger's Wharf) • Cultural deposits from Pitman's Wharf (later Alger's Wharf) and/or moored vessels	Unlikely	Minor, with lessening scale of impact in the berths of Pier 3 and Wharf 4
• Wharf elements from Hoffnung's Wharf (later Parbury's Wharf 3) • Cultural deposits from Hoffnung's Wharf (later Parbury's Wharf 3) and/or moored vessels	Likely	Minor, with lessening scale of impact in the berths of Pier 3 and Wharf 4

Identified Underwater Archaeological Remains	Likelihood of Impact	Potential Scale of Impact
• Wharf elements from Pier 2/3 and Wharf 4/5 during the operational years of the wharves until the 1970s • Cultural deposits from Pier 2/3 and Wharf 4/5 during the operational years of the wharves until the 1970s	Very likely	Minor
• Shipwreck material from the tug *Undine*	Remote	Moderate

Based on the available information of the proposed works, the proposed seabed disturbances – limited to relatively low density piling – has a potential minor impact to the cultural heritage significance of the identified underwater archaeological remains, even in areas where there is a predicted higher density of such remains. As such, it is believed that an intensive pre-construction programme of archaeological excavation is not justified. Instead, an archaeological monitoring and recording programme is recommended to take place during the course of the piling and during any other direct impacts to the seabed for future developments. This option would include the recording of any underwater archaeological remains disturbed and raised by the piling works or other direct impacts in order to retain any information provided by the underwater archaeological remains in regards to wharf construction, maintenance, demolition and working life on the wharves in the 19th century up until the 1970s.

It has been assessed that the indicative plan for piling and impacts to the seabed for the proposed waterfront square would have a minor impact on the significance of identified underwater archaeological remains. As such, the proposed piling program is assessed as an acceptable impact. This impact would be reduced by an archaeological monitoring and recording programme.

8.5.4 Mitigation measures

The following mitigation measures are recommended:

<u>For Detailed Design of Proposed Works</u>

- Limit the number and size of piles to reduce the physical footprint of the development upon the seabed;
- Dredging works should not take place if possible;
- Reclamation or deposition of sediment on the seabed is acceptable;
- A number of identified underwater archaeological remains have been identified in this Maritime Archaeological Assessment and Management Plan. When available, the detailed engineering subsurface works, including piling and any other services which may affect the sea floor in the waterfront square area, should be examined by a qualified maritime archaeologist in accordance with the Heritage Branch Guidelines to review the potential impact on the underwater archaeological remains identified in this report. An Archaeological Research Design and Method report should be prepared by a qualified maritime archaeologist in accordance with the Heritage Branch Guidelines prior to any construction works proceeding. This report will outline further work that may need to be undertaken such as, but not limited to:
  - Targeted remote sensing surveys;
  - Dive inspection(s) of a particular areas;
  - Archaeological excavation, and/or;
  - Archaeological monitoring during construction.
- There is no requirement to obtain permits under the Section 89J(2) of the EP&A Act as it is a State significant development.

<u>For Mitigation During Development</u>

Mitigation measures are to be presented in detail in the Archaeological Research Design and Method report to be implemented during the construction phase of the Development. The measures are likely to include but are not limited to:

- Contractors on site are to be given a Heritage Induction in order for them to be aware of the identified underwater archaeological remains within the works area identify possible relics;

- Engage a suitably qualified maritime archaeologist to monitor works if piling or other impacts to the seabed are to take place. Monitoring may be done on site or remotely if workers are fully briefed to identify possible relics;
- Engage a suitably qualified maritime archaeologist to be on site to monitor works if any dredging is to take place;
- Any cultural remains that may be relics should be recorded in detail by a suitably qualified maritime archaeologist, and;
- If a concentration of relics is discovered, works should stop and the archaeologist should have the opportunity to conduct a dive inspection of the area to record the site in detail prior to works commencing.

For Interpretation of Heritage

- Historic plans of Walsh Bay showing old wharf structures would be useful in the interpretation of the changing coastline of Walsh Bay due to changing shipping activity and demands; and,
- Any relics recovered as part of proposed developments could be preserved and displayed as part of the interpretation of past structure and activities in Walsh Bay.

8.6 Visual impact

A Visual Impact Assessment (VIA) has been prepared by Richard Lamb & Associates and is provided at Appendix 22. A summary of the VIA is provided below.

8.6.1 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.

8.6.2 Impact assessment

The VIA was found that no significant change would occur to the extent of the visual catchment of the project, or to visual character, scenic quality, or private domain sensitivity of the site. It noted that there would be low visual exposure to most view locations other than internal views adjacent to the waterfront square, where close views would be associated with higher sensitivity and higher levels of visual effects.

When the levels of visual effect were weighted against criteria of absorption capacity and compatibility with urban, maritime and industrial features, the residual visual impacts were considered to decrease in significance.

The overall visual impacts of the project were found to be minor and acceptable. The higher level of visual change proposed to the waterfront square was considered to be an appropriate outcome anticipated by the existing consent and to be compatible with the conditions.

The specific concerns to retain existing view access from Hickson Road and of views to and from the harbour would be met in the project.

8.6.3 Mitigation measures

The minor overall visual impacts of the project do not require extensive impact mitigation.

The following mitigation measures are recommended:

- attention be given to enhancing the potential for views through new structures such as stairs and lifts, which cause minor obstructions to isolated view locations.
- The potential impacts of structures associated with the waterfront square, including temporary structures, furniture and the like, be carefully analysed and documented to ensure that there is no significant loss of views from Hickson Road.

8.7 Noise and vibration

Arup has prepared a Noise Impact Assessment (NIA) to assess the noise and vibration impacts associated with the new Walsh Bay Arts Precinct. A copy of the NIA is provided at Appendix 23. The following elements have been assessed and addressed:

- Construction noise and vibration impacts
- Mechanical and plant noise impact
- Operational noise and vibration impacts from the use of the buildings and public domain
- Noise impacts associated with the holding of events

Arup has also prepared an Operational Event Noise Management Plan (OENMP) which discusses event noise in detail and which is provided at Appendix 24.

A summary of the NIA and OENMP is provided below.

8.7.1 Existing noise environment

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

- Road and rail traffic from Sydney Harbour Bridge
- Marine activity on Sydney Harbour
- Low levels of air traffic noise from aircraft using Sydney Airport
- Occasional but regular light aircraft (helicopter) noise.
- Existing restaurants and bars
- Existing noise generation from Wharf 4/5, intermittent Pier 2/3, and Wharf 2/3 shore shed tenancies.

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.

Figures 17 and 18 identify the key receptors, as shown in the NIA.

Figure 17: Key noise receptors

Figure 18: Noise receptors to the north of WBAP

The background noise levels have been determined previously in the Noise and Vibration Impact Report prepared by WSP (June 2014) for the Stage 1 SSDA. While the WSP data is over two years old, it has been shown to be representative of the existing noise climate through recent validation by Arup using attended and unattended noise measurements at various locations at the site.

8.7.2 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 facility (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. The NIA includes Project Specific Noise Emission Criteria for affected receivers in the vicinity of the WBAP. These criteria are reproduced in Table 21 below.

Table 21: Summary of Project Specific Noise Criteria

Location (refer Figures 17 and 18 for location references)	Time Period	Project Specific Noise Criteria (L_{Aeq} 15min)
Receiver R1	Day (7:00 – 18:00)	57
	Evening (18:00 – 22:00)	52
	Night (22:00 – 7:00)	44
Receiver R2	Day (7:00 – 18:00)	57
	Evening (18:00 – 22:00)	52
	Night (22:00 – 7:00)	51
Receiver R3	Day (7:00 – 18:00)	57

Location (refer Figures 17 and 18 for location references)	Time Period	Project Specific Noise Criteria (L_{Aeq} 15min)
	Evening (18:00 – 22:00)	52
	Night (22:00 – 7:00)	51
Receiver R4	Day (7:00 – 18:00)	54
	Evening (18:00 – 22:00)	47
	Night (22:00 – 7:00)	42
Receiver R5	Day (7:00 – 18:00)	54
	Evening (18:00 – 22:00)	47
	Night (22:00 – 7:00)	42
Receiver C1	Day (7:00 – 18:00)	65
	Evening (18:00 – 22:00)	60
	Night (22:00 – 7:00)	58
Receiver C2	Day (7:00 – 18:00)	62
	Evening (18:00 – 22:00)	60
	Night (22:00 – 7:00)	58

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 Sydney Theatre Company (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. This way, the cumulative noise impacts can be accounted for.

Construction noise has 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.

In relation to noise associated with events, there are established criteria in NSW and interstate which are used to guide noise emissions from large places of public entertainment. It is common practice in Sydney to use an absolute noise limit for the assessment of noise from occasional outdoor events. For more frequent events, a relative criterion based on the existing environment is more often used. The proposed criteria for Major Events and Arts and Culture Events (as described in Section 6.8) are set out in Tables 4 and 5 of the NIA. Noise from community and private events would have to comply with the normal expectations for environmental noise emissions. The noise criteria in the INP have been applied to this source to be consistent with previous DA submissions.

8.7.3 Noise and vibration impacts

Mechanical plant noise

New plant will be required in Pier 2/3. Calculations by Arup based on preliminary plant selections show that acceptable noise levels can be achieved as would be expected in a structure hosting acoustically sensitive venues. The calculations have made allowance for the cumulative effects of the STC plant. Most of the plant is serving low-noise internal areas and this requires the selection of inherently quiet plant. The noise control treatments are likely to include:

- Specification of maximum sound power levels for all items of plant as part of the project documentation
- Rectangular and circular attenuators to control fan noise
- Acoustic louvres to control noise from plantroom ventilation openings
- Vibration isolators to reduce vibration input to the building structure
- Acoustic screens around any external plant
- Incorporation of sound absorptive treatments in plantroom spaces where needed
- Kitchen exhausts with discharge attenuators (treated against kitchen grease)

In relation to the proposed seawater cooling system, the NIA notes that this is intrinsically quieter than many of the alternatives (i.e. cooling towers or air cooled condensers). The seawater cooling plant will be enclosed in a plantroom.

Current plant proposals do not include generator sets.

Outdoor event noise

Outdoor event noise is addressed in the OENMP (Appendix 24). Noise levels from outdoor events have been calculated using the following scenarios:

- Outdoor cinema
- Large gatherings without music

Note that the current proposals for use of the public domain do not include any uses with music.

The analysis shows that an outdoor cinema is viable within the precinct but that some care will be needed to ensure that noise levels do not adversely affect the nearby residential receivers or the other performance venues within the precinct.

For events that happen very frequently (more than 10 times per year), the noise levels will need to be limited to around 85 dBL_{Aeq} in the cinema viewing area assuming that the event finishes at 2200 h. This would still be acceptable for many film genres.

For film types that have a very powerful sound track, the OENMP recommends the use of 'silent cinema' so that the patrons can experience the movie without undue disturbance to receivers in the precinct and the nearest residences.

In relation to noise from crowds, the OENMP makes the following predictions of patron noise for crowd sizes associated with different event types.

Table 22: Predicted noise levels from patron noise at sensitive receivers

Crowd size*	Predicted Noise Levels at Noise Sensitive Receivers, dB(A)L_{eq}				
	Residential units at Piers (R1)	Residential units on Lower Fort St (R2)	Commercial on Hickson Rd (C2)	Hotel at 5051 Hickson Rd (R3)	North Sydney (R4)
1,500	41	41	44	40	46
1,000	39	39	41	38	44

*It should be noted that the largest external event is expected to be around 5,000 visitors within the precinct as a whole, with no more than 1,500 people in the waterfront square.

Based on these findings, noise from patrons is not expected to be a significant issue at surrounding residential receivers.

Breakout of internal event noise

The project is cognisant of the potential for noise from internal activities to affect the nearby residences, particularly from events taking place in the spaces which are required to be naturally ventilated.

