

**MAJOR PROJECT ASSESSMENT:
Main Works for Barangaroo Headland
Park & Northern Cove
MP 10_0048**



Before



After

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

March 2011

ABBREVIATIONS

CIV	Capital Investment Value
Department	Department of Planning
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning
EA	Environmental Assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental Planning Instrument
MD SEPP	State Environmental Planning Policy (Major Development) 2005
Minister	Minister for Planning
PAC	Planning Assessment Commission
Part 3A	Part 3A of the <i>Environmental Planning and Assessment Act 1979</i>
PEA	Preliminary Environmental Assessment
PPR	Preferred Project Report
Proponent	Barangaroo Delivery Authority (BDA)
RtS	Response to Submissions

Cover Photograph: Before: Image showing existing view from Balmain looking east to the Headland Park.

After: Image showing proposed view from Balmain looking east to the Headland Park.

© Crown copyright 2011
Published March 2011
NSW Department of Planning
www.planning.nsw.gov.au

Disclaimer:
While every reasonable effort has been made to ensure that this document is correct at the time of publication, the State of New South Wales, its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance upon the whole or any part of this document.

NSW Government
Department of Planning

EXECUTIVE SUMMARY

This report is an assessment of a Project Application seeking approval for **Main Works** to the Headland Park (north) and Northern Cove Barangaroo, pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

When granting approval for the Concept Plan for the Barangaroo site (MP06_0162) the Minister for Planning determined, pursuant to section 75P(1)(b) of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), that approval to carry out the project or stages of the project with a capital investment value of less than \$5 million, is subject to Part 4 or 5 of the EP&A Act. As the capital investment value of the Project Application is \$92,508,280, Part 3A of the EP&A Act applies to the proposal and the Minister is the approval authority.

The proposal will contribute to the creation of 715 construction jobs and 30 operational jobs.

The Barangaroo site is listed as a State Significant Site under Part 12 of Schedule 3 of the Major Development SEPP 2005 (SEPP 2005). SEPP 2005 zones the Project Application site RE1 Public Recreation while the adjoining waterway is zoned W1 Maritime Waters under the Sydney Regional Environmental Plan (Sydney Catchment) 2005. The proposed earth works to the Headland are permissible with development approval.

The Environmental Assessment (EA) was exhibited for a 30 day period from Wednesday 10 November 2010 until 10 December 2010. The Department received twenty-three (23) submissions during the exhibition of the EA – seven (7) submissions from public authorities and sixteen (16) submissions from the general public and special interest groups. Key issues raised in the submissions included:

- Contamination/Remediation Process;
- Construction noise and vibration;
- Air quality impact;
- Traffic management, access and parking arrangements;
- Headland Park design and operations;
- Heritage concerns
- Future cultural facility and car park; and
- Ecology and water management.

On 11 February 2011, the Proponent submitted a Preferred Project Report (PPR) including a Response to Submissions to address issues raised by the Department, other government authorities and the public.

The Department has assessed the merits of the project and is satisfied that the impacts of the proposed development have been addressed via the EA, PPR and Statement of Commitments, and can be adequately managed through the recommended conditions of approval.

The project development is in the public interest as it will provide a naturalised headland while implementing the physical link suggested in the Concept Plan by reinstating the historic topography of Millers Point. The proposal strengthens the pedestrian connection between the Headland Park and the adjacent elevated plateau around Argyle Place and The Rocks. The creation of the Northern Cove will achieve an enlarged water cove with a more naturalised shape, form and edge treatment complementing the parkland.

Furthermore, the works will improve pedestrian access to the Headland Park, Northern Cove and foreshore area through the provision of a pedestrian promenade and footpath network. The project includes underground car parking for 300 vehicles and designated floor area for future cultural facilities.

The Department is satisfied that the proposal is consistent with strategic planning objectives, including the Metropolitan Plan for Sydney and draft Sydney City Subregional Strategy, all of which will facilitate the future development of the Barangaroo site.

Accordingly, the Department considers the project to be of significant public benefit and recommends that the project be approved, subject to appropriate conditions.

1. BACKGROUND

On 9 February 2007, the Minister for Planning approved the Concept Plan for the site, and on 12 October 2007, the land was rezoned to facilitate its redevelopment via an amendment to Schedule 3 of the Major Development SEPP. The approved Concept Plan provides definition to the project principles and establishes the detailed planning framework which will be used by the Minister for Planning to assess future development proposals within the Barangaroo site.

The Proponent, Barangaroo Delivery Authority (BDA), is seeking approval for the main works for the creation of the Barangaroo Headland Park and Northern Cove.

Barangaroo has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Stage 2 (Barangaroo Central) and Barangaroo Stage 1 (Barangaroo South). **Figure 1** below shows the location of the Headland Park in the context of the entire Barangaroo site.

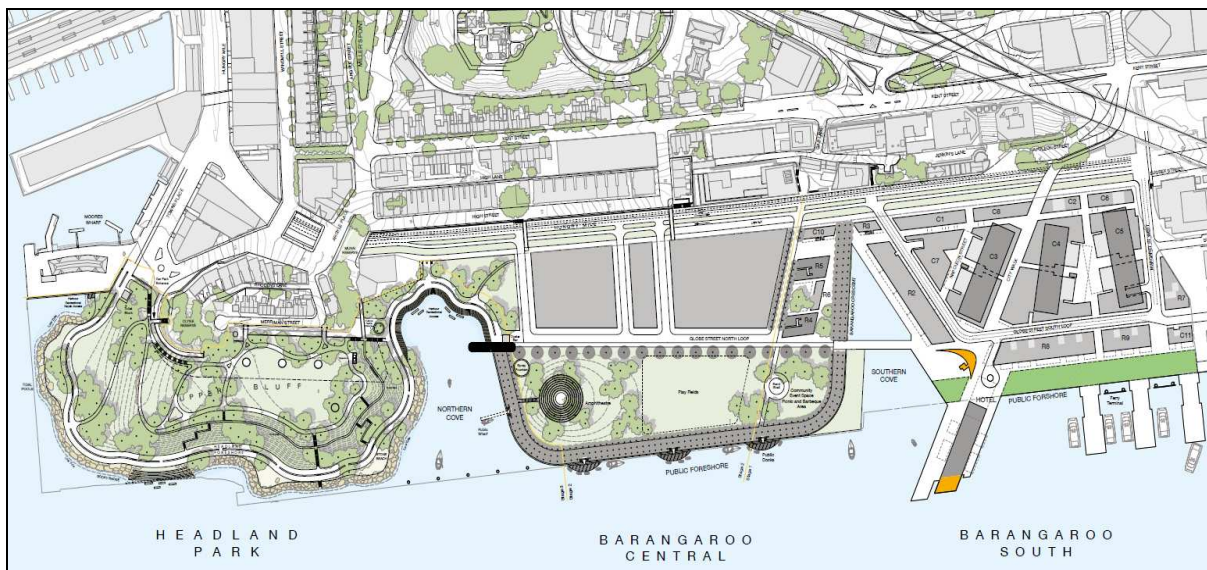


Figure 1: Headland Park and, Northern Cove, Barangaroo Central and Barangaroo South.

The majority of the site is owned by the Barangaroo Delivery Authority (BDA), with small areas owned by Sydney Ports Corporation and NSW Maritime. The Sydney Ports Harbour Control Tower and Moores Wharf, which is used for navigation and port safety operations, are both located within the area of the Headland Park and are still used by Sydney Ports Corporation.

The northern most part of the shoreline originally jutted into the Harbour to the west forming a headland with a large hill on the point. The previous use of the site for shipping purposes saw the gradual removal of the headland. As a result, there is a large sheer cliff at the eastern end of the site as against a rocky landscape that joined the shoreline much less dramatically. Nearby Balls Head and Berry Island Reserve are comparable to the topography of the original shoreline (refer to **Figure 2**).

The northern part of the Headland Park site adjoins the curtilage of the relocated Moores Wharf to the north-east and the sandstone cliff of Millers Point to the east which rises approximately 18m above the site. Sydney Harbour is located immediately north and west of the site and Hickson Road runs along the eastern edge of the site. Further to the east above Hickson Road is the historic Millers Point precinct, which is predominantly a residential area characterised by small terraces (refer to **Figure 3**).

Further to the east are a range of commercial and tourism uses, including Observatory Hill and the Bond Building. To the south, the site is adjoined by Darling Harbour Wharf 5 which is currently being used as an interim Cruise Passenger Terminal.

The Barangaroo Foreshore Walk, which was opened in late 2009, traverses the site adjacent to the harbour's edge. The walkway is an interim structure to allow public access to Barangaroo as the site develops and evolves. The walkway connects King Street Wharf to the south with Towns Place to the north and provides a series of east-west connections. The Walk is delineated by temporary fencing, which runs the length of the site and which can be moved as required (including when passenger cruise ships are in berth).



Figure 2: View from Balls Head of the Headland with Goat Island in the foreground



Figure 3: View of the existing headland site from East Balmain

1.1 Planning History

Following from the approved Concept Plan, the Minister for Planning, on 11 November 2009, approved a modification to the Concept Plan that was primarily aimed at achieving a more naturalised design for the northern headland. The modification was prepared in response to the Minister's Terms of Approval requiring further detailed design for the Northern Headland and Northern Cove, particularly:

- The reinstatement of a headland at the northern end of the site with a naturalised shape and form including a build up of height and a generous landscaped connection to physically link Clyne Reserve, to allow direct pedestrian access from Argyle Place and appreciation of the landform of the former headland; and
- An enlargement of the Northern Cove and a greater naturalised shape, form and edges including treatment surrounding the cove.

The approved modified design for the Headland Park and Northern Cove also resulted in the following amendments to the approved Concept Plan:

- The removal of Block 8 and part of Block 7; and
- In principle agreement to the demolition of three items, which are listed on Sydney Ports and Sydney Water Section 170 Heritage Registers - the Sydney Ports Harbour Control Tower, the Sydney Water Sewage Pumping Station and the sandstone seawall along the north-western edge of the site. The in principle agreement is subject to heritage impact assessment and consideration of options for reuse/ relocation.

The project application (MP10_0047) for the Headland Park Early Works was approved by the Minister for Planning on the 8 November 2010.

The project application comprised the following early works for the creation of the Barangaroo Headland Park:

- Demolition of above ground structures and establishment of a construction compound including sheds and site hoardings;
- Bulk earthworks, including placement of fill as part of the formation of the final landform;
- Extraction of approximately 60,000m³ of sandstone from beneath the existing concrete apron for reuse within the Barangaroo site; and
- Heritage protection, including relocation of the existing Sewage Pumping Station.

An amendment to the Concept Plan (Amendment 4) was approved on 16 December 2010. However, the amendments did not involve the area which the proposed Headland Park will occupy.

2. PROPOSED PROJECT

2.1 Project Overview

The BDA is seeking project approval for main works to create the Headland Park and Northern Cove. The development proposal comprises the redevelopment of the northern part of the Barangaroo site for a new public park in the form of a naturalistic headland with a future cultural space and car parking within the headland, and the creation of a new water intervention, the Northern Cove.

The Northern Cove will continue the naturalistic approach of a rocky shoreline until it reaches the northern edge of Barangaroo Central where a more formal edge treatment will be employed. The cove is designed to allow access for most leisure craft including small yachts, kayaks and motor boats.

