WALSH BAY ARTS AND CULTURAL PRECINCT

STATE SIGNIFICANT DEVELOPMENT APPLICATION

SSDA 8671

APPENDIX 26:

PRELIMINARY ENVIRONMENTAL, CONSTRUCTION AND SITE MANAGEMENT PLAN

NSW GOVERNMENT

Walsh Bay Arts and Cultural Precinct

Environmental, Construction and Site Management Plan

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Revision I

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1. Introduction

1.1 Purpose of Report

This preliminary Environmental, Construction and Site Management Plan (ECSMP) has been prepared by Cadence Australia Pty Ltd on behalf of Infrastructure New South Wales (INSW) to meet the Secretary's Environmental Assessment Requirements (SEAR) for the State Significant Development Application (SSDA) for the adaptive re-use and refurbishment of the Walsh Bay Arts and Cultural Precinct (WBACP).

The relevant SEARs requirements pertinent to this preliminary ECSMP are:

- **Item 14: Sediment, Erosion and Dust Controls**
    - Identify measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and particles.
    - Consideration should also be given to the assessment and management of any acid sulfate soils and potential acid sulfate soils.

- **Item 15: Environmental, Construction and Site Management Plan**
    - Community consultant, notification and complaints handling.
    - Impacts of construction on adjoining development and proposed measured to mitigate construction impacts.
    - Traffic impacts, including the impact of any construction vessel movements on marine traffic in Sydney Harbour.
    - Noise & Vibration impacts on and offsite.
    - Air Quality impacts on the neighbourhood.
    - Odour impacts.
    - Water quality management for the site, including minimisation of potential impacts on marine ecology.
    - Construction waste classification, transportation and management methods in accordance with the relevant guidelines.

The intention of this document is to communicate that this development has been well considered, and will be undertaken in a manner that seeks to minimise disturbance and impact on the surrounding environment. This preliminary ECSMP will be subject to the *Principal Contractor's* ECSMP which is to be developed upon award of contract. The *Principal Contractor's* ECSMP will be consistent with the recommendations and mitigation measures contained in this plan.

Items contained in this preliminary ECSMP include:

- Outline of major works
- 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.
- Community consultation, notification and complaints handling

For the purposes of this ECSMP, INSW is defined as the Principal, acting as an agent of the Arts Screen and Culture Division.

The *Principal Contractor* will deliver the works in conjunction with INSW, working closely with the City of Sydney Council, neighbours, existing tenants, occupants, stakeholders and relevant government authorities to ensure minimal impact and disruption to the surrounding area.

The majority of the scope of construction is encapsulated by the existing pier sheds and can be classified largely as internal work. The encapsulation of the works inside these sheds will provide a considerable measure to mitigate impacts to the surrounding environment. In addition,

Consultation will be a key priority throughout the construction process to ensure the community and stakeholders receive regular updates and have the opportunity to provide feedback.

The scope of this report provides a holistic approach that:

- Defines the project objectives and targets relevant to the construction phase.
- Describes constraints specific to the construction phase and the project in general.
- Describes the process for the identification and control of risks specific to the construction phase.
- Details the proposed strategy for the construction phase, with particular regard to establishment resourcing, site organisation and construction controls.

2. Works Description

2.2 The Project

The NSW Government is committed to development of a public arts and cultural precinct at Walsh Bay. Infrastructure NSW is acting on behalf of the client, Arts, Screen and Culture Division in preparing this State Significant Development Application for the Walsh Bay project.

This SSDA will seek approval for the construction and operation of Pier 2/3 and Wharf 4/5 for arts and cultural uses with complementary commercial and retail offerings to activate the precinct.

The site generally comprises Pier 2/3, Wharf 4/5, and Wharf 4/5 Shore Sheds. The site has a street frontage to Hickson Road as shown in Figure 1. The site is part of the Walsh Bay area, which is located adjacent to Sydney Harbour within the suburb of Dawes Point.

Figure 1: The Site

The Scope of the Project is as follows:

Pier 2/3:

The adaptive re-use providing for new arts facilities including performance venues for the Australian Chamber Orchestra, Bell Shakespeare and Australian Theatre for The NSW Government is committed to development of a public arts and cultural precinct at Walsh Bay. Infrastructure NSW is acting on behalf of the client, Arts, Screen and Culture Division in preparing this State Significant Development Application for the Walsh Bay project.

This SSDA will seek approval for the construction and operation of Pier 2/3 and Wharf 4/5 for arts and cultural uses with complementary commercial and retail offerings to activate the precinct.

Wharf 4/5 (including Shore Sheds)

- Refurbishment of the ground floor arts facilities and its associated Shore Sheds for Bangarra Dance Theatre, Sydney Dance Company, Sydney Philharmonia, Gondwana and Song Company;
- New commercial retail opportunities; and
- A series of stairs, external lifts and balconies designed as a contemporary interpretation of the original gantries reflecting the precinct's former industrial heritage
- Modifications to the roof

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 18,090sqm.

The land owner of the site is the Roads and Maritime Services (RMS). Both Pier 2/3 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 use during construction is also owned by RMS. Its land title description is Lot 12 in DP 1138931.

2.2 Key Works

Key works anticipated for the project scope are identified within Section 2.1.The following tasks represent key construction activities required in delivery of the works, including but not limited to:

- Demolition and Removal Works:
    - Demolition of internal partitions, nominated stairs and various internal elements;
    - Removal of some timber columns (storey posts);
    - Demolition and removal of existing floor coverings;
    - Demolition of existing lift in Wharf 4/5;
    - Demolition of existing nominated roof sheeting, including all insulation and sarking to be demolished;
    - Demolition of nominated trusses;
    - Removal of key façade elements for salvage and reuse (XAFC sheeting etc);
    - Potential excavation of floor in West shore sheds to allow for lowering of floor;
    - Demolition of existing concrete stairs and landings in Shore shed 4/5 breezeway.

- New Works:
    - Installation of internal partitions, floors, walls, lifts (Including piling for lift pits) and stairs;
    - Installation of lift pits in Wharf and Pier Aprons;
    - Installation of grease traps, requiring the demolition and removal of concrete;
    - Installation of heat exchange system below wharf;
    - Removal and relocation of solar panels to roof of Wharf 4/5 and Pier 2/3;
    - Installation of gangways and walking plantrooms to roof structures;
    - Installation of steel framed gantries;
    - Installation of seating banks associated with performance spaces and ancillary performance structures;
    - Construction of new timber deck in colonnade Pier 2/3;and
    - Installation of raised roof supported on salvaged timber purlins.