As the envelope of the facilities is largely being left 'as is' because of the heritage constraints, the noise breakout from activities will need to be managed by the operators of the various tenancies. Most of these are existing tenants and have developed appropriate protocols to manage noise to avoid complaints. These protocols have been working successfully for several years and it is considered reasonable to conclude that they will continue to do so.

It is also worth noting that some of the spaces in the development, particularly those for the ACO and ATYP, are very well insulated acoustically to control noise intrusion and will therefore be effectively insulated against noise breakout. The same applies to the STC tenancy.

Noise breakout has been assessed through acoustic modelling of the naturally ventilated spaces. This has made 'worst case' assumptions, in particular:

- All natural ventilation openings are in an open configuration
- All the noisy internal activities happen concurrently

The calculations show that noise levels are compliant with the proposed criteria during the daytime but with the possibility of a nominal 2dB exceedance of the evening time noise criteria, based on worst case assumptions. Results of the noise breakout calculations are shown in Table 23.

Table 23: Results of noise breakout calculations

Location	Predicted Noise Level dBL_{Aeq}, 15min	Target (evening time period) dBL_{Aeq}, 15min	Assessment
R1	54	52	Slight exceedance in worst case assumptions
R2	48	52	Acceptable with worst case assumptions
R3	53	52	Acceptable with worst case assumptions
R4	37	47	Acceptable with worst case assumptions
R5	37	47	Acceptable with worst case assumptions

The NIA notes that significant exceedances may occur during the night time period when the limits are more onerous than evening time. It is recommended that all doors be closed after 2200 h to mitigate this.

Construction noise and vibration

The actual noise levels associated with the construction will depend on the equipment and processes finally selected for the works. This will be assessed in detail at a later stage as the construction methodology is developed and specific plant is identified. Much of the work will be done internally and will therefore be screened by the existing building envelope. The heritage nature of the development means that many of the existing elements are being retained and the works will primarily involve the construction of new internal partitions and modifications to the roof.

In relation to the waterfront square, there will be some piling work (non-percussive) required between the two piers. There would also be some pouring of concrete involving trucks delivering concrete in Hickson Rd and concrete being pumped onto the formwork for the new wharf area. Concrete vibratory pokers will also be used. The NIA notes that the concrete pour is not extensive and timing will be carefully managed to ensure that the impact on the tenants of Walsh Bay is limited as far as practicable.

There will be some construction work externally for the erection of new lifts and new stairs. Neither of these activities is expected to involve the generation of high noise levels.

There will be a number of vehicles needed to deliver and remove equipment / debris from the site. It is estimated that there would be up to 20 vehicles per day during the demolition stage of the project and up to 45 vehicles per day during the construction process. This number of vehicles is unlikely to have any significant noise impact.

It is likely that noise levels during construction will be below the Management Levels in the ICNG. As such, no respite periods are expected to be necessary.

The potential for construction work to impact on the existing uses of the WBAP and surrounds is recognised. The ultimate Contractor (appointed at a later stage) will be required to liaise with the users so that noise from construction does not impact on any critical events taking place within the existing accommodation.

Construction vibration

No significant issues are expected with construction vibration affecting residential or commercial properties or the users of the existing venues at site. The Noise Impact Assessment notes that no percussive piling is envisaged.

Operation vibration

There are no significant sources of vibration within the development. All plant will be carefully vibration isolated to protect the sensitive accommodation within. There will be some vibration generated by dance activities but this will take place on specialist dance floors which are effective at absorbing impacts.

The NIA concludes as follows:

> *Noise from construction is not expected to be a significant issue for the nearby residential and commercial properties. A majority of the construction work will take place internally and the Contractor will be required to manage noise. No percussive piling is proposed.*
>
> *The analysis has shown that there is a possibility of excessive noise from the naturally ventilated performance and event venues when windows / shutters are open. These ventilation openings should*

be kept shut after 2200h for venues in use with significant noise generation to control this. The levels of noise in the large Function Space will need to be controlled to protect the nearby performance venues (particularly the ACO) and noise from the SDC Studio 5 facilities will also need to be controlled.

The development will be provided with seawater cooling which avoids the need for cooling towers or condenser plant. Space is being allowed for noise control to the internal plant to ensure that any noise radiation to the atmosphere from the plant does not exceed the criteria.

A combined noise model is being used to assess the cumulative total noise from the project, including the noise from the STC works. This acoustic model will be updated with specific plant and operational noise data as it becomes available. At this stage, all the preliminary plant noise assessments are being based on criteria with a 5 dB headroom to allow for these cumulative impacts.

On the basis of the noise and vibration measurements made on site and the information currently available for the development, Arup see no impediment to approval.

8.7.4 Mitigation measures

Outdoor events

In relation to operational event noise, Arup recommends the implementation of a number of noise management protocols as follows:

- Scheduling of events likely to generate significant noise levels in the public domain in coordinate with venue users so that noise from such events does not interfere with other activities in the precinct;
- Submission of a noise management plan for each event which would be required to address at a minimum:
  - Whole event programme confirming cut-off times for all activities
  - Confirmation of predicted noise levels
  - Proposals for consultation
  - Event classification
  - Contractual responsibilities
  - Sound system design, loudspeaker orientation/locations and installation
  - Noise monitoring proposals and named personnel with responsibility for noise levels
  - Complaints handling procedure
- Noise monitoring to monitor noise levels and determine whether adjustments need to be made
- Establishing a protocol to deal with exceedances, in particular to determine who would have the authority to require users to reduce noise levels
- Installation of basic technical infrastructure in the public domain which will help control noise by:
  - Simplifying the preparation of an event
  - Predetermining the most appropriate control position that will allow better control of noise levels
- Consultation protocols for notifying local residents regarding events and potential property buyers regarding the nature of the precinct (refer Communications and Stakeholder Management Plan at Appendix 4)
- Establishing a complaints hotline (refer Communications and Stakeholder Management Plan at Appendix 4)
- Reviewing each event after it is completed so that there is a ‘lessons learnt’ process in place
- Regular reviewing of noise limits and management protocols to assess their effectiveness.

Mechanical plant noise

The following noise control treatments will be considered for mechanical plant during the detailed design phase:

- Specification of maximum sound power levels for all items of plant as part of the project documentation
- Rectangular and circular attenuators to control fan noise

- Acoustic louvres to control noise from plantroom ventilation openings
- Vibration isolators to reduce vibration input to the building structure
- Acoustic screens around any external plant
- Incorporation of sound absorptive treatments in plantroom spaces where needed
- Kitchen exhausts with discharge attenuators (treated against kitchen grease)

Construction noise

An Environmental, Construction and Site Management Plan has been prepared for the site (refer Appendix 35 and discussion in Section 8.18) which provides guidance on noise and vibration mitigation measures to be implemented during construction. Work practices that minimise noise and vibration will be used wherever possible. These include but are not limited to the following:

- Flexible working hours avoiding noisy work during peak business operation times
- Plant and equipment selection to reduce noise where reasonably practicable
- Erection of temporary screens to encapsulate dust and noise
- Methodology development aimed at finding alternatives capable of reducing noise and vibration where reasonably practicable
- Location of major plant such as cranes away from noise and vibration sensitive areas where possible.

The contractor will be required to implement noise control measures during the demolition and construction phase to assist with noise reduction such as:

- Plant known to emit noise strongly in one direction would, where possible, be orientated so that noise is directed away from noise sensitive areas.
- Stationary and mobile equipment including offsite vehicles would be maintained regularly.
- Operation would be limited to occur within the approved hours.
- Continuous training through inductions and ongoing meetings would be provided for operators, labourers, subcontractors and supervisors, to keep minimal noise impacts on local residents and businesses top of mind.
- Notifications of particularly noisy works would be undertaken prior to any planned works commencing. This would include either personal or community meetings with adjoining properties owners and/or tenants.
- All complaints in relation to noise would be monitored and recorded.
- An onsite person would be identified as the contact point in the event of noise complaints with contact details provided within the Construction Management Plan.

Noise from internal activities

- Doors, windows and shutters are to be closed after 2200 h for venues in use with significant noise generation.
- Controls would be imposed on the hirers of the function space in Pier 2/3 limiting the noise that they can produce. Noise monitoring devices, similar to those used by SDC will be installed if necessary.
- SDC will need to control noise from music in Studio 5 in Pier 4/5 after 2200 h, particularly when the doors are open through to the Production Workshop.

8.8 Transport and access

GTA Consultants (GTA) has been engaged to provide transport advice and documentation for the Stage 2 State Significant Development Application (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

- preparation of an Event Traffic Management Plan to provide an appropriate transport management framework for the holding of events in the precinct.

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

- *Walsh Bay Arts Precinct Stage 2 SSDA Transport Impact Assessment* (November 2016) - Appendix 25
- *Walsh Bay Arts Precinct Stage 2 SSDA Green Travel Plan* (November 2016) – Appendix 26
- *Walsh Bay Arts Precinct Stage 2 SSDA Event Traffic Management Plan* (November 2016) – Appendix 27
- *Walsh Bay Arts Precinct Construction Pedestrian and Traffic Management Plan* (November 2016) – Appendix 28

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

8.8.1 Existing conditions

The existing transport and traffic conditions are described in the Transport Impact Assessment. 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. Access to the station has recently been made easier with the opening of the Wynyard Walk, which provides a connection 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 WBAP 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. The Barangaroo Integration Works currently being undertaken by the Barangaroo Delivery Authority will improve east-west connections to the west of the site, including Argyle Street, Dalgety Road and Towns Place. 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. Bicycle parking (approximately seven racks) are provided adjacent to the Pottinger Street/ Hickson Road roundabout.
- 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 Walsh Bay Arts Precinct (WBAP).
- 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.

8.8.2 Traffic impact

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
- Due to the relatively limited services, at least in the short term, public transport is not expected to be a preferred mode choice.

The Transport Impact Assessment indicates that the proposed redevelopment would increase the peak period traffic volume from 697 to 815 vehicles per hour, which equates to a 17 per cent increase.

It is important to note that peak traffic generation for the site does not necessarily correspond with the road peak period. The road peak period occurs on Saturday 1pm with a surveyed 836 vehicles per hour.

The result indicates that the proposed traffic generation from the site would not exceed existing peak traffic volumes observed in the vicinity of the site. In this regard, the additional traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network.

This forecast accounts for day-to-day operation of the site. During defined major events, traffic demands would be managed by an Event Transport Management Plan, as discussed in Section 8.8.6.

In summary, the TIA concludes that:

- There is a maximum statutory parking control for the site under LEP 2012 but no minimum stipulated. 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 Stage 2 SSDA requirements (refer discussion in Section 8.8.5).
- A provision of 25 secure bicycle parking facilities is recommended to be provided on-site for staff with further visitor bicycle parking to be provided in the public domain to supplement existing facilities in response to demand.
- The proposed development has statutory requirement for five loading bays. It is proposed to accommodate this loading requirement within the existing and proposed loading facilities and on-street loading bays through appropriate loading dock management.
- The site is conservatively expected to generate up to 118 vehicle movements per hour during its peak usage. There is adequate capacity in the surrounding road network to cater for the traffic generated by the proposed development.
- The existing site access arrangements would be altered to create a more pedestrian-friendly environment, responding appropriately to both typical operation and event mode needs.
- The forecasts in this report accounts for day-to-day operation of the site. During defined major events, traffic demands would be managed through an Event Transport Management Plan (refer discussion in Section 8.8.6).

8.8.3 Loading facilities

As noted in Section 6.9, 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.

A swept path assessment of the proposed loading arrangement for Pier 2/3 has been undertaken using AutoTURN (a computer package designed to simulate vehicle swept paths in a CAD environment). The assessment indicates:

- A small rigid vehicle (SRV) (6.4 metres) is able to turn around at the end of Wharf 4/5 with a three-point turn
- A medium rigid vehicle (MRV) (8.8 metres) is able to turn around at the end of Pier 2/3 with a five-point turn.

8.8.4 Transport strategy for the WBAP

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 Transport Impact Assessment 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 WBAP 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.

The Transport Impact Assessment 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.