The proposal includes all works required to construct the final landform, including the park and northern cove and seeks approval for the final land use. In addition, the works include construction of a car park with up to 300 spaces and a space for a future use (as a cultural facility which will be subject to a separate project application) within the Headland (i.e. below finished ground level adjacent to the existing sandstone cutting). Such works include:

- Land formation utilising fill from Stage 1, ranging from the 150,000m³ identified in the Early Works application to approximately 230,000m³ (additional 80,000m³) along with excavated material from the Headland Park site itself (120,000m³) to build the headland up to finished levels for a nominal one metre topsoil layer (total fill of 350,000m³);
- Construction of structural earth retaining walls utilising sandstone based materials;
- Creation of a naturalistic shoreline and northern cove through excavation and formation of retaining walls using boulders;
- General landscaping and planting;
- Construction of a network of pedestrian pathways connecting the foreshore walkway and surrounding areas (refer to **Figures 4 & 5**);
- Construction of a shoreline promenade with dual use pedestrian path and cycleway (refer to **Figures 6 & 7**);
- Jetty / viewing platform and public wharf extending into the Northern Cove from the southern shoreline;
- Construction of a car park totaling up to 300 spaces within the headland with vehicular access from Towns Place and pedestrian access from various locations within Headland Park (refer to **Figures 11,13 & 14**);
- Location and use of the former Sydney Water Sewage Pumping Station for the purposes of an amenities building;
- Construction of a space for a future use (cultural facility) comprising initially 75,000m³ and ultimately up to 100,000m³ (refer to **Figures 12, 13 & 14**);
- Installation of relevant services and infrastructure;
- Construction of the services and piping/pumping infrastructure associated with the air conditioning system (cooling water inlet/ outlet) for the future cultural facility and car park; and
- Site remediation for limited contamination of fill material previously identified on the Headland Park site.

The proponent has submitted that the Sydney Harbour Control Tower will remain on site and be operational in accordance with Sydney Ports Corporation's requirements until future modification for reuse or demolition is required. Any changes to the Sydney Harbour Control Tower will be the subject of a separate application.

2.2 Park Design

The design of Headland Park and Northern Cove has been given considerable consideration by the Department in the terms of its sustainability and objectives against the Concept Plan. As part of this process, the proponent has submitted a Design Statement which articulates the design philosophy leading to the general design layout included in the Concept Plan.



Figure 4: Proposed Headland Park and Northern Cove

2.2.1 Cultural and recreational needs

The major principles of the Headland Park are to create a naturalistic headland that will primarily accommodate informal recreational activities. The location of the Headland Park and Northern Cove in relation to the City Centre will express a natural setting combined with the foreshore thus offering a significant opportunity for a range of activities by a wide gamut of end users.

In expanding on the end users of the subject sites, a 'Outline of Recreation Planning Issues' report has been prepared that identifies expected users of the site and key recreational participation trends that are to be met in the design of the Parkland and the overall recreational contributions within the Barangaroo site. Generally, the Headland Park has been designed to cater to the passive recreational needs of the city workers, residents tourist and the broader Sydney community.

2.2.2 Landscape design

The Headland Park is set to enhance and contribute to the city centre green space and will reconnect the local and surrounding precincts resulting in the removal of the physical barrier created by the previous varying industrial land uses of the overall Barangaroo site. A landscape vision has been expanded by a Barangaroo Public Domain Plan, that will be a written document that will influence Public Domain Guidelines and will be expanded as the project progresses (refer to **Figure 7**).



Figure 5: Proposed view from Barangaroo Central Foreshore Walk looking north



Figure 6: Proposed view from Merriman Street to the southwest

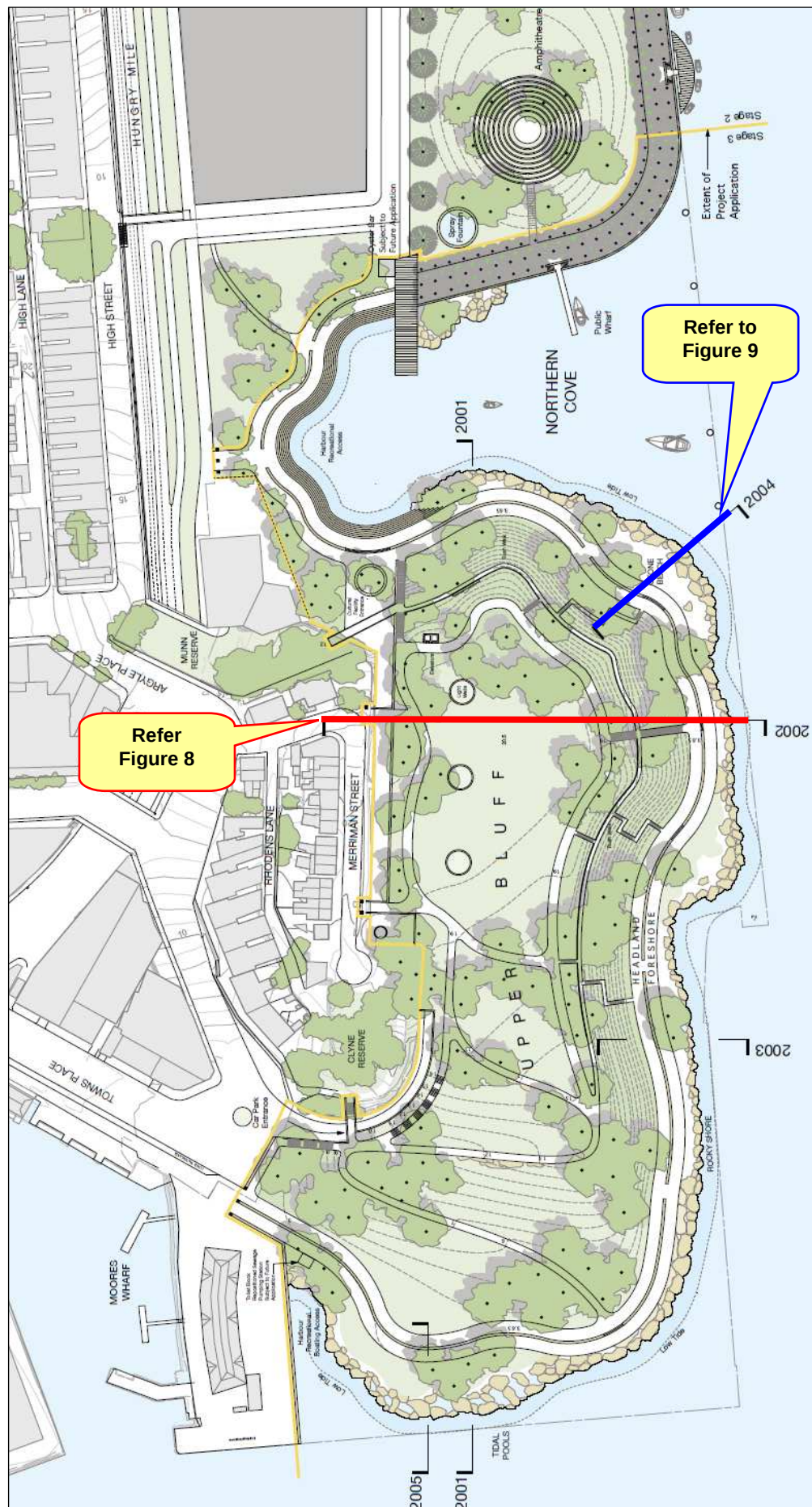


Figure 7: Headland Park and Northern Cove public domain design.



Figure 8: Headland Park (Plan Section No. 2002 - refer to Figure 7 above)

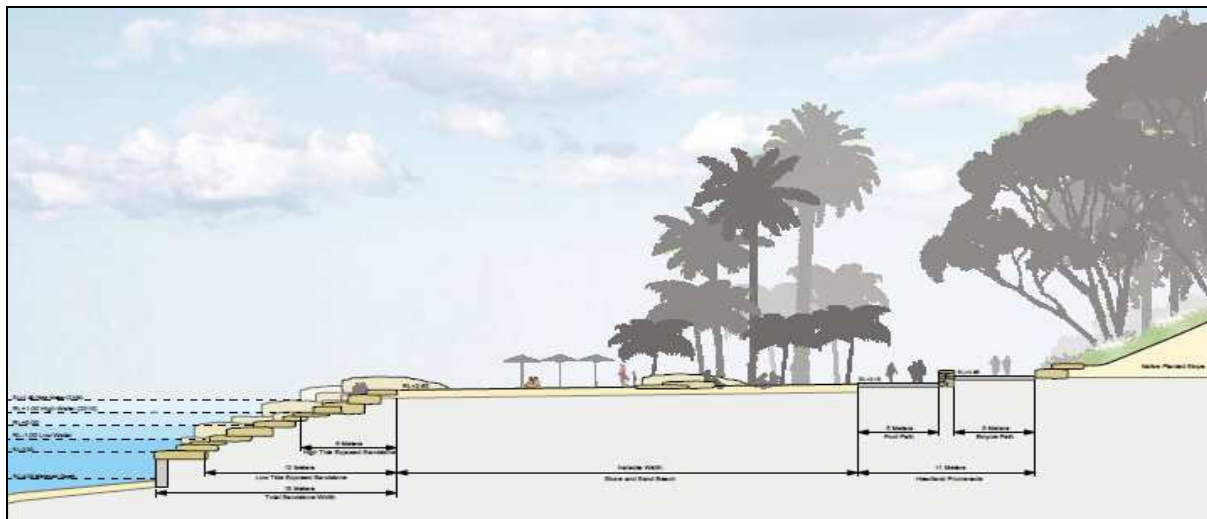


Figure 9: Headland Park (Plan Section No. 2004 - refer to Figure 7 above)

2.2.3 Headland profile and levels

The Barangaroo headland has been designed to generally reflect the 1836 shoreline (i.e. from a point in time before Millers Point began to be significantly altered by human activity) completing the ring of prominent harbour headlands and islands formed by Blues Point, Balls Head, Ballast Point, Illoura Reserve and Goat Island. It will also reconnect the shoreline and pedestrian open space link with Clyne Reserve, Argyle Place and Observatory Hill to the east.

The proposed park is that of a landform sloping gradually upwards at a grade of approximately 1:5 from the north, near Moore's Wharf and rising to an upper 'bluff' at the level of Merriman Street and falling more steeply to the west and south. Around this headland is a relatively flat apron, which extends to the water's edge with a curtilage of a naturalistic rocky shoreline.

The proposed new headland profile has a maximum RL of 20.5 at its highest point adjacent to Merriman Street. Merriman Street has an RL of 19-20 adjacent to the highest point of the park, therefore the maximum height is generally consistent with this level. In this regard, it should be noted that the maximum RL of 20.5 is only proposed in the location of the upper bluff area with the landform sloping gently down to the north (with levels therefore being lower than Merriman Street) and more steeply down to the west. The proposed headland profile is also generally consistent with the levels approved within the Concept Plan Headland Park modification (MP06_0162 MOD 3) which indicates a maximum height of approximately RL 20 but which provides flexibility for future detailed design development (refer to **Figures 7, 8 & 9**).

2.2.4 Accessibility

The Barangaroo Headland has been envisaged as a place for residents and visitors from across the diverse communities of Sydney. It is to be accessible to all parts of Sydney, through different means of transport, at different times of day and anticipating all possible needs. The arrival experience, be it by car through the underground carpark, by public transport along the Hungry Mile or on foot along the foreshore promenade is integral to the overall experience.

The entries into Barangaroo Headland are scaled to different needs as follows:

Primary entries:

- Main entry points from the foreshore promenade and Towns Place
- Sized to accommodate large crowd movements
- Location of main visitor amenities and services

Secondary entries:

- Expand the permeability of the headland and providing access to Millers Point
- Connections to adjacent public spaces of Munn and Clyne Reserves

Tertiary entries:

- Finer grained neighbourhood community connections
- Intimate footpaths to discourage large crowd use

The Headland Park will be accessed by pedestrians and service vehicles from both Towns Place and Hickson Road. The public car park will be accessed from a new roundabout at the junction of Towns Place and Dalgety Road.