- Structural
    - Acoustic Slabs
        - Installation of acoustic concrete slabs and acoustic soffits.
    - Internal Structure
        - Installation of new steel portal frames and steel columns to support additional loads,
    - External Structure
        - Installation of new gantry and stair structures.

- Services:
    - Installation of plant to Wharf 4/5 shore sheds; and
    - Installation of plant to roof plantroom platforms and plantrooms; and
    - Utility Connections

2.3 Site Management

INSW intends to appoint a *Principal Contractor* for the delivery of the WBACP. An indicative organisational and responsibilities chart is shown below.

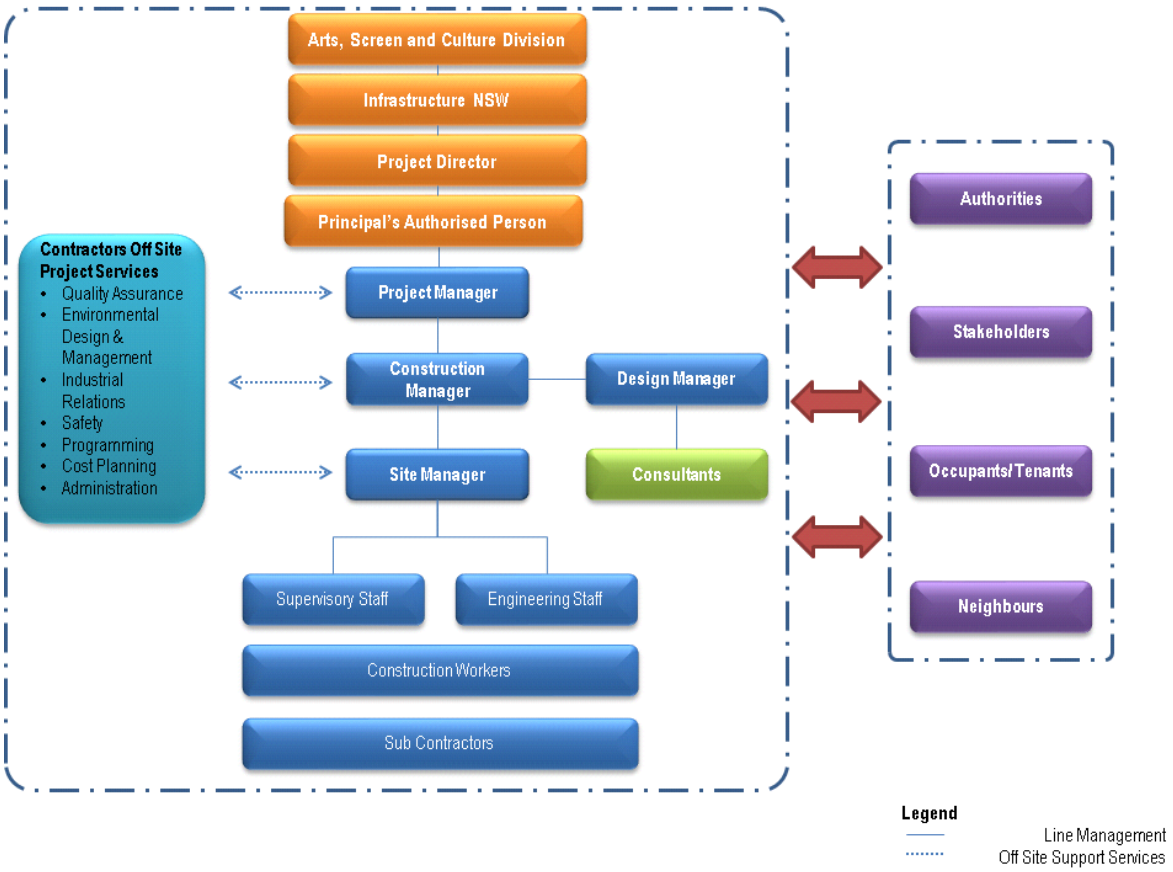


Figure 3: Organisational and Responsibility Chart

2.4 Staging of Works

This preliminary ECSMP is commensurate with the entire scope of the WBACP project, identified in Section 2.1.

However, it may be feasible that the construction activities for project are staged. In staging of the project, the construction and impact mitigation measures identified within this preliminary ECSMP will be adopted for each major component within this preliminary ECSMP, including:

- Piers 2/3
- Wharfs 4/5 (Including Shore Sheds)

The potential staging of this project will enable the *Principal Contractor* to deliver the works in accordance with the requirements of *the Principal*. If the project is to be staged, external impacts of construction shall be limited to the extent of scope within each stage.

The *Principal Contractor* will adopt the principle mitigation and management procedures identified within this preliminary ECSMP. This preliminary ECSMP will be subject to the *Principal Contractor's* ECSMP which is to be developed upon award of contract.

3. Physical Constraints of the Site

An understanding has been developed of the physical constraints that impact on the WBACP site. Key physical site constraints are as follows:

3.1 Transport and Accessibility

The WBACP site is located within close proximity to many transport modes including private vehicles (both land and seaside), ferries and buses.

Works on the WBACP project will be carefully coordinated to ensure there will be minimal impact to traffic arterials, other transport modes within the vicinity or pedestrian movements around the site.

The *Principal Contractor* will prepare a Construction Pedestrian Traffic and Management Plan and liaise with council & transport authorities throughout the period of construction and keep all stakeholders informed of any changes. The *Principal Contractor's* plan will comply with the Construction Traffic and Pedestrian Management Plan prepared by GTA Consultants.

3.2 Heritage Context

The site forms a part of the Walsh Bay Wharves precinct which, in its entirety is listed as an item on the State Heritage Register.

The design, procurement process and methods of construction have been evolved with a sensitive attention to these constraints and these details are covered in Section 5 of the preliminary ECSMP.

3.3 Adjoining and Neighbouring Properties

The WBACP is situated in close proximity to a number of neighbouring properties of varying usages, predominantly surrounded by commercial and residential properties. This section highlights the adjoining properties which may be impacted during the construction period, along with the existing tenants within Piers 2/3, Wharfs 4/5 and the shore sheds.