Public Transport

There are a number of public transport initiatives in the vicinity of the WBAP that are likely to facilitate a shift away from private vehicle use to more sustainable transport options. Whilst exact details are not yet known, it is anticipated that there will be a substantial increase in the provision of public transport in the locality. The proposed CBD and South East Light Rail, new bus routes, the Sydney South East and CBD Metro (Sydney Metro) and new Barangaroo ferry wharves will all improve accessibility to the precinct.

Such infrastructure projects include the development of the Sydney Metro, which is to have a station at Barangaroo. Based on the indicative station location within the Sydney Metro Environmental Impact Statement (EIS), the precinct will subsequently be located well within the acceptable 800 metre pedestrian access radius of a train station.

Figure 19: Artist's image of Barangaroo Metro Station (Source: www.sydneymetro.info)

The Sydney Metro is anticipated to commence operations in 2024 with services provided every four minutes during the peak periods.

In addition, the Sydney City Centre Access Strategy clearly defines that new bus routes and new ferry wharves will be provided to the Barangaroo site, and Circular Quay is set to undergo a broader revitalisation project. This is shown in Figure 20.

The proposed Barangaroo ferry hub is currently under construction and is expected to be completed by the end of 2016, and begin operations by early 2017. The recently completed Wynyard Walk (October 2016) will provide a direct and key pedestrian connectivity between the new ferry wharf, and existing rail/ bus services and proposed light rail services in the CBD.

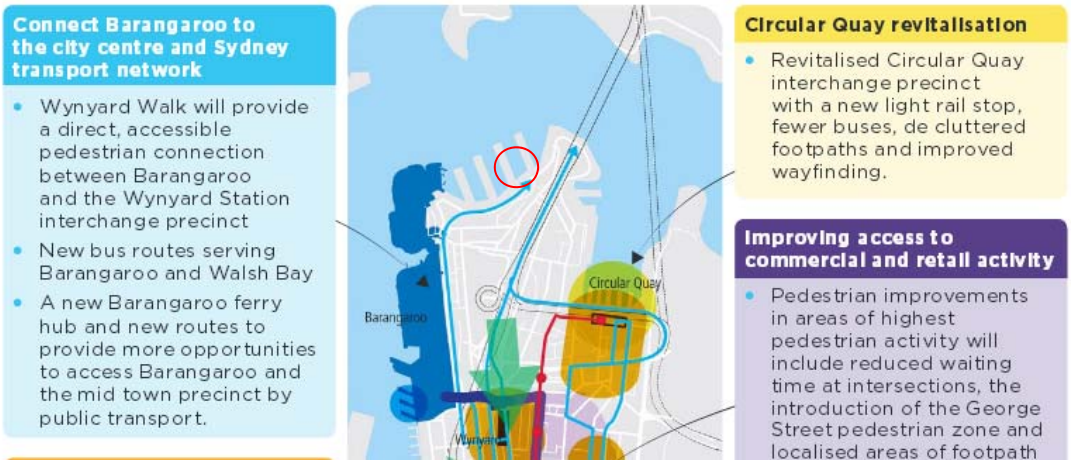


Figure 20: Sydney City Centre Access Strategy – public transport access in Walsh Bay

Hickson Road is identified as a 'key bus corridor', as shown in Figure 21. The Transport Impact Assessment notes that the corridor would be expected to further develop as other initiatives such as the development of the Sydney Metro and Barangaroo reach completion.

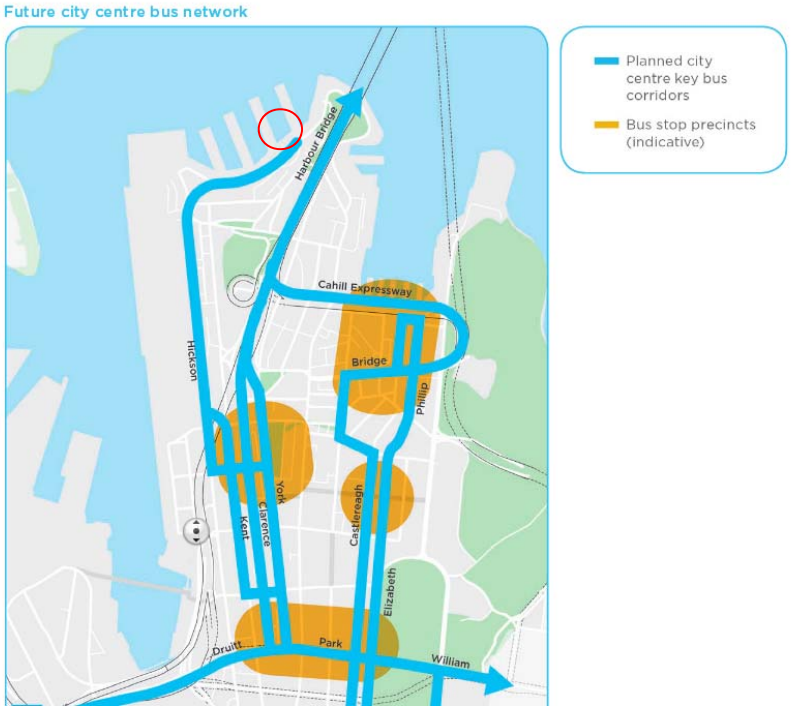


Figure 21: Strategic bus corridors (Source: Sydney City Centre Access Strategy)

Further discussion on sustainable transport solutions for the WBAP is provided in Section 8.8.5.

Taxis

Three new taxi ranks are currently being considered within the vicinity of the WBAP, as shown in Figure 22. 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.

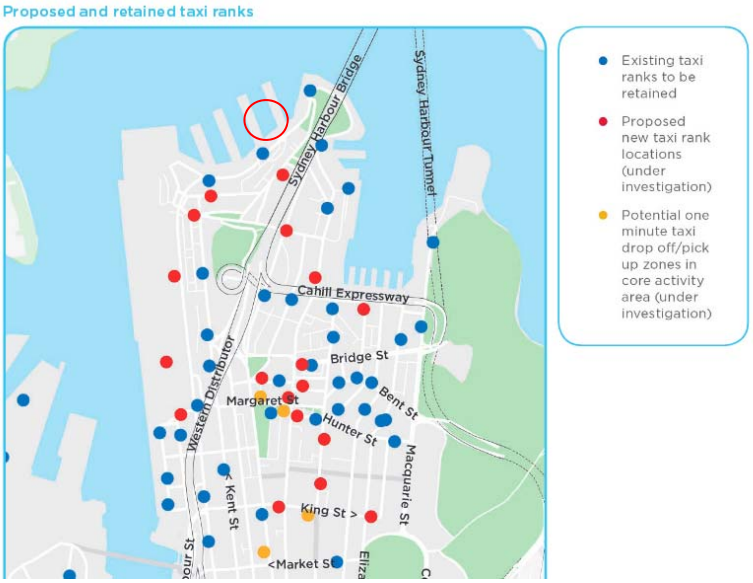


Figure 22: Taxi rank access (Source: Sydney City Centre Access Strategy)

Walking and cycling

Whilst the Walsh Bay area is not expected to be subject to further cycleway development, it remains in close proximity to key cycling corridors including the Sydney Harbour Bridge cycleway, and is therefore relatively easy to access from the Kent Street cycleway and areas such as Pyrmont Bridge. Separated cycling infrastructure is probably not required due to the lower volumes of traffic on the peninsular. However, as part of the Sydney City Centre Access Strategy, a cycleway might look to be developed to integrate with Barangaroo, which would then provide enhanced cyclist access to the WBAP.

Provision has been made within the WBAP for bicycle parking. GTA has developed a bicycle parking provision of five per cent for staff and a minimum one percent for visitors and advises that 25 secure bicycle parking spaces be provided on-site for staff, ideally with shower and locker facilities. Additional visitor bicycle parking should also be incorporated at suitable locations within the WBAP public domain, with future opportunities to be investigated within the precinct should demand arise (noting the high variability in visitor activity within the precinct).

As noted above, 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 6.11).
- Barangaroo integration works, which will improve 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.

8.8.5 Green Travel Plan

A Green Travel Plan (GTP) has been prepared for the WBAP (refer Appendix 26), 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 24.

Table 24: 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 residential 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, residents and visitors	▪ Ensure that there is accessible and secure bike parking for staff, visitors and residents. ▪ Consider installing prominent bike art sculptures to make people think about bicycles for their next trip to the area. ▪ Promote local bicycle facilities, shops and learn-to-ride or bike maintenance courses available through Sydney Cycleways to residents to encourage and facilitate an increase in cycling. ▪ Lobby for a clear tourist walk with associated wayfinding, maps and points of interest between Circular Quay and Barangaroo/ Wynyard. ▪ Lobby for the creation of street networks and associated cycleways, footpaths and links to encourage cycling and walking.
Increase public transport use	▪ Presumably, as part of the ticketing process, many visitors provide an email address in advance of the function. Consider sending out emails prior to functions outlining public transport access options to the site.
Increase consideration of taxis and ride share	▪ Liaise with ride share organisations such as Uber to provide a discount on the value of the ride for visitors of the precinct.
Increase car share use	▪ Undertake awareness campaigns with tenants of the WBAP to promote, where possible, the use of car share services such as GoGet.
Increase awareness and knowledge of available transport options by residents	▪ 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. ▪ Provide 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. ▪ 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. ▪ Provision of high quality, accurate and useful directional signage to promote walking and cycling is essential and it is proposed that this is provided stating times to destination in minutes taken as well as distances in half kilometres.

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 WBAP.

8.8.6 Event transport management

A specific Event Transport Management Plan (ETMP) has been prepared (Appendix 27) in order to effectively manage traffic and pedestrian movements surrounding the WBAP during event mode.

In this regard, this ETMP has been prepared with the assumption that the WBAP would accommodate the following three types of special events based on the spatial extent of the event:

- City wide events, which would extend beyond the WBAP to be a major city event
- Precinct wide events, which are held within the WBAP
- Public domain events, which are community events held within the public domain space at WBAP.

The ETMP provides general transport management measures that would likely be implemented for the above event types. City wide and precinct wide events will require the preparation and implementation of an event-specific Transport Management Plan.

The ETMP identifies a range of traffic management treatments which are required to be installed to adequately manage large influxes of patrons for events. These include:

- Road closures and vehicle re-routing
- Wayfinding signage
- Temporary changes to on-street parking
- Use of marshalling staff to direct pedestrians
- Service vehicle access arrangements
- Public notification and advertising
- Coordination with transport authorities, NSW Police, City of Sydney etc.

Further details regarding transport management treatments are provided in the ETMP at Appendix 27.

8.8.7 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 WBAP. Copies of the CPTMP and TGS are provided in Appendix 28. 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 at all times on footpaths around the site
- Maintain appropriate public transport access
- Minimise the loss pf 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 25.

Table 25: 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 25, 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.

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.

Cumulative impacts

There are currently a number of significant developments under construction within the immediate local area. To GTA's knowledge, such projects include, but are not limited to:

CBD and South East Light Rail

- Sydney Metro
- Barangaroo.

It is not anticipated that the cumulative traffic impacts of the various work sites, with the addition of the WBAP, would 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 WBAP 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, Property NSW and the CBD Coordination Office would be required to ensure appropriate coordination with other works and events in the area.

Truck routes

To mitigate potential construction impacts, truck movements associated with the proposed works will ideally be restricted to designated routes and confined to State roads in the broader road network. Truck routes to/ from the site have been identified with the aim of minimising the impact of construction traffic on local roads in the vicinity of 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 CBD light rail and the construction of the Barangaroo development.

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.

Wharf 4/5 is to be accessed from the first floor, via the existing vehicle overbridge from Pottinger Street. To facilitate the use of the overbridge for heavy vehicle access, the existing parking spaces on the bridge are required to be temporarily removed. This includes nine 45-degree angled car parking spaces.

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 28.