The Headland Park itself will contain a series of connected pathways linking the Park with the future cultural facility, existing areas to the east, Barangaroo Central and South to the south, and The Rocks to the north. Equitable access and spaces accessible to all is provided in the Park and the future cultural space (refer to **Figure 10**).

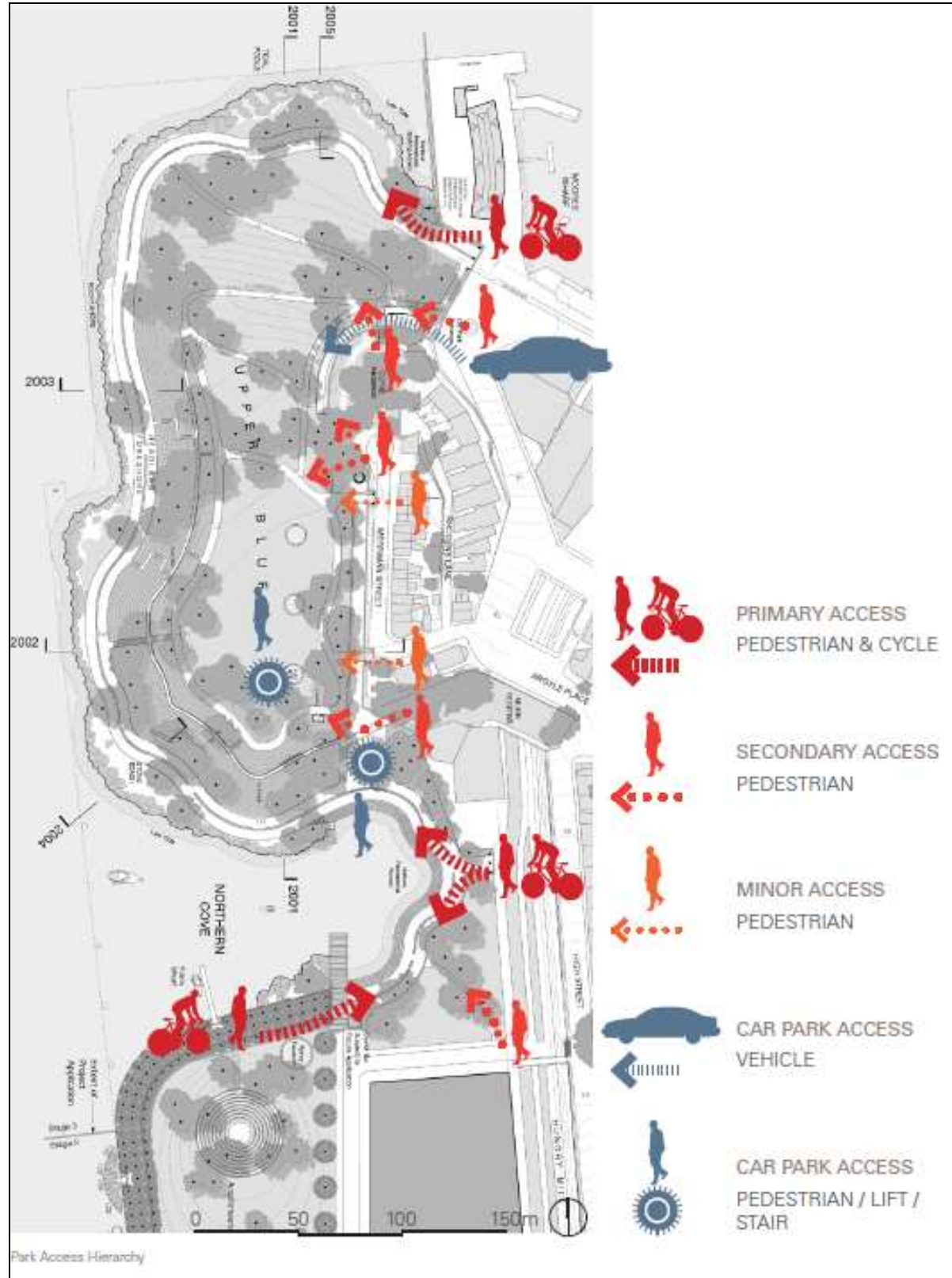


Figure 10: Park access hierarchy

2.2.5 Car park

The proposed internal space to be created within the newly formed headland profile will accommodate an area ultimately of up to 100,000m³ with an initial size of up to 75,000m³ for car parking and cultural floor space. The lower levels of this space will be designed as four half levels of parking space at RL: -1.0, 0.50, 2.0 and 3.5 with a one way circulation system.

The car park is proposed to have a footprint of 10,000-20,000m². The total proposed numbers of cars to be accommodated within the car park is 300 and as such is consistent with the approved Concept Plan. The car park would be accessed by vehicles off Towns Place via a new roundabout entrance road.

Pedestrian access is proposed from various locations within Headland Park through a network of pedestrian pathways. Direct pedestrian access would also be provided from the future cultural facility. The car park would draw in fresh air along the thermal mass of the sandstone escarpment and the used air exhausted through the western air plenum (refer to **Figures 11, 13 & 14**).

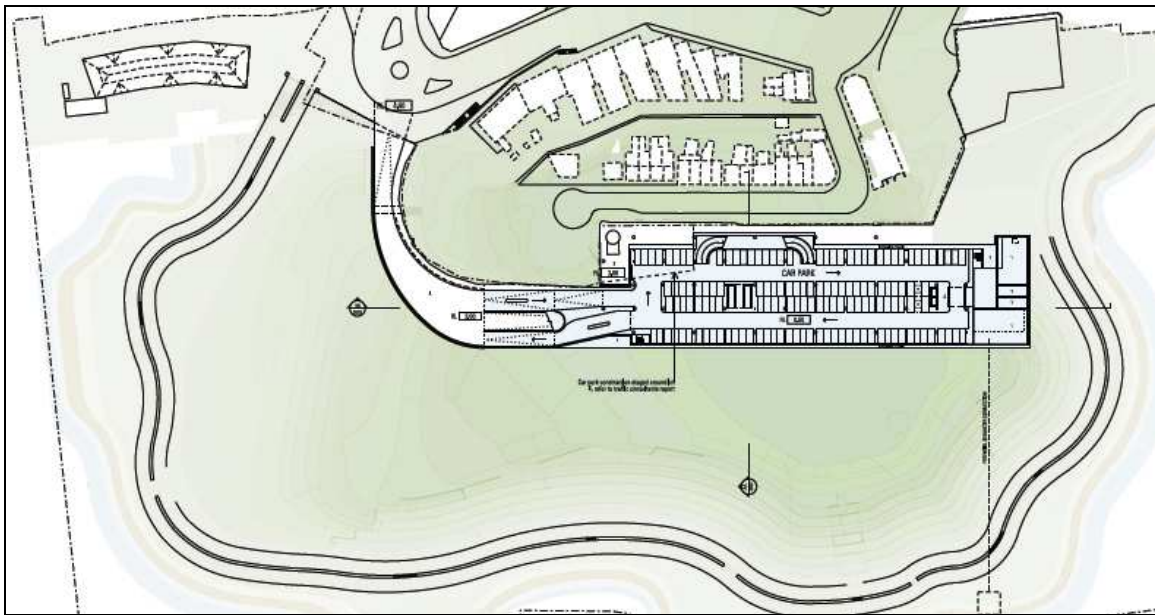


Figure 11: Basement level 1 of 2 level car park

2.2.6 Cultural space

Located above the proposed car park, it is proposed that a void space be created within the headland profile adjacent to the sandstone cutting for a future use as a cultural space. The design of the cultural space provides for a flexible framework that can be developed incrementally. It provides an internal space initially of up to 75,000m³ with a maximum volume of 100,000m³.

The space is to have an atrium area 10m wide with glass roof over the full height above existing ground level adjacent to the Millers Point sandstone escarpment (cutting) to reveal and allow reading of this existing site feature. This would allow daylight into the space and natural ventilation. In the initial stage, the space would be constructed as a simple core and shell and could potentially have an interim use for events (subject to separate approval).

The proponent submits that the layout and use of the cultural space is yet to be determined and would be the subject of a future project application. However, for the purposes of this project application, approval is sought for a cultural space area (refer to **Figures 12, 13 & 14**).

In summary, it is proposed that a space will be constructed within the headland adjacent to the sandstone cutting which will allow for a future community use. In the first stage (as part of this project application), the lower levels of this space would accommodate a car park with a capacity of 300 cars within a 10,000m² – 20,000m² footprint. It is intended that a second stage would allow for the expansion of the area consistent with the final landform design, increasing the space to up to 100,000m³.



Figure 12: Cultural Facility indicative floor plan.