Refer to Adjoining and Neighbouring Properties Plan, Appendix 1.

Pier 1

This area contains a mixture of commercial (hotel accommodation) and restaurants, approximately 60 metres in distance from Pier 2/3.

Pier 2/3

This currently contains a Commercial Events/Arts Spaces on Ground Level. The remaining area remains largely in its original condition and is currently vacant.

Adjoining Pier 2/3 is the Pier 2/3 shore sheds, a commercial property owned by RMS and leased to a number of commercial tenants.

Wharf 4/5

This area currently accommodates the Sydney Dance Company and Bangarra Dance Theatre on Ground Level and Level 1, and The Sydney Theatre Company on the upper levels. The Ground Level of the Shore Shed towards the East also accommodates 3 Choirs and ATYP. These tenants will vacate the premises prior to commencement of the works.

Wharf 6/7

Approximately 80 metres in distance from Wharf 4/5 is a residential area consisting of 140 apartments on the Wharf, in addition to 45 apartments and ground level commercial properties on the shore shed.

South of the site and adjoining Hickson road is a mixture of commercial and residential properties. The residential properties are approximately 70 metres in distance from Pier 2/3, whilst the commercial properties are approximately 50m in distance from Wharf 4/5.

4. Site Layout, Logistics and Materials Handling

The materials handling and logistics required to serve the site during construction is considered to be commensurate with the scope of work, being largely internal demolition and fitout works which are considered to create only low levels of heavy vehicle movement. With the exception of some structural and services plant elements it is considered the materials handling required will not require extensive heavy plant.

Tasks identified in section 2.2 represent some key areas demonstrating materials handling requirements within delivery of the works.

The site layout, logistics and materials handling methodology has been driven by the objective to mitigate impacts to neighbours and existing tenants and this has been achieved by:

- Concentrating materials handling within the internal aspects of the piers and wharfs to minimise impact to neighbours;
- Concentrating site sheds and establishment within structure of the Wharfs and Piers; and
- Using existing main entries and segregating main construction access points away from operating tenants and residents.

4.1 Materials Deliveries

The *Principal Contractor* will submit a comprehensive, site specific Construction Management Plan and Construction Traffic and Pedestrian Management Plan to establish materials handling and materials delivery logistics. These reports will be commensurate with the principles of this preliminary ESCMP and the Construction Pedestrian and Traffic Management Plan.

This will include construction zones located on Hickson Road that will require the closure of parking at the kerb side and the parking alongside the central median strip between Wharf 4/5 and half way between Piers 2/3. It is expected that larger trucks will be unloaded from the construction zone within Hickson Road, with only smaller utility vehicles and small trucks accessing the wharf aprons.

The adjacent harbour may also be utilised for deliveries and other options including mobile and static crane usage. If the *Principal Contractor* proposes to use the Harbour waterways for materials loading or unloading relevant liaison and any approvals required must be made through the Harbourmaster.

The majority of deliveries will enter the site via Piers 2/3 and Wharf 4/5 breezeways via Hickson Road. Some deliveries and materials handling may be required to be delivered and handled onsite via a barge and a barge based crane via the waterway in-between Wharfs 4/5 and Pier 2/3.

The largest truck proposed to be used for the works is anticipated to be a 12.5m Large Rigid Vehicle. Final confirmation of the materials handling and delivery requirements will be confirmed by the *Principal Contractor.*

Figure 4 – Example of a Barge Crane

Smaller sized vehicles approved to access existing Pier 2/3 and Wharf 4/5 will drive directly to the required destination via the apron. Manitou fork lifts will be used to lift materials to the upper levels via loading platforms to be located on existing gantry openings as necessary.

4.2 Site Access

The establishment of designated access paths will provide for safe access for pedestrians adjacent to the work zones. Overhead protection will be provided for pedestrians accessing Pier 2/3 where public thoroughfare access is maintained. A final Construction Traffic and Pedestrian Management Plan will be developed by the *Principal Contractor* for the safe coordination of construction vehicles and pedestrian traffic to areas affected by construction activity.

Vehicles entering and exiting the construction zones will do so in a controlled and planned manner with minimal disruption to local vehicular and pedestrian traffic. The *Principal Contractor* will manage construction, pedestrian and vehicular interactions on all public roads with traffic and pedestrian control. At all times the *Principal Contractor* will be mindful of any work being undertaken by local authorities adjacent to and/or surrounding our site. The *Principal Contractor* must comply with the live loading limits of the existing structures, in particular the wharf and pier aprons.

Trucks, plants and vehicles utilised throughout the construction and materials handling aspects of the project must not exceed the limits and constraints set by the structural engineer. Final plant selections by the *Principal Contractor* shall consider noise and vibration impacts on adjacent stakeholders and be consistent with the recommendations of the Construction Noise and Vibration Management Plan prepared by Arup.

As per the Construction, Pedestrian and Traffic Management Plan by GTA, 8.8 meter Medium Rigid Vehicle (MRV) based on swept path analysis can access the Pier and Wharf aprons subject to loading capacities determined by the Structural Engineer. Larger vehicles may also access Pottinger Street Bridge for heavy vehicle access.

4.3 Hoardings and Overhead Protection

Hoardings will be installed to establish a secure barrier between the construction site and the general public.

Prior to the installation of hoardings onsite, the following will be considered:

- Services, particularly essential services and life safety systems will be protected or relocated where necessary.
- Access provisions for emergency and routine maintenance will be facilitated by the *Principal Contractor* as necessary.
- The *Principal Contractor* will provide a hoarding plan that details the location and hoarding type at each location. An indicative layout is provided on the attached plan. Acoustic linings may be necessary in areas of significant reverberation and echo
- Disruption and service shutdown procedures will be developed and agreed between the various stakeholders prior to commencement

Refer to the Site Establishment Plan, Appendix 2.

Hoarding Objective

Hoardings will be erected to segregate the construction area from the public areas. The hoarding construction may include timber frame and plywood, or metal ATF type temporary fencing compliant with the relevant authorities. Hoardings will provide some mitigation from reverberation and echo from construction activity.