8.8.8 Mitigation measures

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

Transport Impact Assessment

- 25 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 80 bicycles). Additional bicycle spaces would 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 is to implement at loading dock management system which coordinates loading dock usage between tenants. The maximum vehicle size permitted on-site is an 8.8-metre MRV.

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 28).
- The approved construction contractor will consult with the CBD Coordination Office prior to undertaking the works.
- Construction workers would be encouraged to undertake public transport to site, with the bus service timetable provided to each worker during induction and displayed at prominent locations on site.
- Construction vehicles would 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

Event Traffic Management Plan

- The traffic management treatments identified for city wide, precinct wide and public domain events identified in Chapter 4 of the ETMP will be implemented as required.
- City wide and precinct wide events will require the preparation and implementation of an *event-specific* Traffic Management Plan.
- Any changes to road network circulation will require prior consultation with authorities including Council, Police, Roads and Maritime Services and TfNSW. Consultation with Sydney Buses would be required for road closures along Hickson Road where detouring of bus services may be required. Specific details would be detailed in the event-specific Traffic Management Plan.
- Local vehicle and pedestrian access should be maintained during events. This may include escorted vehicle access into the site during road closures or restricted access periods for delivery and service vehicles. Consultation with local businesses would be required where access to the site would be restricted.
- Controlled access points would be implemented for city wide and precinct wide events to manage site population and undertake security screening.
- Event shuttle buses are recommended for large events. In this regard the event proponent is to consult with authorities (Sydney Buses, Council and TfNSW).
- A pedestrian barrier will be provided for precinct wide events in front the Pier 2/3 access, where the footpath narrows, to prevent crowd overflow on to the road.
- City wide and precinct wide events are to publicly advertised as public transport events. Local residents and business owners are to be notified in advance of the upcoming event, and any associated changes to access and traffic, including nearby commercial car parks which may need to organise a special event parking management plan.

8.9 Amenity

8.9.1 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 WBAP itself. Within the Precinct, existing non-WBAP tenancies will have minor overshadowing from the new shade Canopy in the Waterfront Square, but this is regarded as an improvement to amenity (refer Shadow Diagrams in Appendix 5).

8.9.2 Privacy

The adjoining occupants beyond the WBAP itself comprise a range of uses and occupation types, and the impact on their privacy will be minimal.

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.

Acoustic impacts have been addressed in the Noise Impact Assessment at Appendix 23.

8.9.3 Wind

A Wind Impact Study has been prepared by Arup (October 2016) and is provided at Appendix 29. The study comprised a climate data analysis for the site, impacts of local geometry and potential design recommendations to facilitate improvements during specific wind conditions.

Climate analysis shows prevailing morning winds from north west and west directions, with afternoon winds predominantly from south east, east and south directions. Data shows that more often than not, wind speeds are moderate or light, falling below 30 km/h.

The existing geometry is likely to cause some local speed up of winds from the west and north west moving towards the Waterfront Square, where patrons are expected to be using the space for more prolonged periods.

The study concludes that the redevelopment proposes no significant changes to the general existing massing of the buildings. This means there will be no expected change in local wind patterns post-redevelopment compared to current massing. Any ameliorations implemented as part of the new development will be an improvement on the current conditions and would need to be selected within the heritage context of the development.

Other amenity impacts identified in SEARs No 7 are addressed elsewhere in the EIS.

8.9.4 Mitigation measures

Mitigation measures to be considered will be limited to small scale measures such as wind breaks via screening and planting including:

- Provision of local planting or screens to the east / west entrances to the Waterfront Square and towards the north to help to slow winds in this area
- Provision of screens along the west apron of Pier 2/3 to facilitate a slowing of north-west winds

8.10 Maritime impacts

A Maritime Impacts Assessment Report has been prepared for the project by Arup (November 2016), a copy of which is provided at Appendix 30. The report addresses:

- Wave impacts and public safety of public domain areas;
- Impacts on Sydney Harbour users including detailing any berthing arrangements;
- Design and constructability of the public domain areas.

In addition, a Metocean Conditions Report has been prepared by Arup which considers the design of the waterfront square. The Metocean Conditions Report is appended to the Maritime Impacts Assessment Report.

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

8.10.1 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 WBAP site under normal operations.

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

8.10.2 Impacts on harbour users

The proposed scheme does not include any formal provision for vessel berthing and there is therefore unlikely to be any vessel traffic generation to and from the site as a result of the development (noting RMS retain the right to use the existing wharf structures for super yacht berthing). The development of the new waterfront square area is within the footprint of the existing wharves and there is therefore minimal impact on vessel navigation in the vicinity of the site.

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.

8.10.3 Public safety

Wave overtopping and extreme water level inundation are two potential risks to public safety on overwater structures.

The main and raised deck areas of the waterfront square design are above the future 100 year ARI extreme water level and are therefore at a low risk of coastal flood inundation and wave overtopping. The terrace steps will be subject to constant inundation at varying levels according to the state of the tide.

The main deck level of the waterfront square is at a level of 2.1mAHD and will have substructure soffit level of approximately 1.6mAHD. There is a low risk of wave overtopping of the substructure under normal operating conditions considering future increased sea levels. The depth of the substructure should be minimised throughout the design stage to mitigate against potential wave overtopping. The terrace steps will be exposed to vessel wake and wind generated waves of up to 0.6m in typical operational scenarios.

Inundation and wave run-up on the terrace steps presents a potential risk to public safety which should be managed through the implementation of a combination of the following measures:

- Public awareness (square rangers, signage);
- Adopt a textured anti-slip surface profile.
- Clear demarcation of the steps at all tides and especially the lowest step;
- Regular removal of marine growth on the surface of the steps;
- Provision of emergency egress ladders and flotation devices.

Safety ladders and emergency flotation devices should be provided on the waterfront square overwater structure in accordance with AS4997.

8.10.4 Design and constructability of the public domain areas

The proposed design of the public realm area as an overwater wharf structure can be achieved using industry standard design and construction approaches and is considered a low risk activity. Structures in the maritime environment are exposed to more corrosive environment and durability issues both in terms of detailing and materials section should be considered throughout the design process.

8.10.5 Mitigation measures

The following mitigation measures will be implemented during the detailed design and operational phases of the development:

- The structural depth of the public domain area substructure will be minimised to reduce susceptibility of wave overtopping impact,
- Review and implement measures to mitigate public safety risks associated with the terrace steps down to water level. Measures to reduce the risk to public safety through inundation and wave run-up on the terrace steps may include:
  - Public awareness (square rangers, signage);
  - Adopting a textured anti-slip surface profile.
  - Clearly demarcating the steps at all tides and especially the lowest step;
  - Regular removal of marine growth on the surface of the steps;
  - Provision of emergency egress ladders and flotation devices in accordance with AS4997.
- The structural redundancy of the existing wharf structures against medium size vessel impact will be assessed to confirm the assumptions made in the qualitative assessment in the Maritime Impact Assessment Report;
- Appropriate materials and corrosion prevention/protection detailing will be adopted to ensure durability requirements are met in the maritime environment.
- Consultation will be undertaken with the Harbour Master to agree construction stage vessel exclusions zones.

8.11 Design construction and public safety

The public domain 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 12) includes measures to ensure the safety of all visitors given the waterfront location of the WBAP. The following water edge protection and monitoring controls will be established including during the operational phase:

- CCTV monitoring of waterside edges around the aprons and Waterfront Square.
- Provision of Emergency Rescue Plans and Emergency Response 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.
- Use of balustrades and fencing to the waterside edge of the Waterfront Square during certain events.

The Event Management Plan (Appendix 7) also includes measures to ensure the safety of members of the general public, visitors and workers in the Precinct. To this end, the holding of events will require the preparation of a Crowd Management Plan which must include:

- Locations of barricades.
- Locations of diversion and closure signs.
- Time and date for installation of infrastructure.
- Locations of marshals.
- Timing of footway closures and openings.
- Public transport pick up and set down areas.
- Access for people with disabilities.

- A minimum width must be maintained for egress paths for pedestrians at all times. Noting the width is to be determined following finalisation of the building designs.

Public safety associated with the use of the waterfront square terrace steps is addressed in Section 8.10.3.

Security and CPTED measures are addressed in Section 8.11.

8.11.1 Mitigation measures

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

8.12 Ecology

A Marine Ecology and Ecology Assessment has been prepared for the project by Jacobs (November 2016), a copy of which is provided at Appendix 31. The assessment addresses both marine and terrestrial ecology and specifically addresses the following matters:

- Sensitive areas/habitats for species that need to be investigated through field assessments;
- Options for increasing biodiversity;
- Contaminants of concern from available water and sediment quality data; and
- Potential ecological risks and mitigation measures associated with the construction and operation of the WBAP.

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

8.12.1 Existing environment

The site of the proposed works generally comprises Pier 2/3, Pier 4/5 and its Shore Sheds which make up Wharf 4/5, as well as the adjoining waterway. The site is located within Sydney Harbour which is a tidal estuary with a high volume of both commercial and private boating activities. The Harbour is in an urbanised catchment that contains a high proportion of impervious surfaces and has a long history of industrial and commercial activity. Walsh Bay is a mildly incised embayment no more than 550 m across, with four finger piers protruding up to 250 m into Port Jackson from the shore. Water depths in the embayment range from approximately five metres inshore to approximately 10 m towards the mouth. Circulation within Sydney Harbour is tidally dominated, with a tidal range of 2.1 m. Water levels are also affected by extreme storm events, which may increase water levels by up to two metres.

A literature review and database search was undertaken to identify threatened flora and fauna species, populations and ecological communities listed under the TSC Act, FM Act and EPBC Act, which could be expected to occur on site and in the surrounding area. The search was based on previous records, known distribution ranges, and habitats present.

A total of 92 threatened fauna species listed under the TSC Act 1995, EPBC Act 1999 and FM Act 1994 potentially inhabit, or migrate through, the local area. The identified species comprise primarily birds (51 species) and mammals (24 species) with a similar number of marine (51) and terrestrial fauna (41). Of the potentially present species, ten (10) were identifies as having a moderate likelihood of occurrence, including: one teleost fish (black rockcod); two shark species (great white and grey nurse sharks); three cetaceans (the blue, humpback and southern right whale); and three bats (eastern Bentwing-bat, southern Myotis and grey-headed Flying-fox). All the remaining species were identified as being unlikely to occur or having low likelihood of occurrence.

In terms of flora, the locality accommodates little terrestrial vegetation. Grassland habitat exists to the north-eastern end of the site, under the Sydney Harbour Bridge, but no terrestrial vegetation is located within the WBAP site itself. Terrestrial flora outside of the immediate site is not expected to be impacted and was therefore not included in the assessment.

Having regard to existing data sets, two listed threatened ecological communities are identified as possibly occurring in the study area: the Coastal Upland Swamps in the Sydney Basin Bioregion; and Western Sydney Dry Rainforest and Moist Woodland on Shale. However it is noted that there is no native terrestrial vegetation located within the site.

In terms of intertidal marine vegetation, there are no mangroves or saltmarsh known within the site or its surrounds. However, kelp dominated subtidal rocky reefs and seagrass meadows have been mapped in the local area.

Marine habitat investigations were also undertaken and included broad-scale mapping of the benthic habitat and pylon inspection in the immediate area of potential impacts. The majority of the substrate within the survey area consisted of soft-bottom, open substrate. The majority of the survey area consisted of soft open substrate (with burrow holes) followed by soft open substrate with sparse sea pens. Extensive sea pen communities were identified throughout the survey area. The communities ranged from sparse (1-5%) to high (over 30%). Sea pen communities have been observed at other locations throughout Sydney Harbour such Barangaroo.

Areas of rubble with dead shells covered in silt and encrusting sponge were observed within the survey area at several locations. These areas were located around the pylons and it is likely these areas could extend further under the structures due to the protection from deposition and wave movement from the pylons. Pylons were covered with marine growth which all exhibited similar intertidal zonation with oysters, barnacles and polychaetes found towards the top of the pylons whilst sponges, ascidians, hydroids, anemones were found from the bottom of tidal range to base. Turf algae and kelp were observed on the pylons, kelp was found in the subtidal zone. This is similar to other studies in Sydney harbour. One fish (fan bellied leatherjacket) was observed on footage around the pylon. No other fish species, including the black rockcod or syngnathids (pipefish or seahorses), were observed, however common estuarine fish are likely to inhabit the area.