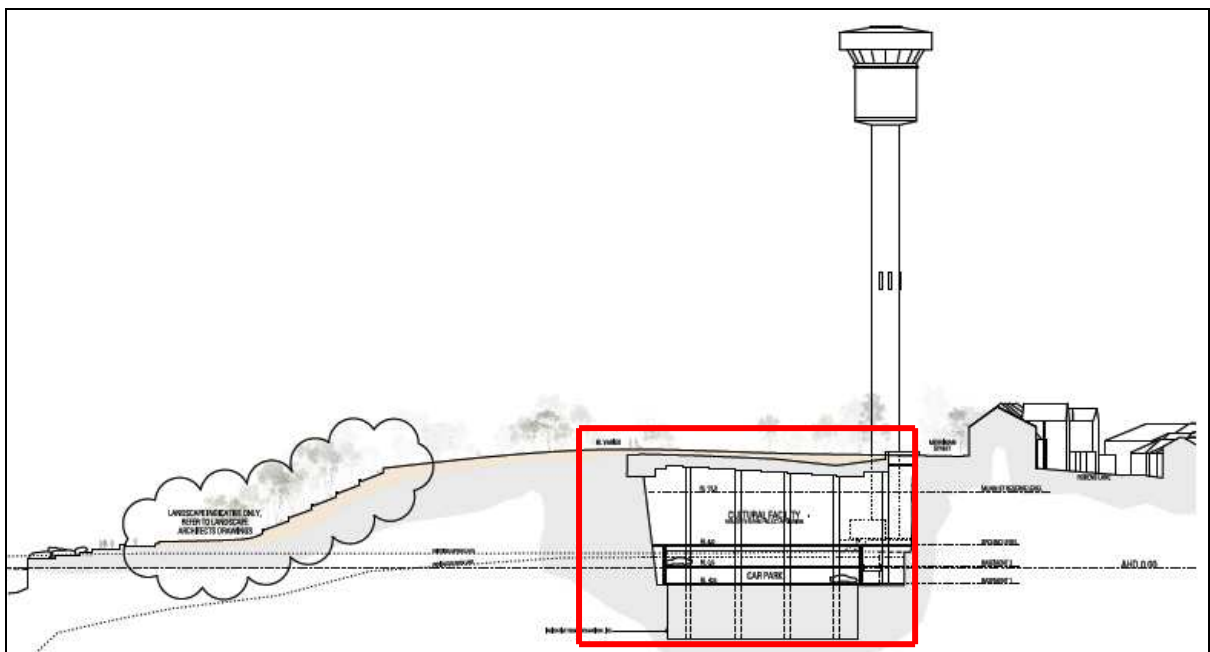


Figure 13: Headland Park cross section of car park and cultural facility

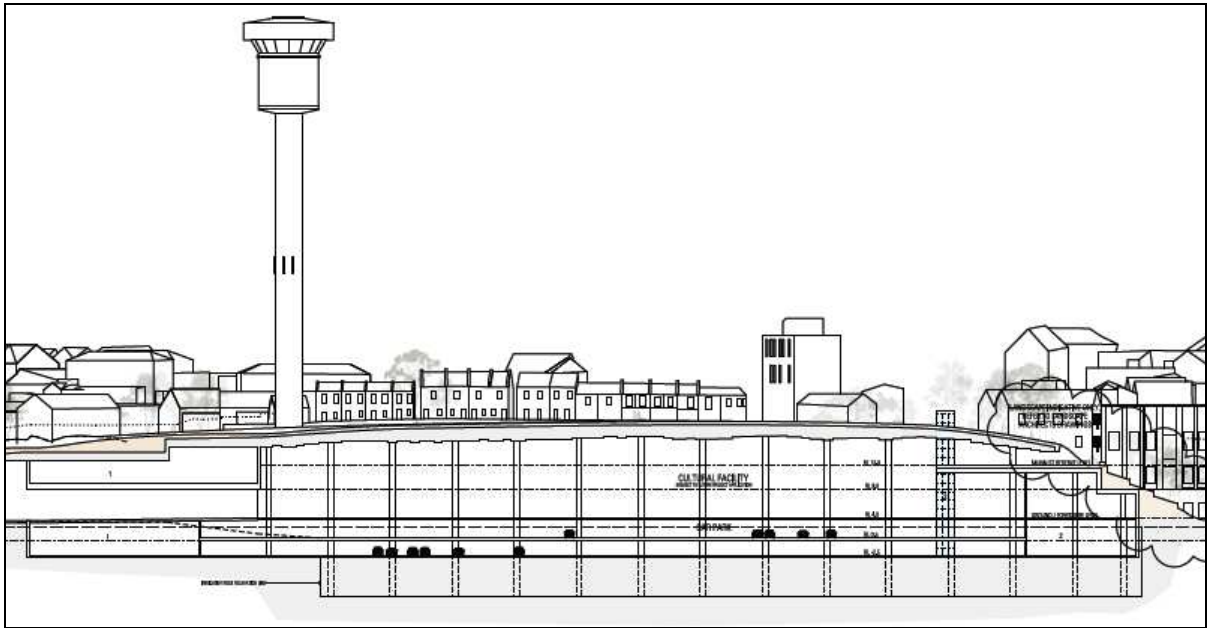


Figure 14: Headland Park longitudinal section of car park and cultural facility

2.2.7 Sewage pumping station location and use

The proposal includes the decommissioning and relocation of the historic Sewage Pumping Station (SPS) superstructure (which was proposed to be removed as a whole and stored in a temporary location as part of the Early Works application) to the north-eastern boundary of Headland Park site in the vicinity of Moore's Wharf (refer to **Figure 15**).

It is proposed that the superstructure be used as an amenities building (public toilet). Approval is sought for the location and the use but the actual works to the building will be subject to a future application. The heritage impact of the proposed location and use has been considered in the Heritage Impact Statement. The proposed use will be entirely within the existing structure of the SPS thus, allowing the structure to be viewed in context of the site while providing an economic and practical use for the building, and retaining the building's association within the site.



Figure 15: Sewage pumping station

2.3 Park operation

2.3.1 Future ownership and maintenance

It is proposed that the new Headland Park will be owned by the Barangaroo Delivery Authority but managed on a day to day basis by the State Government. The management arrangements would be clarified in the Plan of Management to be prepared for the Parkland.

2.3.2 Hours of operation

It is proposed that the new Headland Park will be open to the public 24 hours a day 7 days a week.

2.3.3 Operational management

The proponent submits that a Plan of Management will be prepared to guide the ongoing operations and management of the Headland Park prior to opening of the park to the public. The plan would outline matters such as the vision for the parkland, key objectives, identify specific areas and appropriate uses, hours of operation and security arrangements and event management measures (including timing and size of event, expected numbers, risk emergency and security management, waste management). The requirement for this plan has been included in the proponent's Statement of Commitments.

2.4 Construction

2.4.1 Excavation, filling and land formation

The main area of excavation relates to the creation of the naturalistic shoreline and the Northern Cove with excavation proposed to a level 2 m below sea level (RL-2.0) to create the new shoreline and cove. Other minor landside excavation is also envisaged. In total, it is estimated that up to 120,000m³ of excavation will be undertaken as part of the proposed Main Works on the Headland Park site.

The proposed filling for the Main Works is in addition to the receipt and placement of up to 150,000m³ of fill from Stage 1 (basement car park) as provided for in the Early Works Project Application (MP10_0047). Fill created on site through excavation of the shoreline and Northern Cove will be used to form the final landform in addition to a further 80,000m³ to be transported from Stage 1.

In total, there is approximately 350,000m³ of general fill to be placed including top soil. The proponent has submitted a summary of the proposed fill requirements in addition to provisional allowance for materials that may need to be imported to the site, should material not be suitable (**Table 1**).

Table 1: Earth works, fill and import requirements

	Stage 1	Stage 3	Total	Import / Export (provisional)
Early Works	150,000m ³	0	150,000m ³	0
Main Works	80,000m ³	120,000m ³	200,000m ³	▪ 10,000m³ topsoil* (import) ▪ 1,000m³ bulk natural sandstone (import) ▪ 35,000m³ fill** (import additional from Stage 1/export unsuitable material off site) ▪ 21,000m³ rock armour*** (import)
Total	230,000m ³	120,000m ³	350,000m ³	67,000m ³

* Should Stage 1 not provide adequate materials for topsoil then importation from an external source will be required

** Should excavation of the Northern Cove provide unsuitable materials then it will require removal from site. In this case more general fill from Stage 1 will be required

*** Should sandstone excavation at Stage 3 not provide suitable rock armour, additional material may need to be imported. This would correspondingly reduce the amount of sandstone excavated.

Total material imported from Stage 1 is estimated to be up to 230,000m³ (including the 150,000m³ the subject of the Early Works application plus a further 80,000m³ as part of the Main Works). As part of the shoreline works, the existing heritage listed sandstone seawall (western side) will be stabilised and partially dismantled to RL 2.0. Retrieved sandstone blocks will be reused on site and incorporated into the Headland Park works. Temporary retaining walls and infrastructure works will be removed as part of the proposed works.

2.4.2 Services and Infrastructure

Stormwater

Stormwater will be provided as follows:

- By a network of bio-retention swales on an overall nominal width of 3.6m inclusive of banks at high level to contain high flows up to the 1 in 100 Year ARI event from the Upper Bluff;
- Provision of a network of half round 300mm wide dish drains and 150mm subsoil drainage with interconnecting pits and pipes as shown on Drawing MW-WSP-H-1039 to adequately drain low flow and moderate flows up to the 20 Year ARI event within the terraced lower slopes of the park; and
- Provision of a network of bio-retention swales of an overall nominal width of 3.6m inclusive of the banks at the toe of the grass zone of the park where it meets the two level bicycle and walking paths.

Sewage

Sewage works proposed as part of this Main Works application include the decommissioning and re-use of existing services as well as the construction of new services. Works include the following:

- Decommissioning of the existing SPS0014 super structure and relocation for adaptive reuse within the Barangaroo site (part of Early Works application);
- Possible reuse of SPS0014 substructure as a water tank or backfilling of this SPS0014 substructure;
- Decommissioning of the existing Sydney Water 300mm diameter gravity reticulation sewers traversing the site from the Hungry Mile and Towns Place;
- Decommissioning of the existing Sydney Water 400mm diameter overflow sewer discharging to Darling Harbour;
- Diversion of the existing 150mm diameter Bettington Street sewer onto the Hungry Mile and connection into the new gravity system within the Hungry Mile;
- Construction of approximately 760 meters of new gravity reticulation sewer by traditional construction or micro-tunnelling from Towns Place (intersection Dalgety Road) in a south east and southerly direction along the Hungry Mile and connection to SPS1129;
- Construction of approximately 100m³ of additional overflow storage to increase the detention time within SPS1129 and satisfy Sydney Water requirements;
- Review by Sydney Water of the pumping machinery capacity and possible upgrade of the flow capacity by an impeller upgrade, installation of an additional pump or complete upgrade of the existing pumping machinery; and
- Possible upgrade of the existing electrical equipment and communication equipment, i.e. SCADA.

Electrical and lighting

The proposed electrical works include:

- Establishment of the Underground Car Park and the future Cultural Centre shell-only, including establishment of chamber substation for permanent supply;
- Establishment of new sewer pump station;
- Establishment of on-site renewable energy generation in the form of photovoltaics where possible;
- Foreshore promenade and café/kiosk (oyster bar);
- Parkland and Upper Bluff interconnections to Merriman Street; and
- Re-configuration of electrical supply to the Maritime Control Tower.

Communications

The proposed communications infrastructure works includes security and ICT infrastructure. A system shall be provided for the public domain/carpark which will include CCTV monitoring, access control, communications links (with external monitoring) and a building distributor room to accommodate the main distribution frames (MDF) and provider head end equipment.

External lighting in the Public Domain will be adjusted to meet the minimum level required for effective CCTV operation. External passive security will be provided through perimeter landscape features and lighting.

Civil works

The civil infrastructure works include the provision of fill batter slopes set up at a ratio of 1:1.5 where tensile reinforcement is proposed. Temporary erosion and sediment control measures will be implemented for the earthworks construction phase. Temporary measures are likely to include:

- Construction access controls;
- Temporary basins;
- Silt control fencing; and
- Control drainage measures.

2.4.3 Waterfront and maritime design / engineering

The design for the Headland Park is to create a headland similar to other major headlands in Sydney Harbour. At the shoreline, these parks are typified by horizontal rock platforms and pools stepping down into the harbour with underwater slopes and cliffs dropping to the harbour floor. The design replicates this form, with rock quarried on the site used to form the platforms. The existing quay line formed by concrete caissons is to be cut down and the fill material behind excavated to form the new harbour floor. The harbour floor and submerged embankment will be protected by rock armour (refer to **Figure 16**)

Above low water

For visible sections of the shoreline, a naturalistic structure is proposed. A moderate slope will be created (approximately 1 in 3 to 1 in 4) with large flat rocks forming steps and rock pools. The large sandstone rocks required to create the landform will be sourced from site as part of Barangaroo Headland Park and Northern Cove – Main Works. The rocks that form the edge will be fixed on a gravel bed of approximately 1m, and then further secured by forcing down with an excavator bucket.

Below low water

On the western and northern sides of the site, the proposed shoreline is close to or above the existing caissons. These caissons retain the fill behind them, under the existing hardstand area and cannot be removed. It is therefore proposed to retain as much of the existing caisson structures as possible cutting them down to just below the lowest tide level.

The proposed methodology is to remove sand fill within the front row of caisson compartments down to 0.8m below the design finished levels, place 0.8m of concrete over existing sand fill, pumped into place. This will lock the existing caisson structure together at that level. The caisson wall will then be demolished down to the design level. The top of the caissons are not structural so that local deterioration of the concrete and reinforcement will not be an issue. The back row of caisson compartments will be excavated to one metre below the design level and filled with one metre of rock armour over geotextile fabric (refer to **Figure 16**).

Embankment and new harbour floor

For the section below low water an embankment with rock ballast and facing solution is proposed. The construction methodology for the new shoreline and Northern Cove is detailed in the Maritime Design Report and also summarised in the Soil and Water Report.