Site Hoardings

Site hoardings will be installed taking into consideration the following items, including conformance with the requirements of the City of Sydney Council and any other relevant Authority body requirements;

- Aesthetic suitability;
- Acoustic, vibration and dust nuisance;
- Operational requirements;
- Construction access for out of hours work;
- Customer and tenant access pathways;
- Existing structural capacities;
- Effect on surveillance;
- Compliance with BCA and fire engineering requirements;
- Temporary waterproofing from external and internal conditions.

Key hoarding types of various types will typically be used in:

- Public street frontages;
- Street level Construction Zones;
- Separation between trades on specific levels where required;
- Protection of Heritage fabric.

Scaffold and Screens

Scaffolds will be erected to provide access to the faces of the buildings for demolition and refurbishment requirements. Where access to the upper level is required to individual or isolated areas scissor and boom lifts may be used to complete the works, subject to live loading limits of existing structures.

4.4 Crane, Hoists and Loading Platforms

Man and materials hoists will be used to transport materials from the ground floor to the upper levels. The hoists will generally be located on the exterior of the building as identified in Appendix 2. An additional hoist may be required on the external façade of Pier 2/3 due to the restricted access from Hickson Road adjacent to the Shore Shed 2/3 commercial tenancies and maintenance of a public thoroughfare through the Pier 2/3 breezeways.

Smaller deliveries can be directed around the perimeter of Pier 2/3 from Hickson Road.

Manitou fork lifts may also be used to transport materials from Hickson Road construction zones to the required destinations via the Wharf and Pier aprons. The structural capacity of the pier apron structures will require certification for any loads that are not included in the engineer's approved schedule. Use of existing lifts as man hoists may also be investigated particularly at the early stages of site establishment.

Where required, loading platforms will be temporarily positioned projecting from the existing structure to receive materials that will otherwise not fit inside the man and materials hoists. The site Manitou will hoist materials up to the loading platforms.

Figure 5 – Manitou (left), Loading Hoist (right).

The use of electric (quiet) scissor lifts with working heights up to 14M above ground level may be utilised for minor external façade works in the absence of scaffolding. These versatile machines can be used to access the façade for works to the exterior of the structure and the internal high level services and ceilings.

Figure 6 – Scissor Lift

4.5 Site Accommodation

Site accommodation and facilities will be provided in accordance with the relevant legislation. The planned location for the site accommodation is internal to the existing structure on the ground floor of Pier 2/3 and within existing Wharf 4/5 Shore sheds. Internal site accommodation will assist in the segregation of construction workers to the general public, reduce acoustic impacts and allow for versatile site accommodation facilities to serve both access points at Pier 2/3 and Wharf 4/5. This will serve as a necessary split in the case the works are staged between Pier 2/3 and Wharf 4/5.

Refer to the Site Establishment Plan, Appendix 2. The final configuration will be determined by the *Principal Contractor*.

Construction personal access will generally be via key entrances at the breezeways of Pier 2/3 and Wharf 4/5 from Hickson Road.

4.6 Site Induction

The *Principal Contractor* will prepare a site specific induction for all employees working on the project. Specific works inductions will be completed by individual trades contractors detailing the risks and corrective measures required to mitigate those risks. This induction will be a requirement under the Work, Health & Safety Plan to be formulated for the project by the *Principal Contractor* and subsequent WHS plans developed by the individual sub-contractors. The site induction sessions will be held on a regular basis and where possible subcontractors will be requested to attend the week prior to the date they are due to start.

The site induction will include specific commentary on the Disruption Shutdown Application (DSA) and Permit to Work (PTW) processes. As well as house rules and emergency procedures relevant to the site

4.7 Site Security

The *Principal Contractor* will be responsible for the security of the site. This may include traffic marshals the control vehicular and pedestrian traffic. It may also include security access stations to the site. The final details and extent of site security will be developed further by the *Principal Contractor*.

5. Protection of Heritage Items and Surrounding Development

Construction works and general access will be directed away from areas of heritage significance as much as possible. Wherever required, heritage components will be protected with appropriate panelling, barriers and fencing. In general, heritage items that are to remain and/or be refurbished will be identified and protected. Details of the refurbishment will be developed in conjunction with trade experts, the Heritage Architect and the Conservation Management Plan.

Mitigation measures will be implemented as per the WBACP Heritage Impact Statement Assessment Report prepared by Tropman & Tropman Architects.

As the site is of State Heritage Significance, it is a legal requirement not to remove or damage any part of the building unless it is documented; this includes tagging and logging any removed materials. The *Principal Contractor* is to ensure that it complies with the Heritage Act 1977 whilst undertaking construction activities and any other heritage requirements.

Site inductions and tool box talks will be held by the *Principal Contractor* to inform site personnel and visitors of the location of heritage items and the requirements for their protection. Work method statements will be developed specifically for works in close proximity to heritage items.

This document is to be read in conjunction with all heritage reports prepared for the works.

5.1 Dilapidation Survey

Prior to commencing work onsite, a full Pre-Construction Dilapidation Report will be completed by the *Principal Contractor* for adjoining buildings as impacted by the scope of works.

Adjoining neighbours within the precinct are identified in Appendix 1.

5.2 Adjoining and Adjacent Neighbours

Careful site management, which will minimise disruption and inconvenience to neighbouring buildings and their occupants, is of the highest importance. The *Principal Contractor* will be represented with a Community Liaison Officer to work with neighbours, understand their needs and requirements, and, where possible, adjust construction works methodologies accordingly. The adjoining properties and neighbours specifically identified for consultation are outlined in Appendix 1.

As construction progresses, protection of neighbouring buildings may be required. The method of protection will vary and will be resolved with established communication protocols throughout the works.

Prior to commencement of works, the *Principal Contractor* will undertake liaison with the stakeholders and surrounding tenants. This briefing will involve an outline of the construction sequence, together with an overview of the staging and timing of the works. This initial meeting will provide an opportunity for input from the stakeholders and tenant before finalising methodology.

To ensure ease of communication between all parties, a protocol will be established to:

- Define lines of communication and appoint a single point of contact for neighbours, that is the Communications Liaison Officer;
- Agree to times for site inspections within the leased premises;
- Specific dates for regular communication meetings;
- Clarify the escalation process; and
- Implement the Disruption Shutdown Application (DSA).