8.12.2 Southern Myotis

As required by Stage 1 SSDA Concept Approval Condition of Consent B12 – Survey Southern Myotis targeted surveys for microbats (eastern Bentwing-bat and southern Myotis) were undertaken as part of the ecological assessment. The survey found no evidence of their recent presence at Piers 2/3 and 4/5, furthermore roosting opportunities for bats were found to be limited.

8.12.3 Impact assessment

The Jacobs report includes an assessment of the potential impact of the proposed works on the identified marine and terrestrial ecology. It concludes that the level of disturbance to the seabed due to the redevelopment is limited to the collective footprint of the installed/removed pilings. However, the installation of new pilings to support the Waterfront Square and the replacement of >100 defective pilings will also likely result in the re-suspension of some sediments, which may lead to a range of toxicological effects (given existing contamination within marine sediments) on benthic flora and fauna and associated species.

It was also identified that the replacement of pilings would result in the loss of any attached macroalgae (including kelp) and fauna. However, if recommended mitigation measures are implemented, to incorporate microhabitats on the surface of new pilings, then a more diverse community of organisms is likely to recolonise. Further, these measures should also help benefit the colonisation by native rather than introduced invasive species. The installation of new pilings would further increase the amount of available space for colonisation by marine biota.

Two listed vulnerable species were determined as potentially occupying the WBAP structure; thus the assessment identified that there is a risk that the project may impact on these species. It notes that the existing building may provide habitat for the southern Myotis although no evidence of its recent presence was observed during the field survey. The pilings of the wharf/pier structure may also provide some habitat or feeding grounds for the black rockcod, however its preferred habitat comprises rocky reefs, gutters and caves and the assessment of significance did not identify any significant risks to the species.

The report also identifies further risks associated with the proposed development both during construction and operation. These risks include:

<u>Construction</u>

- Shading of potential marine vegetation from the installation of the extension of the water frontage to form the “Waterfront Square
- Replacement of pilings that would result in the loss any attached macroalgae (particularly kelp) and fauna
- Loss of marine vegetation and increased bioaccumulation (in macroalgae) through increase in gross pollutants or leaching of contaminants from new construction materials
- Change in community composition (sessile and benthic taxa), structure and function resulting from change in water quality

- The loss any attached marine flora and fauna, and
- Fatalities and injuries from pile driving.

Operational

- Decrease in water quality due to:
  - increased risk of gross pollutants, fertiliser, runoff and clippings entering the water from the Waterfront Square
  - inundation of the Waterfront Square deck during king tides and adverse weather
- Colonisation on the upper surfaces is not a risk for the short periods of time the deck will be inundated during unusually high tides/adverse weather conditions. However, it is likely that the steps would become rapidly fouled by algae due to regular wetting, particularly in summer. This will look unsightly and will create a slip hazard for the public.
- Increase in pest species, and
- Colonisation or spread of invasive marine species, specifically *Caulerpa taxifolia.*

The report notes that these potential impacts can be appropriately managed through recommended mitigation measures. These measures are proposed to be implemented into the project and are included below. The assessment concludes that subject to the implementation of the recommended mitigation measures the impacts of the project to the marine environment would be acceptable both during construction and operation.

8.12.4 Mitigation measures

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

Construction

- Routine water quality monitoring including visual monitoring for plumes and gross pollutants will be conducted during construction
- Appropriate silt curtains and oil absorbent booms will be employed to contain run-off, gross pollutants, sediment and other pollutants
- Pile driving will be restricted during adverse weather and wave conditions which may hamper the effectiveness of the silt curtain
- Any water to be discharged into the harbour will comply with the *Protection of the Environment Operations Act 1997*, any Sydney Water Corporation's Trade Waste Agreement and City of Sydney Council's water quality requirements; and
- Measures to remove *Caulerpa taxifolia* safely in the event it is discovered will be implemented.

Operational

- Measures will be implemented to increase habitat complexity on the WBAP maritime structures as described in Section 8 of the Marine Ecology and Ecology Assessment (Jacobs, November 2016)
- A system to collect runoff from the Waterfront Square and divert it to the stormwater system will be implemented
- Sufficient facilities (e.g. bins) will be provided within the Waterfront Square
- A non-vegetated buffer strip will be provided along the edge of the lawn area (particularly the sides by the permeable netting) that would remove and retain some of the potential nutrients in any runoff
- Non-toxic marine grade materials will be used to reduce the risk of leachates affecting water quality. (Note: Given that the decking area may be inundated occasionally it is important that non-toxic and biodegradable finishing (oils/varnishes) and cleaning products (degreasers) be used)
- The Waterfront Square steps will be kept cleaned. This may be undertaken through a combination of non-biocide painted coatings that are effective in restricting/reducing biofouling and regular physical cleaning (i.e. using abrasive materials or jet blasting)
- Any water to be discharged into the harbour will comply with the *Protection of the Environment Operations Act 1997*, any Sydney Water Corporation's Trade Waste Agreement and City of Sydney Council's water quality requirements, and
- NSW DPI will be consulted regarding control measures for noxious *Caulerpa taxifolia*.

8.13 Contamination

JBS&G was engaged by Infrastructure NSW to prepare a Phase 1 Environmental Site Assessment (ESA) of the area of the proposed WBAP. A copy of the ESA is provided at Appendix 32.

JBS&G has previously prepared a preliminary assessment (*Phase 1 Environmental Site Assessment, Proposed Walsh Bay Arts Precinct Redevelopment, Walsh Bay Wharves, Dawes Point NSW*, June 2014) to identify the key areas of environmental concern at the WBAP. Following review of JBS&G (2014) as part of the Stage 1 Environmental Impact Statement (EIS), the NSW EPA recommended that the following conditions be applied to the WBAP Concept SSDA:

- Investigate the nature and extent of contamination of marine sediments in the vicinity of the proposed development; and
- Engage a site auditor accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act 1997 to:
  - Prepare a Site Audit Statement, certifying that the site is suitable for the proposed use; and
  - Determine the appropriateness of the proposed Construction EMP.

8.13.1 Objectives

The objectives of the Phase 1 ESA undertaken for this Stage 2 SSDA are to characterise potential contamination at the site through:

- documenting the history of the site to identify areas of potential environmental concern and contaminants of potential concern associated with the current and former landuses;
- conducting a detailed inspection of current site conditions and surrounding land uses to identify potential on and off-site sources of site contamination; and
- drawing conclusions regarding the likely suitability of the site from a contamination viewpoint, for the proposed land use, or make 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.

8.13.2 Summary of Phase 1 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.

While 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 indicated that heavy metals, organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH) and asbestos were contaminants of potential concern (COPCs) in soil and sediments;

Limited soil sampling results were available from the land based area of the site adjacent to Pier 2/3 (HLA 1996) which encountered a 1m thick layer of fill in this location underlying the surface concrete slab (600 mm thick). Laboratory analysis of fill from this location was reported to contain low concentrations of TPH, PAHs, heavy metals and OCPs.

These conditions suggest that while the presence of contaminated fill in the surrounding area has been widely documented, the potential for contamination in fill materials on the site is low.

With respect to contaminated sediments in the seabed, review of current studies has indicated that impacts present in sediments across the Sydney Harbour area include heavy metals, PAHs, TPH, OCPs and PCBs. These impacts would be expected within the seabed portion of the site, however the impacts are considered not to be attributable to the current use of the site. See also discussion in Section 8.13.3.

Seawater in the vicinity of the site is likely to be impacted with heavy metals and bacteriological contaminants however this is consistent within impacts across the entire the Sydney Harbour and are considered not to be attributable to the current use of the site.

8.13.3 Sediment investigations

Cardno was engaged to undertake a preliminary investigation of contaminants in sediments between Pier 2/3 and Wharf 4/5, Walsh Bay, Sydney, in relation the Project. The aims of the investigation were to characterise and determine concentrations of the nominated contaminants and compare them with relevant guidelines and background concentrations. A copy of the Preliminary Sediment Investigation is provided at Appendix 33.

A literature review of existing information on known contaminants in sediments in the Project Area, and wider Sydney Harbour area was undertaken prior to collection of marine sediments in Walsh Bay and subsequent analysis of potential contaminant (heavy metals and volatile and semi volatile organic compounds) concentrations. Nine sediment samples were collected, seven from within the Project area and two from a nearby reference location. Potential contaminants in the top (0 to 20 cm depth) and bottom (20 to 40 cm depth) sediment strata of the samples were characterised, except three samples from within the Project area which were archived for later analysis, if required. Results were compared with Screening Levels in the National Assessment Guidelines for Dredging (NAGD), revised ANZECC/ARMCANZ Sediment Quality Guidelines and Sydney Harbour background levels, to assess the potential risk to the marine environment represented by their potential release during construction.

Concentrations of several heavy metals were detected above guidelines values, particularly the heavy metals lead, silver and zinc, which exceeded the upper guideline value. Concentrations of organics (non-metals) were largely below guideline values, except for two organochlorine pesticide compounds and total polynuclear aromatic hydrocarbons, which exceeded the lower guideline value.

The concentrations detected in this investigation, however, were not above background (i.e. Sydney Harbour) levels. Concentrations in samples from within the Project area were also comparable with those in samples from the reference location. The presence of contaminants in Walsh Bay sediments is consistent with the historic industrial practices and the likely contaminant load in this area and the wider Sydney Harbour area. They were also comparable with, or less than, those detected in sediments during previous studies in Sydney Harbour and given the small scale of sediment disturbance that would take place due to the Project further assessment of bioavailability and toxicity is not considered necessary.

8.13.4 Impact assessment

The updated Phase 1 ESA concludes that (subject to limitations outlined in Section 6 of the ESA report) potential contaminants in soil, 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. This is based on the following:

- With respect to harbor sediments, given that disturbances to the seabed based on the proposed pile installation method are anticipated to be minimal, there are considered to be no direct exposure pathways to potentially contaminated sediments that will exist following site redevelopment. Harbour sediment will remain separated from site users under a water column of at least 6m.
- With respect to potential exposure to seawater, as associated with use of the proposed Water Steps, it is considered that general exposure to harbor water is safe, subject to adherence to standard NSW EPA guidance on swimming after rainfall, and current NSW fisheries advice relating to fishing in Sydney Harbour.
- With respect to subsurface soils it is noted that the site is not founded wholly on land but is largely supported on piers installed into the seabed. Additionally, while the surrounding area is known to be underlain by fill that is potentially impacted with a range of common urban contaminants, the limited available sample results have indicated fill at the southern end of the site is not impacted.
- These results suggest that the site is suitable for the proposed use. However, it is considered that additional soil sampling data is required to adequately characterise the land-based portion of the WBAP and confirm the suitability of the site for the proposed use.

The Cardno sediment investigations indicate that the proposed works are likely to result in the re-suspension of some sediment bound contaminants in the immediate area with potential to impact nearby marine flora and fauna. Any such impacts to the marine environment due to the localised disturbance of marine sediments can be managed subject to appropriate mitigation measures.

8.13.5 Site Auditor's advice

Interim Site Audit advice has been provided by NSW EPA Contaminated Land Accredited Site Auditor, James Davis of Enviroview Pty Ltd regarding whether it is possible for the site to be made suitable for the proposed use. The Site Auditor has advised as follows:

It is noted that the report prepared by JBS&G concludes that; based on available information, the likely contaminants at the site do not appear to represent a potential human health risk for continued commercial use of the site. This conclusion, although supported by sound reasoning is primarily based on the limited assessment of the site undertaken by HLA-Enviros ciences in 1996. The JBS&G report appropriately recommends that additional investigations should be conducted of soil/fill on the land-based portion of the site. It is agreed by the Site Auditor that without the additional investigation works, it is not possible to determine whether potential contamination of soils/fill at the site present an unacceptable risk to site users under the proposed land use and whether any remediation or management is required.