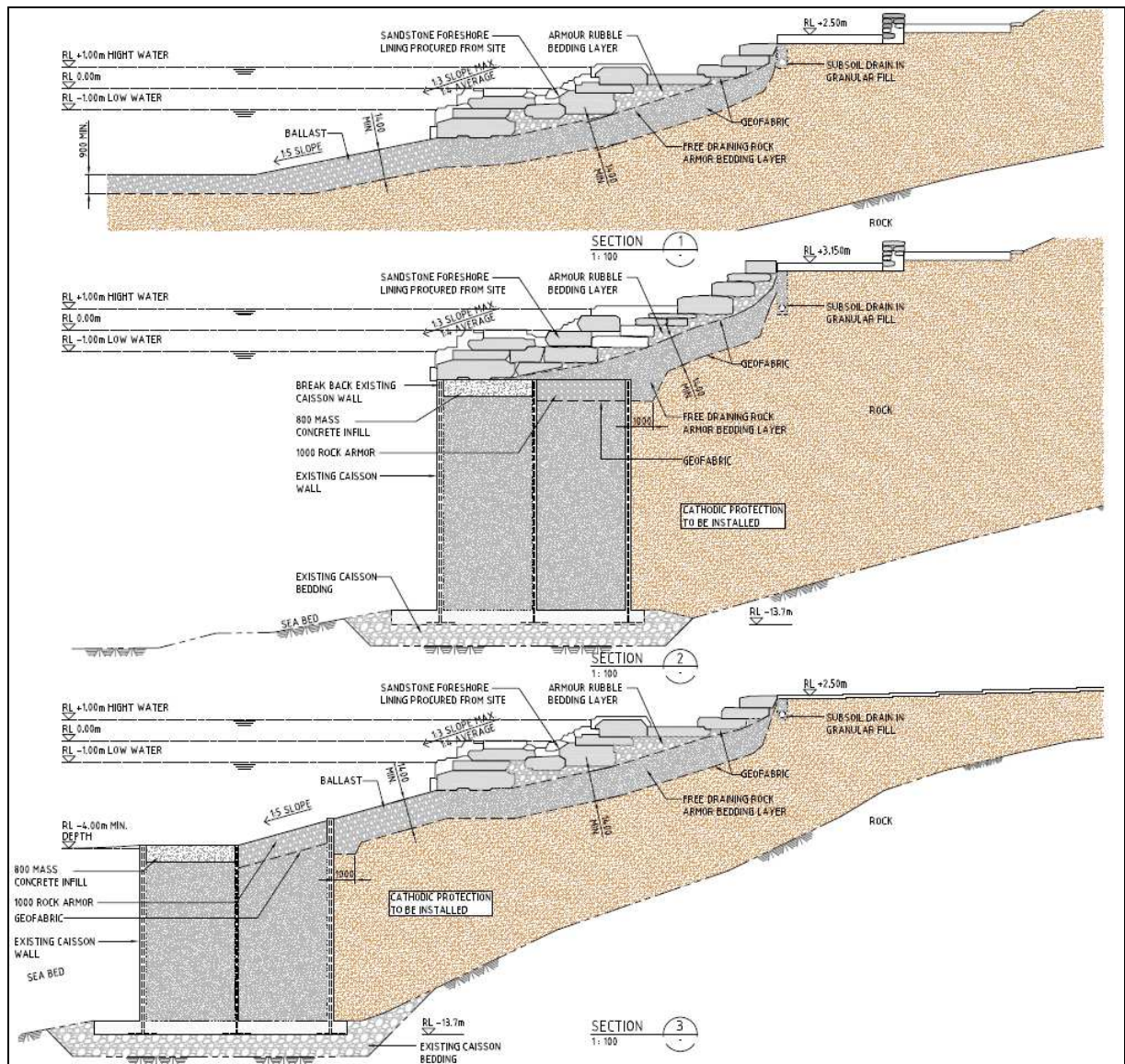


Figure 16: Headland Park Marine Works when sectioned north of the Northern Cove inlet

2.4.4 Staging

The Main Works phase of the Headland Park and Northern Cove construction requires staging and sequencing in order to deliver the park in the most efficient and effective way. The Main Works will be constructed in distinct phases and within each phase sequencing of the works will be necessary. **Table 3** outlines the proposed sequencing of key activities by the proponent, taking account of works which form part of the previous Early Works application.

Key Stages	Sequencing of Key Activities
Main Works from April 2011	Continue receipt of approved fill from Stage 1 until no longer required
	Commence new shoreline construction
	Commence Northern Cove excavation
	Fill placed in the Sandstone extraction pit
Buildings and Landscaping from April 2012	Carpark and structures
	Hard and soft landscaping
	Excavate Northern Cove and construct new Shoreline
	Construct public wharf facility
	Soft and hard landscape maintenance
Establishment Period 2014 to 2017	Decreasing degree of maintenance as Hard and Soft landscape elements 'settle-in'

Table 3: Main Works staging and sequencing

2.4.5 Temporary facilities and structures

Construction contractors will be required to undertake a number of preparatory activities and to temporarily store materials for the use in the Headland Park project. An example of such works and temporary structures include;

- Office and administrative functions;
- Parking for staff and construction vehicles;
- Workshops and maintenance areas;
- Storage and handling of sandstone and other rock for landscaping and armouring purposes;
- Storage and handling of fill and topsoil;
- Environmental management;
- Office compounds and amenities area;
- Water treatment facilities, including tanks and sediment basins;
- Low retaining walls for stockpiles;
- Hoardings (type A and B) and fencing; and
- Temporary bunding waste storage areas.

The office compound would be located at the south-eastern end of the site and the water treatment facilities would be located on the western and northern edges of the site adjacent to Darling Harbour. The sandstone stockpiles are to be located near the north shore of the Northern Cove. Hoardings and fencing would be used to secure the construction site.

2.4.6 Seawater cooling system

With regards to the proposed cultural facility and underground car park, it is proposed to accommodate a seawater cooled air conditioning system. While it is expected that this facility will not be built for three to four years it is necessary to construct the services and piping/pumping infrastructure associated with the air conditioning system (cooling water inlet/ outlet) as part of the current development.

3. STATUTORY CONTEXT

3.1 Major Project

When granting approval for the Concept Plan for the Barangaroo site (MP06_0162) the Minister for Planning determined, pursuant to section 75P(1)(b) of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), that approval to carry out the project or stages of the project with a capital investment value of less than \$5 million, is subject to Part 4 or 5 of the EP&A Act. The capital investment value of the Project Application is \$92,508,280. Accordingly, Part 3A of the EP&A Act applies to the proposal and the Minister is the approval authority.

3.2 Permissibility

The Barangaroo site is listed as a State Significant Site under Part 12 of Schedule 3 of the Major Development SEPP. The SEPP zones the Project Application site as RE1 Public Recreation. The proposed main works are permissible with approval.

It should be noted that since exhibition of the Main Works EA, the zoning for Barangaroo has been amended. However, the Headland Park and Northern Cove continue to be zoned RE1 Public Recreation under the amended zoning.

3.3 Environmental Planning Instruments

Under Sections 75I(2)(d) and 75I(2)(e) of the EP&A Act, the Director-General's report for a project is required to include a copy of, or reference to, the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project, and the provisions of any environmental planning instruments (EPI) that would (except for the application of Part 3A) substantially govern the carrying out of the project and that have been taken into consideration in the assessment of the project.

The primary environmental planning instruments guiding the assessment of the proposal area:

- Protection of the Environment Operations Act 1997 (POEO Act);
- State Environmental Planning Policy (Major Development) 2005 (MD SEPP);
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy No. 55 – Remediation of Land; and
- State Regional Environmental Plan (Sydney Harbour Catchment) 2005.

The Department has considered the proposal against the objectives and aims of these instruments, and is satisfied that the proposal, subject to the implementation of the recommended conditions of approval, is generally consistent with the provisions of these instruments.

The Department's consideration of relevant SEPPs and EPIs is provided in **Appendix D**.

3.4 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

(a) *to encourage:*

- (i) *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,*
- (ii) *the promotion and co-ordination of the orderly and economic use and development of land,*
- (iii) *the protection, provision and co-ordination of communication and utility services,*
- (iv) *the provision of land for public purposes,*
- (v) *the provision and co-ordination of community services and facilities, and*
- (vi) *the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- (vii) *ecologically sustainable development, and*
- (viii) *the provision and maintenance of affordable housing, and*

- (b) *to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and*
- (c) *to provide increased opportunity for public involvement and participation in environmental planning and assessment.*

The Department has considered the objects of the EP&A Act and considers that the application is consistent with the relevant objects. The assessment of the application in relation to these relevant objects is provided in Section 5 of this report.

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- (a) *the precautionary principle - namely, 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. In the application of the precautionary principle, public and private decisions should be guided by:*
 - (i) *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
 - (ii) *an assessment of the risk-weighted consequences of various options,*
- (b) *inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,*
- (c) *conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*
- (d) *improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:*
 - (i) *polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*
 - (ii) *the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,*
 - (iii) *environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

An ESD report was submitted with the EA, which outlines the principles to be incorporated into the Main Works project. The report will further investigate the requirements of the site to mitigate future risks associated with climate change and sea level. The following sustainable practices are:

- Sea level rise;
- Energy and Carbon;
- Water; pollution and waste;
- One planet living; and
- Construction practices.

As part of the Main Works proposal, the proponent will endeavour to minimise energy consumption through the following infrastructure services:

- A minimum of 20% of car space will be electric vehicle parking stations;
- Efficient lighting systems;
- BMS control of services and sub metering;
- Low energy ventilation and air-conditioning systems;
- Carbon monitoring and variable speed drives on fans on each level of the carpark will be used to adjust the level of ventilation required to maintain safe conditions. Patrons will be encouraged to use the upper floors of the carpark when not at capacity which will allow the lower level carpark ventilation to be minimised;

- The light fittings will be fitted with dimmable ballasts which will be controlled by photocells to maintain required light level over life of lamp, saving energy and extending the life of the lamps. Light levels will be adjusted to provide comfortable conditions down to a minimum of 40 Lux as required by the standard.
- Carpark lighting will be controlled by time clock and occupancy sensors allowing separate control of each carpark level. Patrons will be encouraged to use the upper floors of the carpark when not at capacity which will allow L2 carpark lighting to be minimised; and
- Harbour heat rejection.

On the basis of an assessment of the above ESD report and the above energy minimisation services, the Department is satisfied that the proposal encourages ESD and in accordance with the objects of the EP&A Act. The ESD report and annexure will form part recommended conditions of approval.

3.5 Statement of Compliance

In accordance with Section 75I of the EP&A Act, the Department is satisfied that the Director-General's environmental assessment requirements have been complied with.

3.6 Consistency with approved Concept Plan

The proposed Headland Park Main Works and Northern Cove are consistent with the terms of approval of the Barangaroo Concept Plan as they will facilitate the future development of the Headland Park as reflected in the approved Concept Plan (as modified). It is noted that the recent amendment to the Concept Plan (MP06_0162 MOD 4), does not alter the terms of the Headland Park and Northern Cove project development.

3.7 Project need and justification

Barangaroo is identified in the Metropolitan Plan for Sydney 2036 and also an important part of the "Global Sydney" Strategic Centre identified in the draft Sydney City Subregional Strategy. The proposed Headland Park Main Works is consistent with the Concept Plan approval for the site and will enable commencement of works to provide for the ultimate delivery of major new parkland for the people of Sydney on the western edge of the CBD. Regionally, there are limited sites which can provide significant new foreshore open spaces and linkages within the CBD. Barangaroo's waterfront location, size, and position on the western edge of the CBD means it presents an opportunity to deliver significant new recreational opportunities for Sydney.

4. CONSULTATION AND SUBMISSIONS

4.1 Exhibition

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the environmental assessment (EA) of an application publicly available for at least 30 days. After accepting the EA, the Department publicly exhibited it from 10 November 2010 until 10 December 2010 (31 days) on the Department's website, and at the Department's Information Centre and the City of Sydney Council office. The Department also advertised the public exhibition in the Sydney Morning Herald and the Daily Telegraph on the 10 November 2010, and notified landholders and relevant State and local government authorities in writing.

The Department received twenty-three (23) submissions during the exhibition of the EA with seven (7) submissions from public authorities and sixteen (16) submissions from the general public and special interest groups.

A summary of the issues raised in submissions is provided below.