Points of contact between the *Principal Contractor*'s project team and stakeholders will be agreed for various scenarios, with stakeholders being provided with 24 hour contact numbers.

Regular inspections of areas that interface with the tenants, adjoining neighbours and existing patrons can be organised so potential issues can be identified early and addressed.

Key personnel from the *Principal Contractor*'s project team will be available to attend stakeholder internal briefings if required to communicate details of the proposed works to their respective team members.

5.3 Services Interruptions

Prior to any services being disrupted or work being carried out within an active operational environment a Disruption Shutdown Application (DSA) will be made. This process will be implemented to provide advance agreement for specific work activities to be carried out during key shutdown periods. DSA's will typically be made in advance of proposed work and in line with the agreed project notification durations. Depending on the risk profile of the proposed work, the agreed notification durations may be required further in advance.

The DSA process will be of particular value on the project in relation to the following elements:

- Works that may affect the services to a neighbouring area
- Activities in the general public realm
- Works that may affect local traffic flow
- Works that may exceed the agreed noise and vibration criteria
- Major services changeovers or shutdowns.

The benefits to all parties of the DSA process include:

- Proposed works are planned in detail
- Stakeholders are briefed on the proposal
- Early dissemination of this information effectively to relevant team members
- Works are undertaken in a more controlled and diligent manner

5.4 Complaints Response

The complaints response process for the WBACP project will be outlined in the Stakeholder Consultation and Community Engagement Plan to be developed by the *Principal Contractor*.

This Plan will describe the *Principal Contractor's* approach and procedures for communication with internal and external stakeholders, necessary territory authorities, and the public. This plan must be consistent with the *Communications and Stakeholder Management Plan*.

5.5 Emergency Contact

The initial emergency point of contact for the Project will be the *Principal Contractor's* Project Manager and the Site Manager.

As other key personnel commence onsite, further names and contact numbers will be issued and displayed prominently on sign boards.

6. Public Amenity, Safety and Pedestrian Management

6.1 Hours of Work

General construction work will be undertaken within the proposed work hours:

- Monday to Friday – 7:00am to 6:00pm
- Saturday - 8:00am to 1:00pm
- No works to occur on Sundays and gazetted public holidays

In some cases after-hours permits will be sought from the relevant authorities where special requirements exist, for example oversized deliveries.

6.2 Noise & Vibration Management

The possible impact of noise and vibration that will be generated by the project demolition and construction period is recognised. A large portion of the scope of works is internal demolition and fitout works which will be attenuated by the existing building envelope which significantly mitigates the negative impacts on the public and surrounding areas.

Particular care will need to be taken during the construction of each phase of the project to control noise and vibration. The Acoustic consultant will assess the machinery and methodology proposed to be used by the *Principal Contractor* to ensure the appropriate plant selection is in accordance with identified noise criteria. Determination of the most practical and programme effective solutions for these works will mitigate the potential for human discomfort and noise and vibration disruptions to surrounding key stakeholders.

Noise and vibration monitoring will be established at critical points within and surrounding the construction zones. Ongoing monitoring will identify any breaches and protocols to mitigate the impact of noisy or obtrusive works on adjacent neighbours. The monitoring will also consider any negative impact on the heritage fabric, public and surrounding areas.

Prior to the commencement of any works onsite, a Noise and Vibration Management Plan will be developed by the *Principal Contractor* in consultation with expert consultants and the Stakeholders to develop strategies for the mitigation of noise and vibration generated by the works. This plan must be consistent with Arup's *Noise Impact Assessment.* This will establish baseline noise levels deemed acceptable to the adjoining neighbours and public, including noise and vibration monitoring during the works and the identification of measures to manage and mitigate these impact.

Selection of appropriate plant to minimise noise and vibration, and the provision of estimates of likely levels of noise based on scheduling of activities will assist in the ongoing management of noise and vibration during the works. Typical measures will need to comply with the requirements of the ARUP Noise Impact Assessment, including but not limited to:

- Appointing a named member of the site staff who will act as the point of contact for the *Principal Contractor* with respect to noise and vibration;
- Ensure that the *Principal Contractor* keeps the precinct (and local community) advised on expected activities and coordinates scheduling and locations of noisy works around any critical user events where practicable. This shall include face to face meetings with tenants if requested and a letter box drop.

- The *Principal Contractor* must coordinate with the Communications Manager and adhere to the Communications and Stakeholder Management Plan in regards to communication channels and responsibility for notifications through the Communications Manager;
- Ensure *Principal Contractor* periodically (i.e. once per week) check the commercial tenants around the site and nearby residences for noise problems so that solutions can be quickly applied.
- Ensuring that the *Principal Contractor* checks the conditions of the powered equipment used on site daily to ensure plant is properly maintained and that noise is kept as low as practicable;
- A noise logger will be installed and maintained which can be interrogated remotely by precinct management staff as well as the *Principal Contractor*. The logger will also be required to automatically send a text message to the *Principal Contractor's* point of contact and the Precinct Management Representative once the 'warning' threshold has been breached. The data from the noise logger will be used to inform the *Principal Contractor* on the noise levels being generated so that particularly noisy activities can be identified and practicable options investigated to reduce noise levels further.
- Managing and monitoring the noise and vibration logging equipment installed around the site.
- Ensuring that the *Principal Contractor* controls the working hours on site to ensure that work is only done during the acceptable periods as defined in the Interim Construction Noise Guideline for NSW (7am to 6pm weekdays and 8am to 1pm on Saturdays. No work on Sundays);
- Construction vehicles should not arrive at project site or in surrounding residential precincts outside approved construction hours;
- The impact of noise from construction activity on the precinct may be mitigated by working outside precinct opening hours, provided there are no significant adverse impacts on residential receivers nearby;
- Ensuring that noise levels are kept as low as is reasonably practicable and providing all "feasible and reasonable" noise mitigation methods following the procedures of the NSW Interim Construction Noise guideline, and reference to relevant standards including AS2436-2010 and BS5228-2009 Code of practice; and
- Maintaining appropriate records of complaints to include timing, reported issues, actions taken and measures to be included for ongoing works. The complaints log will need to be filed with the Precinct Management.
- The *Principal Contractor* will be required to liaise with the Walsh Bay tenants so that noise from construction can be assessed in regards to existing events occurring within the Precinct during construction.