With consideration to whether it is possible for the site to be made suitable for the proposed use; it is the Site Auditor's opinion that it is certainly feasible to remediate and/or manage potential contamination associated with the past use of the site on the basis that such contamination of soil/fill is able to be managed using well-developed and readily available remediation techniques. If remediation is necessary, the remediation should be undertaken following the requirements of the guidelines made or approved by the NSW EPA under s.105 of the Contaminated Land Management Act 1997, and the provision of a Remediation Action Plan prepared in accordance with those guidelines.

A copy of the Interim Site Audit advice is provided at Appendix 34.

8.13.6 Mitigation measures

- A program of soil sampling is being undertaken on the land based portion of the WBAP for the purposes of characterising subsurface soils at the site and confirming the suitability of the site for the proposed commercial/public domain use. The results of this sampling, any necessary mitigation measures and final Site Audit advice will be submitted to the Department of Planning and Environment as part of the response to submissions for the EIS.
- Piling methods will be used during construction that minimise disturbance of sediments (e.g. use of hollow, rather than solid, piles and driven or screwed, instead of bored, installation).
- 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
- Suspended sediments will be allowed to settle prior to removal of the curtain.
- Water quality monitoring measures (primarily turbidity) will 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.
  - Sampling of turbidity immediately inside and outside of the silt curtain; and
- Baseline monitoring of water quality in the immediate vicinity of Walsh Bay will be undertaken to provide data for comparison with that measured during construction.

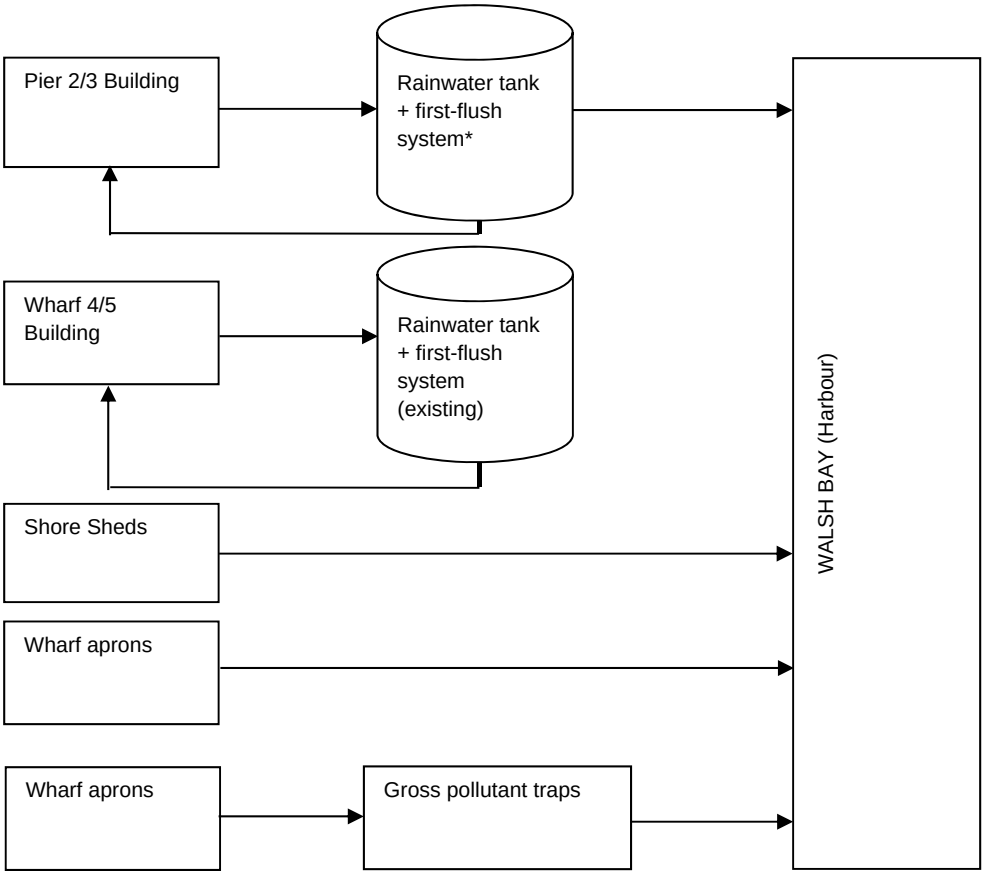
8.14 Drainage, flooding, climate change and sea level rise

An Integrated Water Management Plan (IWMP) has been prepared for the site by Jacobs (4.11.2016), a copy of which is provided at Appendix 15. 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.

Potential sea level rise impacts have been considered in the Maritime Impacts Assessment Report prepared by Arup (November 2014) and provided at Appendix 30. A summary of the key findings of this report in relation to seal level rise is also provided below.

8.14.1 Drainage

The IWMP provides a schematic of the stormwater drainage concept for the WBAP as shown in Figure 23 below.



*Currently under consideration

Figure 23: Proposed stormwater drainage concept for the WBAP

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.

Given the site is located predominantly on a pier, there is limited opportunity for landscape-based water sensitive urban design treatments such as bioretention/raingardens, and for incorporating in-ground proprietary treatment measures such as gross pollutant traps/continuous deflecting separator units. These measures are therefore not proposed for the development.

The wharf site is currently impervious and will remain impervious, and no change to groundwater conditions is anticipated (refer discussion in Section 8.13.3 below).

8.13.2 Flooding

Existing conditions

While the WBAP 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.

The IWMP notes that limited tidal inundation modelling was undertaken for the 1 year ARI level for Sydney Harbour, which has a level of 1.2 m AHD. This tidal event did not directly pose any flood risk to locations within the catchment which is not unexpected as there is limited sensitivity in harbour water levels to frequency of design water level.

Potential flooding impacts

BMT WBM (2014) identifies the WBAP 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 WBAP 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 WBAP 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 WBAP project, therefore the project will have negligible impacts. Construction materials are not to be stored along Hickson Road.

The WBAP 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.

Tidal inundation modelling undertaken for the 1 year ARI level for Sydney Harbour indicated that this tidal event does not directly pose any flood risk to locations within the catchment, including the WBAP site. However climate change modelling in the vicinity of the WBAP indicates that sections of the WFS may be inundated with water under the 2100 +0.9 m sea level rise scenario. This is discussed further in Section 8.13.4.

8.13.3 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 WBAP, 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 (Suh, 2003).

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

No additional groundwater impacts have been identified as a result of design updates following the concept design phase. 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.
- Works penetrating the ground surface, such as piling installation, may impact the groundwater source. This impact will be negligible in context of the overall hydrogeological regime.

The IWMP also notes that the majority of design updates are related to internal fit-outs or on-wharf additions that would not impact groundwater. The impact on groundwater due to the installation of additional and replacement pilings is considered negligible in context of the overall hydrogeological regime. There are no additional design changes that are expected to impact groundwater users, quality, direction or flow rates.

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.

8.13.4 Climate change and sea level rise

The upper limit projections for sea level rise in Sydney, based on the report *Climate Change in Australia* (CSIRO and BOM, 2015), are shown in Table 26:

Table 26: Sydney sea level rise predictions

Year	Sea level rise relative to 1995 levels
2030	0.2
2050	0.4
2070	0.6
2090	0.9

These values are in line with previous 2009 NSW State Government Sea Level Rise Policy guidance which was withdrawn as an official guide in 2012.

Based on an interpolation of values identified in Table 26 the sea level rise in 2066 is predicted to be +0.58m relative to 1995 levels.

To obtain a sea level rise allowance from present day to 2066 (50 year design life), the 0.58m benchmark needs to be adjusted to account for an observed sea level rise of around 3mm/yr between 1995 and 2016 (i.e. 0.063m). A design sea level rise value of 0.5m has therefore been assumed over the design life of the project.

The proposed wharf levels and design water levels are detailed in the Maritime Impacts Assessment Report (Appendix 30). The assessment of the site water levels indicates that the soffit level of the waterfront square

substructure, with the exception of the terrace steps, is generally above the future design water levels and wave overtopping is unlikely.

The deck level of the terrace steps are located between -0.53mAHD and +2.1mAHD and is therefore susceptible to wave overtopping and run-up. As indicated in Section 8.10, appropriate mitigation measures will need to be put in place to reduce the risk to public safety resulting from inundation of the terrace steps.

8.13.5 Mitigation measures

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. The waterfront square will be designed to drain to a gross pollutant trap which will trap sediment and small size litter and will also provide high quality treatment through a cartridge-type filtration mechanism.

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

Mitigation measures relating to inundation of the terrace steps are detailed in Section 8.10.

8.15 Sediment, erosion and dust management

Sediment, erosion and dust management measures are detailed in the Environmental, Construction and Site Management Plan at Appendix 35.

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, temporary plastic sheeting to catch any concrete spills.

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.

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 new floating structure silt curtains will be positioned around the construction area confining any sediment generation to the immediate construction areas. Regular monitoring by the principal contractor will be required. The superintendent will conduct regular inspections of the construction areas.

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.

8.15.1 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.

8.16 CPTED and security

The Walsh Bay Arts Precinct aims to create a sustainable and activated arts and culture precinct that supports and nurtures Sydney's home-grown culture and creativity. The project is focussed on uplifting and improving Pier 2/3 and Wharf 4/5 to provide increased amenity and develop Walsh Bay as one of the premium cultural and arts precincts in Sydney.

As the proposal includes works to the public domain an assessment of safety and security is required. Accordingly Arup has been engaged to provide security consulting services and an assessment of the project against Crime Prevention through Environmental Design (CPTED) principles (refer Appendix 36).

Arup has also prepared a Security Design Brief Report (November 2016) and Security Risk Management Report (November 2016) to:

- Identify opportunities for improvements to security management in the precinct; and
- Reduce the precinct's exposure to security risks and to assist in managing those risks.

A copy of the Security Design Brief Report is provided at Appendix 37 and a copy of the Security Risk Management Report is provided at Appendix 38.

8.16.1 CPTED strategies

The Arup report notes that overall, the proposed design for the WBAP 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 WBAP designs. These opportunities include:

- Ensure 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, and within the waterfront square;
- Provide way finding signage throughout the precinct to assist natural access control, and reinforce boundaries;
- Provide 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;
- Maintain precinct image and repair vandalism or remove graffiti as quickly as possible;
- Activate the precinct and waterfront square as much as possible, to attract legitimate users to the area, and to deter illegitimate users and crime;
- Use 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;
- Support gatherings of community groups throughout the precinct to further activate the space;
- Minimise 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.

8.16.2 Security risk and strategies

A security risk assessment methodology was used to determine the level of security risk for the WBAP project. The security risk assessment (SRA) methodology is based on the International Standard ISO 31000:2009 – Risk Management – Principles and Guidelines, and HB 167:2006 Security Risk Management.

The report found that the security risk profile for the WBAP Project is generally tolerable or acceptable.

A broad range of security treatment measures are recommended in both the Security Risk Management Report and the Security Design Brief Report to help mitigate and treat the identified security risks that the WBAP is exposed to, and lower them as low as reasonably practicable. These security management measures will be addressed through the detailed design and operational phases of the project.

8.16.3 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, and within the waterfront square. (Note: Adequate lighting attracts legitimate people to the area at night, facilitates the precincts use at night, and deters illegitimate users and crime)
- 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 and waterfront square 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
- Gatherings of community groups will be supported throughout the precinct to further activate the space, and
- 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,
- The security management strategies detailed in the Security Design Brief Report (Arup, November 2016) and the Security Risk Management Report (Arup, November 2016) will be incorporated into the detailed design and operational phases of the project as appropriate.

8.17 Thermal impacts of seawater cooling system

It is proposed that the new facilities at WBAP 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, November 2014) documents the outcomes of this assessment and is provided at Appendix 39.

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

8.17.1 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.