4.2 Public Authority Submissions

Seven (7) submissions were received from public authorities. A summary of the issues raised in the submissions is provided below and a link to the submissions is included in **Appendix B**. The Department's consideration of key issues raised in submissions is contained in **Section 5** of this report. Appropriate conditions of approval have been recommended where requested by agencies.

City of Sydney Council

The City of Sydney has made a submission on the project application and has provided specific comments on:

- Urban Design;
- Heritage;
- Traffic, Transport and Parking; Trees and Landscaping; and
- Public Domain.

These issues are discussed in more detail under **Section 5** of the assessment report.

Department of Environment, Climate Change & Water (DECCW)

The key issues are highlighted below.

- Contamination – DECCW is concerned that the draft Remedial Action Plan (RAP) accompanying the EA is preliminary and lacking in detail. DECCW requires that all plans are reviewed and approved by the NSW EPA accredited Site Auditor and that all plans and works are prepared and conducted in accordance with the NSW endorsed guidelines.
- Waste Management – As there is the potential for waste to be imported and exported elsewhere, DECCW requires that the proponent ensures that all waste coming to the site can be received and disposed of in accordance with the *Protection of the Environment Operations Act (POEO Act)* 1997 and especially the Resource Recovery Exemption mechanism. Further, should there be a need to dispose soil from the site, it will need to comply with the Waste Classification Guidelines. DECCW have also raised that if such soil is removed from the site, the proponent will need to apply for a *site specific immobilisation approval* as the general approval for the gasworks waste may not apply to this material, as it may contain contaminants other than those listed in the general approval.
- Noise and Vibration – From the submitted Noise and Vibration Assessment report accompanying the EA, DECCW notes that significant exceedances of the construction noise criteria are predicted due to rock hammering. DECCW recommends that restriction on hours for rock hammering may be an appropriate condition. In addition, the vibration criterion is significant in terms of the continuous and intermittent vibration activity. DECCW recommends Vibration Dose monitoring be undertaken at residences in High Street.
- Air – Due to the predicted large exceedances of DECCW's air quality assessment criteria, DECCW recommends that the assessment should:
 - a). be revised to address all technical issues detailed in DECCW's attachment accompany there submission; and

- b). the assessment be revised to demonstrate that proper management of the project related activities and works will not cause additional exceedances at nearby sensitive receptors.
- Water – DECCW is yet to review the Human Health and Environmental Risk Assessment (HHERA) Report. The proponent has now submitted a copy of the HHERA report to DECCW via the PPR.

Further comments will be provided under **Section 5** of the assessment report in relation to DECCW's comment to the PPR.

NSW Maritime

NSW Maritime in general raise no objection however, concern was raised over the design of the Northern Cove. Based on the documentation, the depth throughout the Northern Cove is unclear. NSW Maritime has a preference to maintain a sufficient depth to allow some navigation throughout this area

In addition, NSW Maritime submits that there is potential to provide further protection for the cove through building out part of the shoreline. Cutting the existing caissons to just below the low tide level, rather than the bed level of the cove itself also has the potential to cause a significant navigation hazard and should be reconsidered.

Sydney Ports

Sydney Ports has raised a number of areas where the proposed development has the potential to impact on Sydney Ports' landholdings and port operations at the Harbour Control Tower (HCT), Moores Wharf facility and the interim Cruise Passenger Terminal (CPT). The key issues are:

- Noise – Sydney Ports is concerned that the proposed development will generate noise exceedances above acceptable agreed levels. This requires the proponent to detail noise mitigation measures in the Preliminary Noise and Vibration Management Plan. In addition, Sydney Ports requests that the proponent undertake noise monitoring at the Harbour Control Tower (HCT), Moores Wharf and the interim Cruise Passenger Terminal (CPT) sites during construction works.
- Vibration – Sydney Ports is concerned that excavation work will take place adjacent to the HCT and Moores Wharf and therefore, would result in exceedances to human comfort. The Noise and Vibration Assessment report should address mitigation measures to manage amenity vibration impacts prior to the project application being determined. A comprehensive dilapidation survey of both the Moores Wharf and HCT site should be undertaken prior to commencement of construction works.
- Traffic – Sydney Ports request that a traffic assessment be undertaken to consider the following matters:
 - a). predicted traffic flows on Hickson Road during the morning and midday period (i.e. between 8.00am and 12noon);
 - b). potential traffic impacts on the operation of the CPT, specifically whether the north and south movements proposed on Hickson Road during the morning and midday period will have an impact on vehicles entering and exiting the CPT facility;
 - c). a plan/drawing be provided to the Department to indicate where the truck queuing area is onsite, prior to and after loading material into the trucks. This is to demonstrate that there is adequate space onsite to accommodate these trucks;
 - d). consideration should be given to improved safety of the intersection between Towns Place and Dalgety Road for traffic heading north prior to turning right into Towns Place; and
 - e). that a Construction Management Plan and Waste management Plan be reviewed and agreed by Sydney Ports prior to construction works commencing.
- Remediation & Health Impact – Sydney Ports is concerned with potential risk to staff and its sites, in terms of human health and the environment.
- Navigation and Safety – Sydney Ports have noted that the proponent has not considered navigation impacts associated with the project. Therefore, Sydney Ports request that the proponent confirm that the current water depths in the shipping channel to the north and west of Barangaroo will not be decreased as a result of the development.

It is noted that the Harbour Master of Sydney's approval will be required under Clause 67 of the *management of Waters and Waterside Regulations – NSW*. Other issues raised by Sydney Ports relate to Waste management, Construction Impacts on Moores Wharf and construction staging. These matters have been satisfactorily addressed within the Response to Submissions report documentation.

Sydney Water has provided a comment indicating that the proponent has entered into an agreement with Sydney Water for the works required for the Headland Park and Northern Cove. Sydney Water's requirements are addressed in this agreement.

Industry and Investment NSW

Industry and Investment NSW (I&I NSW) has raised no objections to the proposal, provided that Acid Sulphate Soil and Hydrology and Water Management measures within the draft Statement of Commitments are implemented in full. Further, to minimise potential turbidity impacts, sediment curtains are to be used adjacent to waterway worksites and rock ballast material to be used in lining the Northern Cove and sub-tidal locations is to be preferably igneous in nature.

Housing NSW

Housing NSW has provided the Department with a number of concerns relating to potential impact of vibration and noise impacts on Housing NSW tenants. As the majority of tenants are 60 years or over and close to 40% have a household head in receipt of a disability pension, tenants are likely to spend more time at home and therefore, have a higher possibility of being impacted by associated noise and vibration levels.

Housing NSW has requested that a condition be placed on any project approval limiting hours of construction or provision of respite from noisy, vibration intensive activities. A hotline should also be established for residents. This matter is further discussed further in **Section 5**.

4.3 Public submissions

Sixteen (16) submissions were received from the public. These included submissions from residents of Merriman Street, Millers Point and surrounding precinct. Of the sixteen (16) public submissions, all raised objection to elements of the project. The key issues raised in public submissions are listed in **Table 1**.

Table 1: Summary of Key Issues Raised in Public Submissions

Issue	Proportion of submissions (%)
• Construction traffic	93%
• Construction noise and vibration	80%
• Contamination and Remediation	80%
• Headland Park design and operations	66%
• Transport	60%
• Future cultural facility and car park	60%
• Heritage concerns	53%
• Air quality	46%
• Ecology and water management	33%

The National Trust of Australia (NSW) has submitted comments in relation to:

- To the inaccurate historical information;
- The lack of analysis of historical events; and
- No attempt to assess the heritage significance of the Millers Point Wharfage;

These issues are expanded on within **Section 5** and generally addressed in the submitted Response to Submissions.

Overall, the Department has fully considered the issues raised in public submissions in its assessment of the project.

4.4 Proponent's Response to Submissions

The Proponent provided a Response to Submission on 11 February 2011 (see **Appendix C**) to the issues raised in submissions. The proponent has indicated that the Project Application has been changed slightly in area since the initial Preliminary Environmental Assessment to exclude Munn Street Reserve from any part of the project application, as no works are proposed in the Reserve at this time.

In addition, the updated reports appended to this PPR and the revised Statements of Commitments further detail the ongoing commitments relating to the Project Application.

5. ASSESSMENT

The Department considers the key environmental issues for the project to be:

- Construction traffic;
- Construction noise and vibration;
- Contamination and remediation;
- Headland Park design and operations;
- Transport;
- Future cultural facility and car park;
- Heritage;
- Air quality;
- Ecology and water management; and
- Public interest.

5.1 Construction traffic

5.1.1 Construction traffic volumes and access arrangements

The majority of public and agency submissions, raised concerns in relation to construction traffic, in particular from Towns Place. Further concerns were raised post construction regarding traffic, access and parking arrangements.

The submitted Traffic Impact Assessment and Construction Management Plan provides that general access for construction traffic is proposed off Hickson Road at the northern end of the site for sandstone extraction and for the site compound access. Truck movements will be generally confined to the site and involve the delivery of fill materials from the Stage 1 basement excavation. This is estimated to be approximately a maximum 144 truck movements per day at peak. When loaded, trucks will then travel across the site to transfer the fill to the Headland Park.

Trucks will also be involved in bringing in concrete off site, which is estimated to be a maximum of 174 truck movements per day at peak. These trucks will access the site from Hickson Road and not Towns Place. Additional truck movements are as follows;

- The delivery of earthmoving and compacting vehicles – 10 rigid trucks and semi trailers movement on one day;
- Delivery of site compound buildings – 2 rigid trucks movements per day;
- Transportation of sandstone for saw cutting – 17 truck movements per day;
- Other deliveries – 2 truck movements per day;
- Sewer construction from Gate 5 on Hickson Road to Towns Place – 2 truck movements per day; and
- A maximum of seven truck movements per hour east of Dalgety Road and south of Towns Place.

Taken from the CTMP, the proposed entry and exit routes are listed below. These aim to provide the shortest distances to the arterial roads and avoid the use of local streets by trucks (articulated, heavy to medium rigid, van and utilities) except where necessary.

entry

- From South and East - Wattle Street, Fig Street Western Distributor, Sussex Street, The Hungry Mile;
- From West – Western Distributor, Sussex Street, The Hungry Mile; and
- From North – Sydney Harbour Bridge, York Street, Margaret Street, Napoleon Street, Sussex Street and The Hungry Mile.

exit

- To South and East - The Hungry Mile, Sussex Street, Western Distributor, Harris Street;
- To West – The Hungry Mile, Sussex Street and Western Distributor; and
- To North – The Hungry Mile, Sussex Street, Napoleon Street, Kent Street and Sydney Harbour Bridge.

The Department is satisfied that the bulk of the truck volumes/movements will be restricted to the subject site, with the remaining truck movements off site controlled by traffic management and control measures. This will ensure that off-site traffic impacts are minimised. In terms of the volume of vehicles to and from the project site, the Department considers that with appropriate implementation of the CTMP, such impacts on traffic and residents can be managed.

5.1.2 Interim Cruise Passenger Terminal

Sydney Ports Corporation have raised concerns regarding traffic flows along Hickson Road and the potential impact on the operations of the interim Cruise Passenger Terminal (CPT), and the potential truck queuing along Towns Place. While the City of Sydney is concerned with construction vehicles possibly utilising Harrington Street, Argyle Street and Dalgety Road to access the Headland Park construction site. A further issue is the queuing of trucks in Hickson Road before 7.00am.

The PPR submits that any potential disruption to the CPT will likely occur during the transport of fill material from the basement car park (at Barangaroo South) to the Headland Park site. As indicated in relevant documentation, the Bulk Excavation and Basement Carpark project application (MP10_0023), the construction traffic management plan indicated that traffic signal control for the cruise terminal main access road would be provided and therefore, under such controls, satisfactory access to the CPT would be maintained.