In order to help meet the noise and vibration requirements of the site, baseline testing will be carried out and existing operational levels identified. Early identification of baseline levels will enable subcontractor methodologies to be specifically tailored to ensure the benchmarks are not exceeded.

Work practices that minimise noise and vibration will be used wherever possible. These include but are not limited to the following:

- Intra-day respite periods should be implemented at those times when noise with particularly annoying or intrusive characteristics is being generated.

- Operation would be limited to occur within the approved hours, truck movements to be limited to daytime periods only;
- Vehicle movements to take place on the side of the wharf building furthest from other neighbouring wharf residences where possible;
- Works to be completed internally, using the existing building envelope to dampen noise distribution, along with erection of temporary screens to encapsulate dust and noise;
- Site offices to be accommodated internally;
- Hand tools for façade works to be used where possible;
- Avoid the use of radios or stereos outdoors. Alternatively, noise from communication radios is kept as low as is practicable;
- Avoid shouting, and minimise talking loudly and slamming vehicle doors.
- Plant and equipment selection to reduce noise where possible, especially machinery required for concrete removal work;
- Tile cutting to be done behind an acoustic screen;
- Ensure that the plant on the work/crane barge is fitted with effective residential-grade silencers and is well maintained. All doors/hatches are shut whenever the plant is in use;
- Turn off all vehicles, plant and equipment when not in use;
- Contractor should undertake safety risk assessment to consider use of alternatives to traditional 'beeper' alarms for vehicle reversing;
- Location of major plant such as cranes away from noise and vibration sensitive areas where possible. 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;
- Continuous training through inductions and on-going 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; and
- 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.

Please refer to the Noise Impact Assessment Report prepared by Arup.

6.2.1 Vibration Monitoring

Vibration monitoring during the construction will be undertaken if deemed appropriate and/or necessary by the Acoustic Consultant in order to monitor potential human discomfort and potential structural / heritage damage in and around the existing buildings.

Please refer to the Noise Impact Assessment Report prepared by Arup.

6.3 Public Safety

Works will be undertaken with public safety as a significant consideration. Class A and B type hoardings will generally be erected around the site perimeter, where required, and where construction is occurring over or adjacent to public thoroughfares.

General safety measures will be undertaken as standard practice such as scaffolding around demolition works, adequate lighting, safety signage, provision of site security, flashing lights at vehicle cross overs, physical barriers between construction works areas, and public access areas.

The various methods and extent of the public and tenant access protection has been considered. Key elements of protection access provided to comply with the City of Sydney Hoarding Policy guidelines are:

- Erection of an “A” class hoarding of standard plywood type construction
- Installation of overhead protection to areas when public are exposed to risk

6.4 Pedestrian Management

To allow for continuous public access, materials handling and management of pedestrian safety, some diversions from existing pedestrian routes will be required for large periods of the work. The installation of way finding signage and lighting will be professionally managed to ensure clear pedestrian understanding and preservation of safety and amenity.

Clear business signage must also be displayed for remaining operating tenancies which will be remaining operational during the construction phase of the project.

Indicative pedestrian thoroughfares are demonstrated in Appendix 2. In addition GTA Consultants have prepared a Traffic Control Plan for Construction Vehicle Access as part of the Construction Pedestrian and Traffic Management Plan.

The *Principal Contractor will* prepare a Construction Traffic and Pedestrian Management Plan and liaise with council & transport authorities throughout the period of construction and keep all stakeholders informed of any changes to existing conditions. The Principal Contractor’s plan will comply with the Construction and Pedestrian Traffic Management Plan prepared by GTA Consultants.

7. Traffic Management

The *Principal Contractor* will develop a site specific Construction Traffic Management Plan for the WBACP project works to ensure vehicle movements to, around and from the site do not affect traffic arterials within the vicinity of the project or pedestrian movements around it.

The *Principal Contractor* will manage traffic associated with the site to minimise the impact on the local area. The Construction Traffic and Pedestrian Management Plan will be incorporated in subcontractor agreements and the key points communicated to the workforce through the site induction procedures.

Refer to Section 4.1 – Materials Deliveries. Based on the Construction Pedestrian and Traffic Management Plan prepared by GTA Consultants, the estimated cumulative traffic impact is up to 4 truck movements per hour during demolition and up to 7 truck movements per hour during construction. This would equate to approximately 40 cumulative vehicle movements per day during demolition and 80 cumulative vehicle movements per day during construction.

80 cumulative vehicle movements per day represent the peak movement during construction, anticipated to occur for a month, at 4 months prior to completion of the works. For the remaining construction period, it is anticipated that a reduced number of vehicle movement per day, in the vicinity of 30 movements.

Traffic will generally be managed in the following way:

- Designated transport routes will be communicated to all personal, and enforced
- Designated peak hour and non-peak hour delivery vehicle waiting areas
- Strict scheduling of vehicle movement will occur to minimise off site waiting times
- On-site parking will not be provided, and site workers will utilise public transport and car sharing wherever possible.
- Vehicle movements will be compliant with the SSDA and broader road-use regulations, particularly with regard to hours of work, materials loading and unloading, and over size deliveries and installation.
- Stakeholder feedback.
- Where possible deliveries will be marshalled directly to the site destination via the access points at pier 2/3 and Wharf 4/5 shown in Appendix 2.

Refer to Appendix 2 for the Site Establishment and Access Plan.

Refer to the Construction and Pedestrian and Traffic Management Plan as prepared by GTA Consultants.

7.1 Site Access

Access to the Site will be available via the existing street frontage access ways and construction zone to be created.

For access reasons, and to minimise traffic disruptions to the surrounding road network, deliveries will be carefully controlled. Larger materials and vehicles that are not able to access the pier aprons will be offloaded in the construction zones using fork lifts under traffic controlled conditions.

Other loads may be delivered to site via the adjacent harbour utilising barges, tugs and barge cranes. Any utilisation of the harbour and waterways and the resulting marine traffic impacts will be finalised by the *Principal Contractor* prior to the commencement of the works, as deemed appropriate. Ongoing liaison with the relevant authorities including the Harbourmaster will occur throughout the delivery of the WBACP.

Refer to Section 4 for Site Layout, Logistics and Materials Handling.