8.17.2 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. As such, it is considered that there will be minimal adverse impacts associated with the sea water cooling system.

8.17.3 Mitigation measures

No mitigation measures are required.

8.18 Construction management

A preliminary environmental, construction and site management plan (ECSMP) has been prepared for the proposal by Cadence Australia (refer Appendix 35). 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.

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.

8.18.1 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.

8.19 Acid sulfate soils

8.19.1 Existing conditions

The Phase 1 ESA notes that the WBAP site is located in an area of potential acid sulphate soils (ASS) and that it is also identified on the City of Sydney's Section 149 Certificate as being on an Acid Sulphate Soils Map as being Class 1 or Class 2. A review of the Prospect/Parramatta Acid Sulfate Soil Risk Map (Dept Land, Ed 2, 1997) indicates that the site is anticipated to fall within two categories with respect to the likely occurrence of acid sulfate soils:

- bottom sediments within the site portion overlying the seabed sediments where there is a high probability of occurrence of acid sulfate soil/sediment conditions. As such, should any activities result in the significant oxidation (dewatering and aeration) of the sea bed sediments there is the potential for generation of significantly acidic soil/sediment conditions.
- disturbed land – the risk map indicates the potential for the site area behind the sea wall abutting Hickson Road to have historically been filled. Such areas have the potential to be underlain by marine/alluvial sediments with the potential to be characterised as acid sulfate soil. On this basis, where disturbance of such material may occur, such as during excavation, piling, etc activities, further assessment of the acid sulfate soil characteristics is required to evaluate the potential management requirements.

8.19.2 Impact assessment

Based on the scope of development activities proposed to be completed for the WBAP development, there will be no significant disturbance of soils behind the sea wall in the southern portion of the site. As such, no further consideration is required of the potential occurrence of acid sulfate soils within the site portion underlain by soil or associated requirements for management of such conditions.

Evaluation of the potential environmental impacts associated with the seabed sediments indicates that the proposed sediment environment controls are sufficient to ensure that acid generating conditions do not result from any potential minor disturbance of seabed sediments as may occur during the proposed construction activities.

8.19.3 Mitigation measures

Proposed sediment controls set out in Section 8.13 will be implemented to ensure minimal disturbance of seabed sediments.

8.20 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 (November 2016) and is provided at Appendix 40. The WMP primarily relates to operational waste noting that a detailed Construction Waste Management Plan (CWMP) will be prepared by the Principal Contractor in accordance with the Project Management Plan prior to the commencement of construction. However the WMP includes a guided framework for the classification, transportation and management of construction waste.

The upgrade of waste facilities proposed as part of the project comprises construction of new central waste storage rooms on both Pier 2/3 and Wharf 4/5, including a temporary waste storage room on Pier 2/3 and Wharf 4/5 to accommodate day to day and special events. The WMP assesses the suitability of the proposed facilities having regard to estimated waste volumes in day to day and event operational modes (refer below).

8.20.1 Overarching waste management strategy

The waste management strategy to be employed for the project is to identify waste sources and propose management measures for the project design, construction and operation to minimise the impact of the development. The Strategy is based on the following objectives

- Provide guidance for the project in waste minimisation from construction activities
- Increase economic feasibility of the project through effective waste separation, recycling and re-use measures, and
- Identify waste management requirements and opportunities for operation.

8.20.2 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. The CWMP will comply with relevant EPA guidelines, City of Sydney Water Management Guidelines 2014 and the designated targets as outlined above.

Further 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.

8.20.3 Operational waste

<u>Day to Day Operations</u>

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 WBAP 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 WBAP 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 WBAP 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.

Event Mode

The WMP further addresses the waste management of the Precinct in proposed event modes. It notes that proposed events will be specifically designed and operated and therefore waste management services and provisions will need to be determined separately as part of a dedicated Event Waste Management Plan. It is therefore proposed that the event organiser would be responsible for the development of this plan to ensure it is appropriate for the unique requirements of each individual event.

The WMP however also includes an assessment of the estimated waste for a range of proposed major events (up to 3,000 people per day) and arts and cultural and community events (up to 2,000 people per day) within the Precinct. The assessment includes a waste generation estimation for each type of event and identifies storage requirements, potential waste storage locations and servicing requirements. Whilst it notes that the final details of event waste management will be determined on a case by case basis through the preparation of a dedicated Event Waste Management Plan, it concludes that the staging of events within the Precinct can be undertaken satisfactorily and will not give rise to any adverse impacts in terms of waste management.

8.20.4 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 WBAP Waste Management Plan (ARUP, 4.11.2016). The CWMP will comply with relevant EPA guidelines, City of Sydney Water Management Guidelines 2014 and address the additional requirements set out in Section 8.20.2 above.

Operational

- A dedicated Event Waste Management Plan will be prepared by the event organiser prior to any individual events within the WBAP. The EWMP will be consistent with the WBAP Waste Management Plan (ARUP, 4.11.2016) and will address measures to be implemented to reduce waste and ensure waste minimisation, estimated waste generation, waste storage including volumes and location, and waste servicing arrangements). The EWMP will be approved by WBAP Precinct Manager prior to the commencement of an event.

8.21 Cumulative impact

The proposed works have been designed, and will be coordinated with, internal alterations and additions to the STC tenancy in Wharf 4/5. The specialist assessments undertaken in respect of the current project, and submitted herein, have taken account of the cumulative impact of these works and propose site specific mitigation measures and works staging to minimise any potential cumulative impacts.

Given the extent of the works proposed as part of the two projects it is anticipated that some cumulative impacts will result particularly in relation to noise and traffic. However these impacts are considered to be acceptable having regard to the limited timeframe of the proposed works (estimated 24 months), the proposed mitigation measures and the positive benefits of the projects overall. It is therefore considered that the proposal is acceptable in this regard.

8.22 Site suitability

Having regard to the characteristics of the Walsh Bay Arts Precinct 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:

- 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 strategically within a significant cultural and arts precinct, as envisaged in the NSW State Infrastructure Strategy, City of Sydney's Sustainable Sydney 2030 document and the Metropolitan Strategy.
- will be served by a high frequency bus corridor as foreshadowed in the Sydney City Centre Access Strategy
- will provide for a range of cultural and community events within a landmark historic location without resulting in any adverse amenity impacts to neighbouring properties, and
- enhances the site's waterfront setting, enabling greater public access to the foreshore and to experience a wider range of arts and cultural offerings in an iconic setting.

8.23 Public interest

The Walsh Bay Arts Precinct 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
- create public open space and linkages within an iconic setting providing the community with new spaces for outdoor events, entertainment and leisure activities
- make accessible Walsh Bay, and ensure life and sustainability to 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.

9. Environmental risk assessment and mitigation measures

The section provides an environmental risk assessment (ERA) 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 8.0 and the mitigation measures proposed to ameliorate these impacts. Risks have been categorised as low, minor, moderate, high and/or extreme.

Table 27: Risk assessment and 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 is to be undertaken in accordance with the submitted plans and supporting documentation.
Heritage	Works impact on the heritage values of the Walsh Bay Arts Precinct **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 (November 2016).
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
Maritime Archaeology	Potential disturbance of maritime archaeology **Risk: Minor - Moderate**	<u>For Detailed Design of Proposed Works</u> ▪ The number and size of piles will be limited to reduce the physical footprint of the development upon the seabed; ▪ Dredging works should not take place if possible; ▪ Reclamation or deposition of sediment on the seabed is

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		acceptable; ▪ When available, the detailed engineering subsurface works, including piling and any other services which may affect the sea floor in the waterfront square area, will be examined by a qualified maritime archaeologist in accordance with the Heritage Branch Guidelines to review the potential impact on the underwater archaeological remains identified in this report. An Archaeological Research Design and Method report will be prepared by a qualified maritime archaeologist in accordance with the Heritage Branch Guidelines prior to any construction works proceeding. This report will outline further work that may need to be undertaken such as, but not limited to: - Targeted remote sensing surveys; - Dive inspection(s) of a particular areas; - Archaeological excavation, and/or; - Archaeological monitoring during construction. <u>For Mitigation During Development</u> Mitigation measures are to be presented in detail in the Archaeological Research Design and Method report to be implemented during the construction phase of the Development. Measures will include: ▪ Contractors on site are to be given a Heritage Induction in order for them to be aware of the identified underwater archaeological remains within the works area identify possible relics; ▪ A suitably qualified maritime archaeologist will be engaged to monitor works if piling, dredging or other impacts to the seabed are to take place. Monitoring may be done on site or remotely if workers are fully briefed to identify possible relics; ▪ Any cultural remains that may be relics will be recorded in detail by a suitably qualified maritime archaeologist, and; ▪ If a concentration of relics is discovered, works will stop and the archaeologist will have the opportunity to conduct a dive inspection of the area to record the site in detail prior to works commencing. <u>For Interpretation of Heritage</u> ▪ Historic plans of Walsh Bay showing old wharf structures would be useful in the interpretation of the changing coastline of Walsh Bay due to changing shipping activity and demands; and, ▪ Any relics recovered as part of proposed developments could be preserved and displayed as part of the interpretation of past structure and activities in Walsh Bay.
Noise	Construction works impact on the amenity of neighbouring properties The operation of the WBAP impacts on the amenity of neighbouring properties	<u>Outdoor events</u> The following noise management protocols will be implemented for events as follows: ▪ Scheduling of events likely to generate significant noise levels in the public domain in coordinate with venue users so that noise from such events does not interfere with other

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
	Risk: ▪ **Construction - minor to moderate** ▪ **Operation – minor to moderate**	activities in the precinct; ▪ Submission of a noise management plan for each event which will be required to address at a minimum: - Whole event programme confirming cut-off times for all activities - Confirmation of predicted noise levels - Proposals for consultation - Event classification - Contractual responsibilities - Sound system design, loudspeaker orientation/locations and installation - Noise monitoring proposals and named personnel with responsibility for noise levels - Complaints handling procedure ▪ Noise monitoring to monitor noise levels and determine whether adjustments need to be made ▪ Establishing a protocol to deal with exceedances, in particular to determine who would have the authority to require users to reduce noise levels ▪ Installation of basic technical infrastructure in the public domain which will help control noise by: - Simplifying the preparation of an event - Predetermining the most appropriate control position that will allow better control of noise levels ▪ Consultation protocols for notifying local residents regarding events and potential property buyers regarding the nature of the precinct ▪ Establishing a complaints hotline ▪ Reviewing each event after it is completed so that there is a 'lessons learnt' process in place ▪ Regular reviewing of noise limits and management protocols to assess their effectiveness. <u>Mechanical plant noise</u> The following noise control treatments will be considered for mechanical plant during the detailed design phase: ▪ Specification of maximum sound power levels for all items of plant as part of the project documentation ▪ Rectangular and circular attenuators to control fan noise ▪ Acoustic louvres to control noise from plantroom ventilation openings ▪ Vibration isolators to reduce vibration input to the building structure ▪ Acoustic screens around any external plant ▪ Incorporation of sound absorptive treatments in plantroom spaces where needed ▪ Kitchen exhausts with discharge attenuators (treated against kitchen grease) <u>Construction noise</u> The following noise and vibration mitigation measures will be