The Department considers that the construction management plan can mitigate issues raised by Sydney Ports Corporation.

5.2 Construction noise and vibration

5.2.1 General Noise

Construction noise and other associated noise from activities from the Headland Park site have been raised by DECCW, Housing NSW, Sydney Ports Corporation and the general public.

Noise (and in some cases, vibration) producing processes and associated equipment have been identified, including:

- Continuous sandstone excavation and stockpiling;
- Dewatering of groundwater inflow into extraction area;
- Receipt of fill to the site; and
- Excavation, filling and land formation.

The proponent has submitted a preliminary Noise and Vibration Management Plan (NVMP) that will be used to manage identified impacts from the construction activities of the site. The NVMP outlines the development controls and safeguards that would be applied by the proponent, and provide guidance for the ongoing management of activities on the site. The objective of these controls is to ensure that all work is carried out in a highly controlled and predictable manner that will minimise emissions and protect the amenity of the sensitive receivers surrounding the site (refer to **Figure 17**).

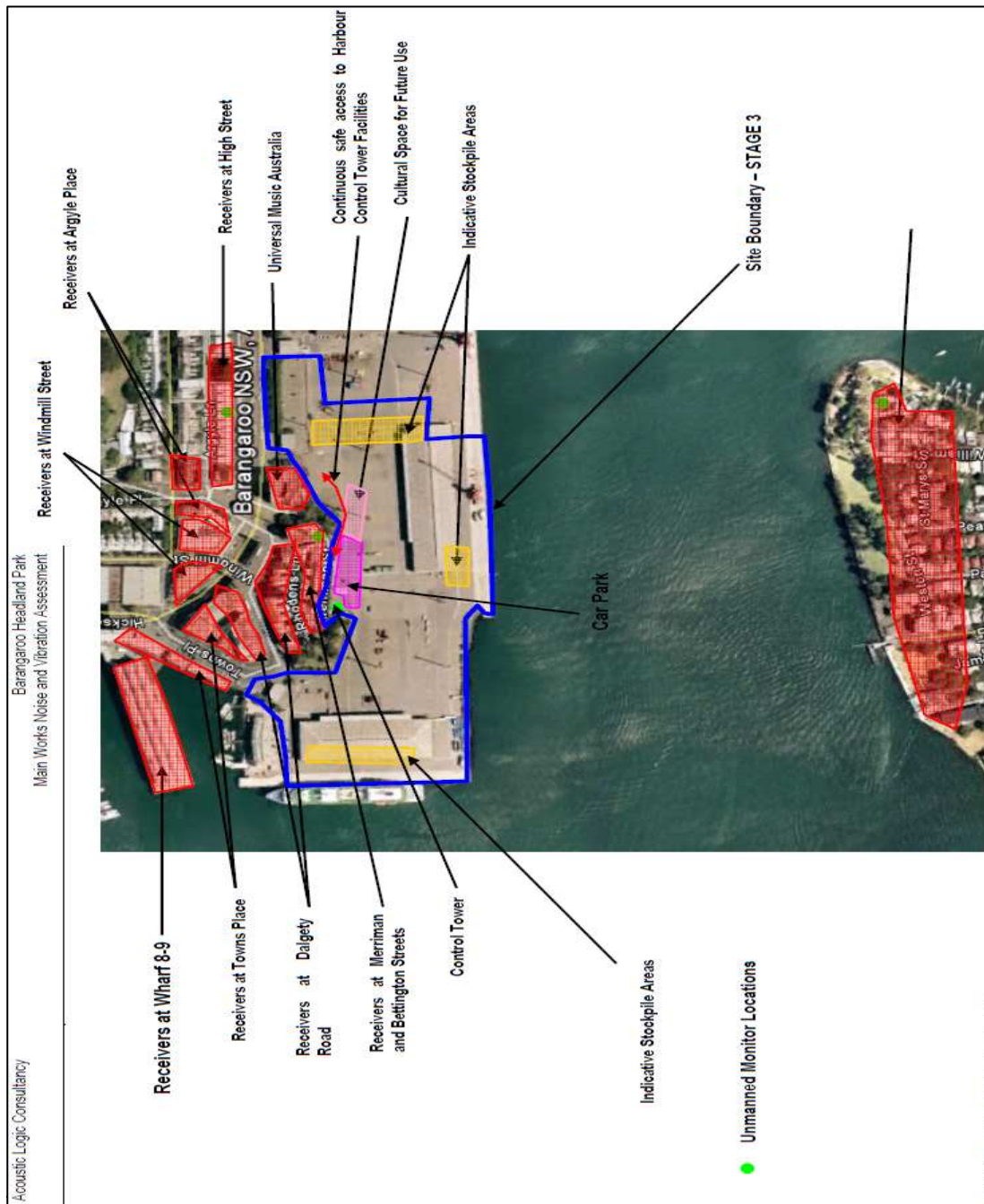


Figure 17: Project site boundary and sensitive receivers

In terms of specific noise control/mitigation methods, examples of the type of noise reduction methods for primary items of plant exceeding the noise management levels would be:

Rock hammering

- Using more the appropriate equipment, where feasible, provides benefits in terms of the noise/time-to-complete balance;
- Using hammers with low-noise heads or wrapping the head;
- The erection of barriers for sound attenuation;
- Where noise emissions exceed the “highly noise affected management level” the duration of this activity throughout the day should be assessed to provide respite periods, or avoiding periods that might be particularly sensitive;

- The local community should be informed via a liaison committee (or other method as appropriate) as to the nature, period and times of hammering; and
- Undertake vibration monitoring to establish safe working distances prior to working near and vibration structures/receivers.

Excavators and earthmoving equipment

- Using the smallest equipment as is practical and provides benefits in terms of the noise/time-to-complete balance;
- Selecting lowest noise levels plant available and/or fitting high performance mufflers/noise reduction kits;
- Consider the erection of barriers where these are practical and provide useful sound attenuation;
- Where noise emissions exceed the “highly noise affected management level” the duration of this activity throughout the day should be assessed to provide respite periods, or avoiding periods that might be particularly sensitive; and
- The local community should be informed via a liaison committee (or other method as appropriate) as to the nature, period and times of operation.

Activities – 24 Hour operations

- Dewatering plant would (and other plant) that needs to operate on a 24 hours per day basis to clear groundwater from the site would be located and treated so that noise emissions would be reduced to levels required for permanently operating plant as per the DECCW Industrial Noise Policy.

The Department notes that with the exception of residences in Merriman Street, noise emissions for rock hammering will generally remain within the noise affected management levels expressed by the DECCW Interim Construction Noise Guidelines, although at a high level. The NVMP identifies a range of measures (at the receptors) that could be taken to minimise noise and vibration impacts on residences, including provision for respite periods.

Notwithstanding, such noise levels are excessive and therefore, the Department concurs with DECCW that associated vibration monitoring should be undertaken at residences in High Street. This requirement will form part of the project approval to minimise excessive noise impacts from noise generating activities.

Furthermore, DECCW has submitted PPR comments in relation to noisy activities and mitigation of excessive noise by the introduction of respite periods. Although the proponent is generally not in support of this method of noise reduction, nevertheless, the following recommended condition submitted by DECCW is outlined below:

“The proponent must monitor noise levels at the most affected receiver location during rock hammering, rock sawing, rock breaking and any other such noisy activities. If levels exceed LAeq, (15 minute) 70 dB(A) for 12 consecutive fifteen minute periods (3 hours) within the approved hours of works, the proponent must incorporate respite periods of 1 hour every 3 hours.”

The Department is satisfied that with the inclusion of the above condition within the project approval, excessive noise levels that may arise during works, can be appropriately controlled.

5.2.2 Noise impacts on port operations

Sydney Ports Corporation raised concerns with the Headland Park development and the noise impact on the Harbour Control Tower (HCT), the Interim Cruise Passenger Terminal (CPT) and Moores Wharf facility.

The submitted NVMP carried out a number of noise readings that would occur at the HCT, CPT and Moores Wharf. These noise levels are predicted as worst case.

Harbour Control Tower

These levels are based on internal impact due to the tower's occupation by Sydney Ports staff. The predictions indicate that equipment such as excavator mounted hydraulic hammers, rock saws and loaders during sandstone extraction would exceed noise limits. This is also the case for external noise

levels around the tower. This can be prevented by permitting only one hammer to operate near the tower at any one time using equipment or sound attenuated equipment when operating close to the tower.

Interim Cruise Passenger Terminal

The Noise and Vibration Assessment predicts that a number of processes such as excavation and construction activities would exceed the management level for approximately two months and thus, impact the CPT. However, the CPT is a temporary facility and is expected to cease to operate by June 2012. Therefore, noise emissions from the land filling and formation of the Headland Park will have no detrimental impact on the CPT, as the works are planned to commence only after the CPT has been relocated.

Moore's Wharf Facility

The Noise and Vibration Assessment found that the excavator mounted hydraulic hammers and, to a minor degree, excavation, filling and land formation procedures of the works would exceed management levels.

The Noise and Vibration Assessment recommends that the NVMP is in place so that those activities that exceed the management level should be managed by adopting alternative processes, and investigating potential mitigation measures to the extent feasible.

The Department considers that the Noise and Vibration Assessment and the Preliminary NVMP has appropriately assessed and addressed the impacts on port operations. The Department recommends that the proponent continues to liaise with Sydney Ports Corporation to ensure the construction noise impacts are managed. This has been included as a recommended condition of approval.

5.2.3 Vibration

The issues associated with vibration have been largely covered within the noise assessment above, as the specific receivers (refer to **Figure 17**) also measured potential vibration impacts. The most potential impacts from vibration are from receivers at the HCT, Moore's Wharf Facility, residential receivers on Merriman and Bettington Streets and the Universal Music commercial building.

However, the NVMP predicts that the extraction and excavation activities would not result in the exceedence of recommended vibration levels at other receivers due to the distance separating the activities and the sensitive structures or occupancies.

The NVMP recommends that vibration levels and regenerated noise levels within the nearby buildings be measured to confirm levels and to establish "safe" working distances that prevent damage or adverse amenity impacts. The activity should occur at 40m from the sensitive structures and the resultant levels measured. The vibration source should then be progressively moved closer to the receiver until the noise/vibration goals are reached. For nearby sandstone buildings, the same procedure as described above should be carried out, except starting at 50m, to establish safe working distances for plant operation.

If hammering is required to be undertaken closer than the safe zone established by the procedure described above, then an alternative method should be investigated. Where an alternative method is justified as not being feasible or reasonable, then the impact on the particular structure should be further investigated in detail, potentially including a relaxation of vibration limits (to the upper limit in the range, for example) having regard for duration of vibration and the imposition of additional, specific monitoring while works occur within this region.

The Department considers that vibration impacts can be managed through the NVMP and recommended conditions of approval.

5.3 Contamination and remediation

The submitted EA was accompanied by a draft Remediation Action Plan (RAP) for the Headland Park site. The RAP primarily relates to the remediation of contamination within the Headland Park site and considers the broader contamination issues on the project site.

The proponent through the PPR has responded to concerns raised by DECCW regarding the draft RAP. It should be noted, that prior to the submission of the PPR, the proponent had not referred the draft Human Health and Ecological Risk Assessment (HHERA) to DECCW for comment. Through the submission of the PPR, the proponent submitted the draft HHERA to DECCW for assessment.

DECCW raised concerns regarding the accuracy and a number of discrepancies in the draft RAP document. DECCW also raised concerns regarding the HHERA and the validity of the contaminant values used.

DECCW is of the view that although the draft RAP document accommodates many options for dealing with soils of different levels of contamination, it is unclear which of those options will actually be used at the subject site. DECCW have provided the Department with a response to the PPR for contamination in which they do not support the criteria as prepared in the draft HHERA and represented in the draft RAP but recommend a process to progress this matter with the proponent. To this end, DECCW has recommended the following condition to detail the issues in terms of process and the resolution of site contamination and remediation.