8. Environmental Management

8.1 Work, Health & Safety

The Contractor will be the nominated '*Principal Contractor*' as required under the WHS Act. This role will require the careful and controlled management of worker and public safety. Detailed methodologies will be further developed by the *Principal Contractor* however typical approaches include job training, toolbox talks, and implementation of emergency management plans, safe work method statements, weekly WHS meetings and audits to confirm compliance.

The *Principal Contractor* will be required to report on WHS on a regular basis.

8.2 Hazardous Materials

Consultant survey works have been carried out to establish existing site conditions and to identify hazardous materials onsite. These survey works are to be confirmed by the *Principal Contractor* to ensure all hazardous materials have been identified for the appropriate treatment and removal, including:

- Hazardous material (Hazmat) survey of the existing structures; and
- Any additional requirements for soil classification, sampling and analysis works for any potential spoil removal;

As hazardous materials have already been identified, procedures and principles have been developed. These procedures and principles will be consistent for expected and unexpected hazardous materials. They are typically outlined below:

- Notification to the Principal's Authorised Person who will notify the Principal and project stakeholders;
- Isolate and restrict access to the areas as advised by the Environmental Consultant; and
- The environmental consultant will be contacted to provide advice regarding the most appropriate action to be taken.

Hazardous materials will be capped and contained, or removed in accordance with the relevant consultant's advice and the Principal's Authorised Person's direction. In consultation with the Environmental Consultant, the contractor will advise of the most appropriate method of dealing with the particular contaminant.

The following outlines the typical mitigation measures for a selection of potential hazardous materials to be identified on site:

- Asbestos – containing Materials (ACMs)
    - All asbestos-containing materials which are to remain in-situ should be labelled to warn of the dangers of disturbing these materials if not already labelled.
    - Periodic reassessment of all asbestos-containing materials that remain on-site should be scheduled, to monitor their deterioration.
    - An asbestos management plan should be developed for the site.
    - A Destructive Hazardous Materials Assessment should be carried out prior to any demolition or refurbishment works as per Australian Standard (AS) 2601:2001 *The demolition of structures*.

    - When demolition or refurbishment works are required in those areas where suspected asbestos – containing materials were identified, these materials should be sampled and if they contain asbestos. Licensed asbestos personnel should remove these materials prior to such works.
- Synthetic Mineral Fibre (SMF)
    - Confirmed SMF materials should be maintained in good condition and removed under controlled conditions prior to refurbishment works.
- Lead Containing Paint
    - If refurbishment works are likely to involve the disturbance of confirmed lead-containing paint, dust suppression techniques should be utilised and a Lead Paint Removal plan should be developed by a suitably experienced consultant.

8.3 Hazardous Substances

A hazardous materials register will be maintained on site by the *Principal Contractor*. This will include all chemical type materials and other materials that require specific handling and disposal procedures accompanied by a current Material Safety Data Sheet (MSDS). All hazardous substances will be registered, correctly stored, decanted, used and disposed in accordance with the MSDS and regulatory requirements. Employees will be trained in the Safe Work Method Statement (SWMS) based on the MSDS and provided with the appropriate Personal Protective Equipment.

8.4 Site Discharge

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

8.4.1 Truck Wash Facilities

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.

8.4.2 Silt Protection of the Marine Environment

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

Silt curtains should 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 if works are expected to generate sediment. Vessel movements in and out of the silt curtain should be minimised during the course of work; and suspended sediments should be allowed to settle prior to removal of the curtain.

8.4.3 Water Quality Monitoring

Monitoring of water quality measures (primarily turbidity) could be considered to validate the effectiveness of the sediment control measures. Monitoring could 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.

Implementation of the above controls should be sufficient to reduce residual impacts to the marine environment due to the Project by the *Principal Contractor*, to acceptable levels.

8.5 Dust Control

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

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

If any adverse odours or excessive dust is emitted as part of the demolition or construction works the *Principal Contractor* will manage the emissions and air quality in accordance with the EP&A Guidelines. Due to the nature of the works, it is not expected excessive dust or odours would be emitted during the works.

8.6 Waste Management during Construction

Waste should be managed in accordance with the waste management hierarchy and EPA Waste Classification Guidelines. It will be part of the Contractor's 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 Management Plan will be developed by the *Principal Contractor* in accordance with the *Principal Contractor's* Environmental Management System to ensure optimum waste management initiatives are implemented. Any plans and processes developed for the waste management must take into account Heritage requirements as per Section 5.

In addition, all subcontractors are responsible for removing their own packaging and other re-usable items such as pallets from site. Adopting this policy:

- Promotes recycling by subcontractors and suppliers;
- Removes unnecessary packaging at the source rather than at site; and
- Reduces the amount of rubbish being sent to land fill.

Waste generation and management during excavation and construction phases will be the responsibility of the *Principal Contractor* and is to be handled in accordance with the approved Construction Waste Management Plan, when developed, as it will relate to materials procurement, handling, storage, and use.

If any excavation is required in performing the works, the *Principal Contractor* shall manage the works as per the EP&A Guidelines. This includes the testing and management of any potential acid sulfate soils encountered onsite. It is not expected acid sulfate soils will be encountered onsite.

Waste generated during construction will be reused and recycled as a priority, and only disposed to landfill when unavoidable.

During construction, suitable areas on site will be allocated which provide adequate space and access for:

- Storage of building materials,
- Storage of construction waste,
- Sorting of construction waste,
- Removal of construction waste for recycling, re-use or landfill, and
- Interim storage of fill materials as required.

Construction waste management will be performed to meet the following specific goals of the project sustainability requirements through the implementation of a Construction Waste Management Plan (CWMP), such that:

- Target of 90% of demolition and construction to be reused or recycled in alignment with the NSW WARR Strategy, and
- Retain waste reports (quarterly) to ensure targets are met.

Waste that is unable to be reused or recycled will be disposed of offsite at an EPA-approved waste management facility following classification. No waste should be permitted to enter the harbour. All vehicles carrying waste, spoil etc. should be appropriately covered to prevent escape of waste material

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 are to be completed by the *Principal Contractor*, as provided in the City of Sydney Waste Guidelines 2014.