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		implemented during construction: ▪ Flexible working hours avoiding noisy work during peak business operation times ▪ Plant and equipment selection to reduce noise where reasonably practicable ▪ Erection of temporary screens to encapsulate dust and noise ▪ Methodology development aimed at finding alternatives capable of reducing noise and vibration where reasonably practicable ▪ Location of major plant such as cranes away from noise and vibration sensitive areas where possible. The contractor will be required to implement noise control measures during the demolition and construction phase to assist with noise reduction such as: ▪ Plant known to emit noise strongly in one direction will, where possible, be orientated so that noise is directed away from noise sensitive areas. ▪ Stationary and mobile equipment including offsite vehicles will be maintained regularly. ▪ Operation will be limited to occur within the approved hours. ▪ Continuous training through inductions and ongoing meetings will be provided for operators, labourers, subcontractors and supervisors, to keep minimal noise impacts on local residents and businesses top of mind. ▪ Notifications of particularly noisy works will be undertaken prior to any planned works commencing. This will include either personal or community meetings with adjoining properties owners and/or tenants. ▪ All complaints in relation to noise will be monitored and recorded. ▪ An onsite person will be identified as the contact point in the event of noise complaints with contact details provided within the Construction Management Plan. <u>Noise from internal activities</u> ▪ Doors, windows and shutters are to be closed after 2200 h for venues in use with significant noise generation. ▪ Controls will be imposed on the hirers of the function space in Pier 2/3 limiting the noise that they can produce. Noise monitoring devices, similar to those used by SDC will be installed if necessary. ▪ SDC will need to control noise from music in Studio 5 in Pier 4/5 after 2200 h, particularly when the doors are open through to the Production Workshop.
Traffic	The proposed development will result in increased traffic and parking on local roads during construction and operation **Risk: Minor to moderate**	Transport Impact Assessment ▪ 25 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 80 bicycles). 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 at loading dock management system which

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		coordinates loading dock usage between tenants. The maximum vehicle size permitted on-site is an 8.8-metre MRV. 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 28). ▪ The approved construction contractor will consult with the CBD Coordination Office prior to undertaking the works. ▪ Construction workers would be encouraged to undertake 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 Event Traffic Management Plan ▪ The traffic management treatments identified for city wide, precinct wide and public domain events identified in Chapter 4 of the ETMP will be implemented as required. ▪ City wide and precinct wide events will require the preparation and implementation of an event-specific Traffic Management Plan. ▪ Any changes to road network circulation will require prior consultation with authorities including Council, Police, Roads and Maritime Services and TfNSW. Consultation with Sydney Buses would be required for road closures along Hickson Road where detouring of bus services may be required. Specific details would be detailed in the event-specific Traffic Management Plan. ▪ Local vehicle and pedestrian access will be maintained during events. This may include escorted vehicle access into the site during road closures or restricted access periods for delivery and service vehicles. Consultation with local businesses will be required where access to the site would be restricted. ▪ Controlled access points will be implemented for city wide and precinct wide events to manage site population and undertake security screening. ▪ Event shuttle buses will be considered for large events. In this regard the event proponent is to consult with authorities (Sydney Buses, Council and TfNSW). ▪ A pedestrian barrier will be provided for precinct wide events in front the Pier 2/3 access, where the footpath narrows, to prevent crowd overflow on to the road. ▪ City wide and precinct wide events will be publicly advertised as public transport events. Local residents and business owners are to be notified in advance of the upcoming event, and any associated changes to access and traffic, including nearby commercial car parks which

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		may need to organise a special event parking management plan.
Wind	The proposed development will result in adverse wind conditions in the public domain. **Risk: Low**	Mitigation measures to be considered will be limited to small scale measures such as wind breaks via screening and planting including: ▪ Provision of local planting or screens to the east / west entrances to the Waterfront Square and towards the north to help to slow winds in this area ▪ Provision of screens along the west apron of Pier 2/3 to facilitate a slowing of north-west winds
Maritime/Safety of waterfront square	The proposed development will adversely impact vessel movements/users of Sydney Harbour. The waterfront square will put public safety at risk. **Risk: Low to minor**	The following mitigation measures will be implemented during the detailed design and operational phases of the development: ▪ The structural depth of the public domain area substructure will be minimised to reduce susceptibility of wave overtopping impact, ▪ Measures to mitigate public safety risks associated with the terrace steps down to water level will be reviewed during the detailed design phase and implemented. Measures to reduce the risk to public safety through inundation and wave run-up on the terrace steps may include: - Public awareness (square rangers, signage); - Adopting a textured anti-slip surface profile. - Clearly demarcating the steps at all tides and especially the lowest step; - Regular removal of marine growth on the surface of the steps; - Provision of emergency egress ladders and flotation devices in accordance with AS4997. ▪ The structural redundancy of the existing wharf structures against medium size vessel impact will be assessed during the detailed design phase to confirm the assumptions made in the qualitative assessment in the Maritime Impact Assessment Report; ▪ Appropriate materials and corrosion prevention/protection detailing will be adopted to ensure durability requirements are met in the maritime environment. ▪ Consultation will be undertaken with the Harbour Master to agree construction stage vessel exclusions zones.
Ecology	The proposed development will adversely impact on marine and terrestrial ecology **Risk: Low to minor**	The proposed works will be undertaken in accordance with the following ecological mitigation measures: <u>Construction</u> ▪ Routine water quality monitoring including visual monitoring for plumes and gross pollutants will be conducted during construction ▪ Appropriate silt curtains and oil absorbent booms will be employed to contain run-off, gross pollutants, sediment and other pollutants ▪ Pile driving will be restricted during adverse weather and wave conditions which may hamper the effectiveness of the silt curtain ▪ Any water to be discharged into the harbour will comply with the *Protection of the Environment Operations Act*

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		1997, any Sydney Water Corporation's Trade Waste Agreement and City of Sydney Council's water quality requirements; and ▪ Measures to remove *Caulerpa taxifolia* safely in the event it is discovered will be implemented. <u>Operational</u> ▪ Measures will be implemented to increase habitat complexity on the WBAP maritime structures as described in Section 8 of the Marine Ecology and Ecology Assessment (Jacobs, November 2016) ▪ A system to collect runoff from the Waterfront Square and divert it to the stormwater system will be implemented ▪ Sufficient facilities (e.g. bins) will be provided within the Waterfront Square ▪ A non-vegetated buffer strip will be provided along the edge of the lawn area (particularly the sides by the permeable netting) that will remove and retain some of the potential nutrients in any runoff ▪ Non-toxic marine grade materials will be used to reduce the risk of leachates affecting water quality. ▪ The Waterfront Square steps will be kept cleaned. This may be undertaken through a combination of non-biocide painted coatings that are effective in restricting/reducing biofouling and regular physical cleaning (i.e. using abrasive materials or jet blasting) ▪ Any water to be discharged into the harbour will comply with the *Protection of the Environment Operations Act 1997*, any Sydney Water Corporation's Trade Waste Agreement and City of Sydney Council's water quality requirements, and ▪ NSW DPI will be consulted regarding control measures for noxious *Caulerpa taxifolia*.
Construction	Construction works impact on the surrounding environment and amenity of neighbouring properties **Risk: Minor**	▪ 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.
CPTED and Security	Proposed development will increase the risk to public safety and security **Risk: Minor**	The proposed works will be undertaken in accordance with the following recommendations in relation to safety and security: ▪ 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, and within the waterfront square. (Note: Adequate lighting attracts legitimate people to the area at night, facilitates the precincts use at night, and deters illegitimate users and crime) ▪ Way finding 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

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		▪ The precinct and waterfront square 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 will be used to assist natural and electronic surveillance particularly at ground level, and in function, and hospitality spaces ▪ Gatherings of community groups will be supported throughout the precinct to further activate the space, and ▪ 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. ▪ The security management strategies detailed in the Security Design Brief Report (Arup, November 2016) and the Security Risk Management Report (Arup, November 2016) will be incorporated into the detailed design and operational phases of the project as appropriate.
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 WBAP Waste Management Plan (Arup, November 2016). . <u>Operational</u> ▪ A dedicated Event Waste Management Plan will be prepared by the event organiser prior to any individual events within the WBAP. The EWMP will be consistent with the WBAP Waste Management Plan (Arup, November 2016) and will address measures to be implemented to reduce waste and ensure waste minimisation, estimated waste generation, waste storage including volumes and location, and waste servicing arrangements). The EWMP will be approved by WBAP Precinct Manager prior to the commencement of an event.
Contamination and acid sulfate soils	Site is not suitable for proposed development due to contamination **Risk: To be confirmed following soil sampling**	▪ A program of soil sampling is being undertaken on the land based portion of the WBAP for the purposes of characterising subsurface soils at the site and confirming the suitability of the site for the proposed commercial/public domain use. The results of this sampling, any necessary mitigation measures and final Site Audit advice will be submitted to the Department of Planning and Environment as part of the response to submissions for the EIS. ▪ Piling methods will be used during construction that minimise disturbance of sediments (e.g. use of hollow, rather than solid, piles and driven or screwed, instead of bored, installation). ▪ 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 ▪ Suspended sediments will be allowed to settle prior to

RISK TYPE	POTENTIAL IMPACTS AND RISKS	MITIGATION MEASURES
		removal of the curtain. ▪ Water quality monitoring measures (primarily turbidity) will 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. - Sampling of turbidity immediately inside and outside of the silt curtain; and ▪ Baseline monitoring of water quality in the immediate vicinity of Walsh Bay will be undertaken to provide data for comparison with that measured during construction.
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.
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 WBAP Operational Plan of Management ▪ Events in the Precinct will be undertaken in accordance with the WBAP Operational Plan of Management and Event Management Plan
Visual impact	Proposed development will disrupt or block views to and from the Harbour **Risk: Low**	▪ During the detailed design attention will be given to enhancing the potential for views through new structures such as stairs and lifts, which cause minor obstructions to isolated view locations. ▪ The potential impacts of structures associated with the waterfront square, including temporary structures, furniture and the like, will be carefully analysed and documented to ensure that there is no significant loss of views from Hickson Road.

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10. Justification and conclusion

10.1 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 WBAP will complement the other cultural initiatives in surrounding areas, including those at nearby Barangaroo). Fundamental to the WBAP 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 WBAP 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 WBAP 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.

Community services and facilities will be enhanced through the provision of an expanded and upgraded public domain and associated amenities. At present, the public areas in this important arts precinct are constrained and do not take full advantage of the site's proximity to the waterfront. The proposed development provides for enhanced public access to the foreshore through the expanded public domain greatly improving the recreational experience and public access along the foreshore.

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 Walsh Bay Arts Precinct 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.

10.2 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.

10.2.1 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 WBAP and therefore the precautionary principle is not relevant to the proposal.

10.2.2 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, Pier 2/3 and associated public domain which are part of the broader Walsh Bay Wharves Precinct which is identified as having heritage significance for the state. The proposal will also provide significant public domain which will greatly enhance public access and enjoyment of the precinct by current and future generations.

10.2.3 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.

An assessment of the ecological impacts of the project has been undertaken which indicates that the level of marine disturbance from the redevelopment is limited to the collective footprint of the restored pilings and the extended water frontage. Terrestrial vegetation is absent within the proposed project and vegetation outside of the immediate project footprint is not expected to be impacted. There is no evidence of threatened fauna inhabiting the building structures and therefore no impact is expected. Appropriate mitigation measures are recommended and no significant impact on the biological diversity and ecological integrity of the site is anticipated. This principle has therefore been upheld in the project.

10.2.4 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.

10.3 Conclusion

This EIS is submitted to the Department of Planning and Environment in support of the Stage 2 SSDA for the construction and use of the WBAP. The WBAP proposal comprises an integrated performing arts and cultural precinct together with an enhanced public domain at Walsh Bay.

This Stage 2 SSDA follows the approval of the Stage 1 Concept SSDA (Stage 1 SSDA) for the WBAP which was approved on 21 May 2015. The Stage 1 SSDA provided for the “in principle” approval of the overall WBAP concept, establishing a framework for the future detailed design, land use and construction works required to deliver the project.

The WBAP Stage 2 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 performances spaces, for the ACO, ATYP, SDC, Bell Shakespeare, BDC, 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;
- The construction of new public domain, comprising a public square between Pier 2/3 and Wharf 4/5 for multipurpose use as well as steps down to the waterway;
- 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;

- Use of the precinct for arts festivals, events and pop ups as well as a range of activating uses such as restaurants, cafes and bars;
- Construction works comprising infrastructure upgrades, demolition, hazmat removal and substructure works.

In summary, the design for the WBAP 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. It includes the creation of a vibrant new public realm and will provide both Sydneysiders and visitors alike with a new and vibrant focus for arts, leisure and tourism.

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.