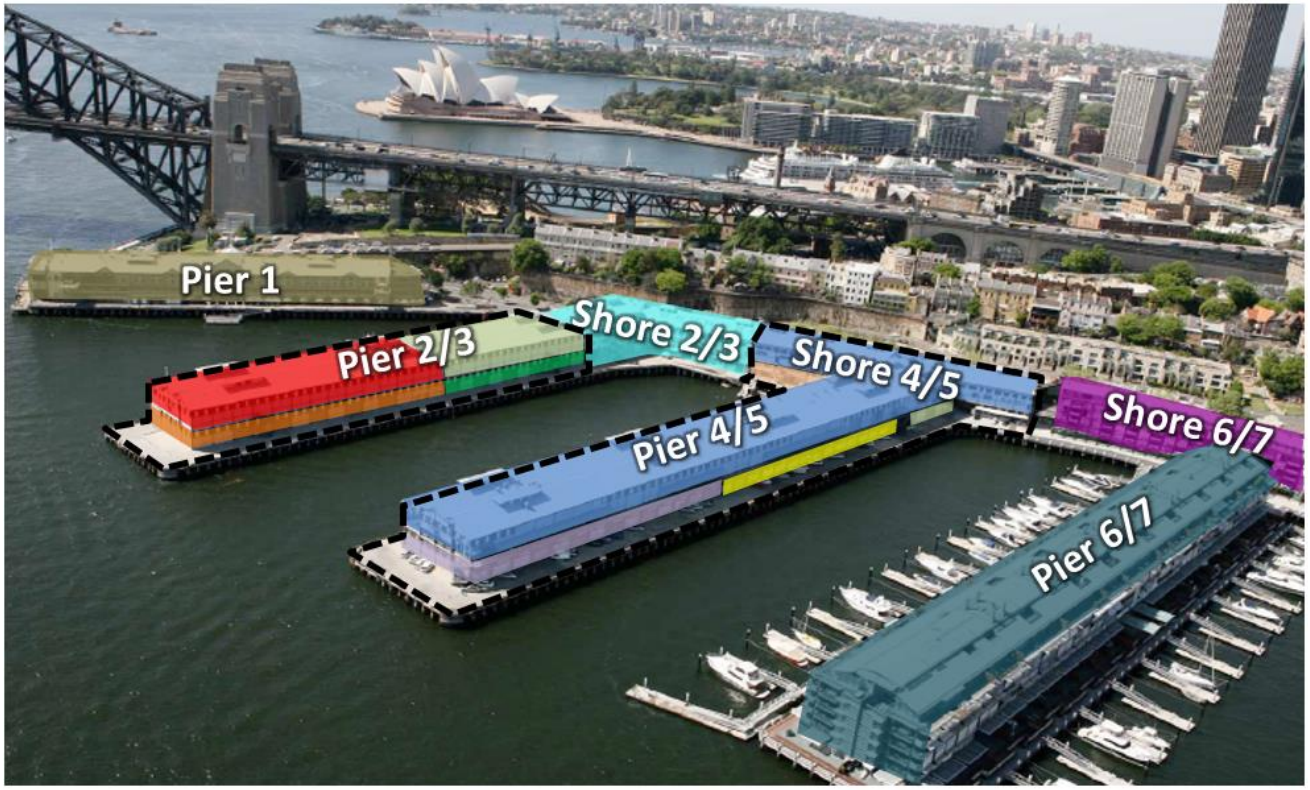
Please refer to the Waste Management Review by Arup.

9. Principal Contractor Deliverables

Sections 4 – 8 of this Preliminary ECSMP provide a brief overview of what plans and mitigation measures are to be included in the Principal Contractors ECSMP. The below table summarises the required deliverables by the *Principal Contractor*. The documents noted below do not represent all documents required to be provided by the *Principal Contractor* in delivery of the works.

Report Reference	Guiding Document	Principal Contractor Deliverable
3.1 Transport and Accessibility	• GTA Construction Pedestrian and Traffic Management Plan	• Construction Traffic Management Plan
4. Site Layout, Logistics and Material Handling	• Cadence Australia's Preliminary ECSMP • GTA Construction Pedestrian and Traffic Management Plan • Work Health and Safety Act 2011 (NSW)	• Work, Health and Safety Plan, and • Environmental, Construction and Site Management Plan.
5. Heritage	• Tropman & Tropman Architect's Heritage Impact Statement Assessment Report	• Conservation Management Plan (*developed by others, Principal Contractor to comply*)
5.4 Complaints Response, and **5.5 Emergency Contact**	• Communications and Stakeholder Management Plan	• Stakeholder Consultation and Community Engagement Plan • Environmental, Construction and Site Management Plan
6.1 Hours of Works	• State Significant Development Approval	• Environmental, Construction and Site Management Plan
6.2 Noise and Vibration Management	• Arup's Construction Noise and Vibration Management Plan and Arup's Noise Impact Assessment Report • Cadence Australia's Preliminary ECSMP	• Construction Noise and Vibration Management Plan
6.3 Public Safety, and **6.4 Pedestrian Management**	• Cadence Australia's Preliminary ECSMP • City of Sydney Hoarding Policy	• Environmental, Construction and Site Management Plan
7.0 Traffic Management	• GTA Construction Pedestrian and Traffic Management Plan	• Construction Traffic and Pedestrian Management Plan
8.1 Work, Health and Safety	• Work Health and Safety Act 2011 (NSW)	• Work, Health and Safety Plan
8.2 Hazardous Materials, **8.3 Hazardous Substances**	• Preston Rowe Paterson's Hazardous Materials Assessment Wharf 2-3 • Preston Rowe Paterson's Hazardous Materials Re-inspection Wharf 4-5	• Hazardous Materials Register • Environmental, Construction and Site Management Plan
8.6 Waste Management during Construction	• EPA Waste Classification Guidelines • City of Sydney Waste Guidelines 2014 • Arup's Waste Management Plan	• Construction Waste Minimisation Plan

Appendix 1 - Adjoining and Neighbouring Properties Plan



Neighbouring Tenancies *To remain through-out works*	
	Pier One Sydney Harbour Autograph Collection
	Simmer on the bay restaurant
	Pier capital
	Simcon Pty Ltd
	The Dubs
	Mail plus
	45 Residential Apartments
	Ground Floor Commercial Space
	140 Residential Apartments
	Private Piers (Operational)

Extent of WBACP works. (General and indicative)

Appendix 2 – Site Establishment & Access Plan (*To be read in conjunction with GTA's Construction Vehicle Access Plan)*