"Prior to the commencement of any works under the RAP identified in the Preferred Project Report- Barangaroo Headland Park Main Works:

- a) the HHERA and RAP must be prepared in accordance with guidelines produced or approved under s105 of the Contaminated Land Management Act, 1997.*
- b) the HHERA must be approved by DECCW, in accordance with guidelines produced or approved under s105 of the Contaminated Land Management Act, 1997.*
- c) the RAP must be approved jointly by DECCW and a NSW EPA accredited Site Auditor, in accordance with guidelines produced or approved under s105 of the Contaminated Land Management Act, 1997."*

While the Department recognises that there are some unresolved issues with the draft RAP, the subject area is not heavily contaminated and practical remediation options have been sufficiently demonstrated to give assurance that the site can be made suitable for its proposed use.

The Department in discussion with DECCW is of the opinion that the above recommended condition will satisfy the requirements of an appropriate methodology and remediation of the site to enable the Headland Park and Northern Cove to proceed. The RAP will need to be approved by the Minister for Planning.

5.4 Headland Park design and operations

The design of the Headland Park and Northern Cove is in direct response to the Minister's Terms of Approval for the original Barangaroo Concept Plan, which required more detailed design work to achieve, amongst other matters, the following objectives:

- The reinstatement of a headland at the northern end of the site with a naturalised shape and form including a build up of height and a generous landscaped connection to physically link Clyne Reserve, to allow direct pedestrian access from Argyle Place and appreciation of the landform of the former headland; and
- An enlargement of the northern cove to achieve a greater naturalised shape, form and edges.

The proponent has submitted a Public Domain Plan, which is the ground work for guidelines that will be developed as the project progresses. Following any approval of the Headland Park, the proponent's design team will prepare the Public Domain Design Guidelines in consultation with key stakeholders and City of Sydney. The aims/vision of the Headland Park and Northern Cove referred to in the Public Design Guidelines are summarised below;

1. Create a memorable Headland Park;
2. Establish attractive parklands that encourage public use;
3. Ensure the parkland spaces are very well connected;
4. Include significant cultural experiences in the parklands;
5. Provide parklands that have a range of diverse uses;
6. Enhance safety through design and management;
7. Respect the history of the place; and
8. Improve the sustainability of the parklands and surrounding areas.

The Department supports the development of guidelines and the submitted Public Domain Plan. This methodology via the Public Domain Plan will form part of the project approval.

Council raised concerns with regards to the land form of the park in which the proposed contours and profiling of the park indicates a uniform gradient which is not typical of the headlands in Sydney Harbour, which feature sandstone outcrops, terracing and variable gradients.

The Department is of the view that the headland design concept is to achieve a more naturalistic shape, which has been taken from the original shoreline including other headlands of Sydney Harbour.

The Department accepts the design of both the Headland Park and Northern Cove as a connecting landscape element to the centre and southern development precincts of Barangaroo. This is physically achieved by pathways that link commercial/residential precincts with landscaping and public domain fixtures of the Headland Park and Northern Cove, such as street furniture and public art. The visual connections will be the Headland Park itself, and but not limited to, the foreshore promenade, various landscaping elements and point of interest for example, the sandstone seawalls and the wharf within the Northern Cove.

Figure 20 represents indicative features of the Headland Park and Northern Cove, which accentuates the linkages to and from the Headland Park connecting the centre and southern precincts of Barangaroo.

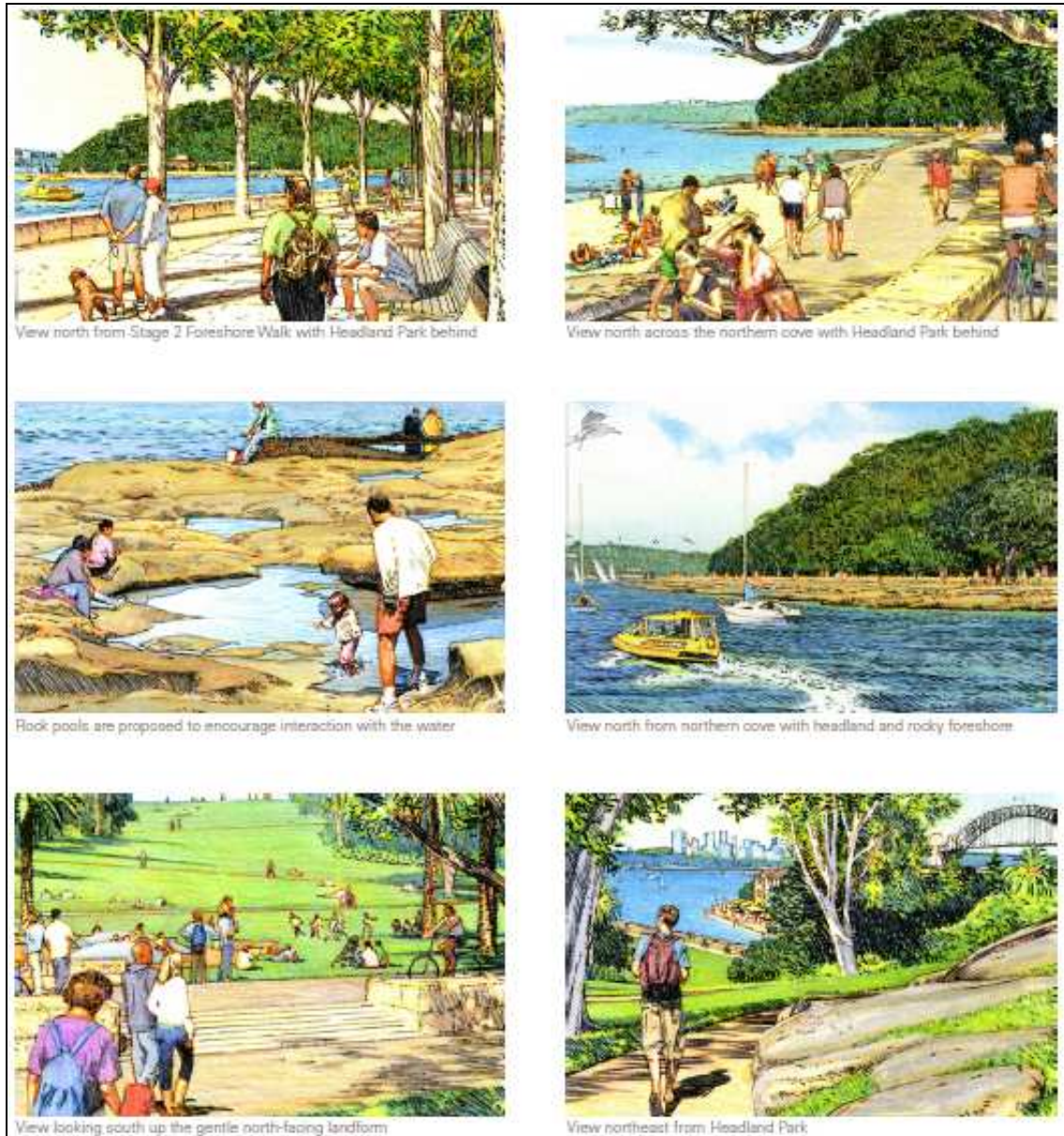


Figure 20: Indicative features of the Headland Park and Northern Cove

The formation of the Headland Park is to achieve a design of a naturalistic headland that represents an era in time before Millers Point began to be altered by human activity. The park will take on form that has a gradual upward slope at a grade of approximately 1.5m from the northern end near Moore's Wharf and rising to an upper bluff at the level of Merriman Street and then falling more steeply at a grade of approximately 1 in 1.5 to the east and south. There will be flat apron that extends to the water's edge with a curtilage of rocky shoreline (refer to **Figure 20**).

This design translates into a headland peak of RL 20.5 at its highest point, adjacent to Merriman Street, which has an RL 19 to 20. The remainder of the park will fall away from Merriman Street.

The use of the park is generally expected to peak at various times depending on the demands of various user groups and during special events. These expected groups would be those persons attending special events, CBD office workers, groups of family and friends, walkers, and cyclist passing through.

A report on accessibility was prepared in response to the City of Sydney concerns for those users of the Headland Park and Northern Cove. Examples of ameliorating such concerns taken from the accessibility report are reproduced below;

- Way finding maps will be provided at northern and southern access points of the park so that visitors may choose between the alternate accessible routes, that being, the northern 1:20 pathways or the southern passenger lift;
- Directional signage will be employed at relevant points along the foreshore pathway indicating the location of the accessible points/routes; and
- Continuous accessible path of travel will be provided in accordance with AS1428.1-2009 at points of public access between the foreshore pathways. This will occur during design development stage. In addition, accessible paths of travel will be provided to allow access to view the tidal pools. This will occur during design development stage.

In terms of safety and security issues, the park design incorporates appropriate lighting and CCTV cameras however, as raised by City of Sydney, the 'bush walks' should not be illuminated as they are densely planted and would pose a security concern in terms of concealment of persons. Therefore, no lighting of these areas would be a sign to users that they should not enter these paths at night.

The operational management of the site, will involve the preparation of a Plan of Management that will guide operations and management of the Headland Park prior to opening of the park to the public. The plan of management would outline matters such as;

- The vision for the parkland;
- Key objectives;
- Identify specific areas and appropriate uses;
- Hours of operation and security arrangements; and
- Event management measures.

With the preparation of the Public Domain Design Guidelines and the aims/visions of that plan, the cultural needs and the landscaping of the Headland Park will provide a range of open space areas that will support active and passive uses, which ensures the Headland Park and Northern Cove are a vital part of the broader community in terms of passive and active recreational space. Therefore, the Department is satisfied that the design and operation of the Headland Park is consistent with the Concept Plan (as modified).

5.5 Transport

5.5.1 Access and parking arrangements

Concerns have been raised as to the proposed underground 300 space car park and subsequent vehicle access. The intended access involves the following:

- The Headland Park will be accessed by pedestrians and service vehicles from both Towns Place and The Hungry Mile;
- The public car park will be accessed from a new roundabout at the junction of Towns Place and Dalgety Road; and
- Service vehicle access to the built space for a future use will be from the driveway from the Towns Place/Dalgety Road roundabout, with a separate ramp up to the future use.

The Traffic Impact Assessment report considered alternative access arrangements from Hickson Road to the underground car park including services vehicles. Any access from Hickson Road is considered inappropriate as:

- The driveway would conflict with any light rail route along this section of roadway;
- Reduce the amenity of the northern cove and main entrance to the built space for a future use;
- Introduce pedestrian and bicycle conflict with vehicles along the foreshore; and
- A longer driveway would be required (150m in comparison to 125m for Towns Place).

Both the City of Sydney and Sydney Ports Corporation raise issue with the safety of the proposed roundabout at the junction of Dalgety Road and Towns Place. The Traffic Impact Assessment indicates that an intersection is required at this location for safety reasons. The sharp bend at the junction of Dalgety Road and Towns Place has limited sight distance and would make the provision of the necessary sheltered right turn lane at the un-signalised intersection very awkward to provide.

In addition, concerns were raised from the general public in terms of the safety hazard presented by the junction in its present form even without a car park entrance. The Traffic Impact Assessment determined that a roundabout would slow traffic and generally make the two roads safer for both pedestrians and vehicles.

The Department agrees that The Towns Place/Dalgety Road intersection is the most appropriate site for access to the car park and for service vehicles for the future cultural floor area use. Therefore, access at this point, via a roundabout, provides safe access to the site, while minimising traffic in the Millers Point area.

5.5.2 Traffic

The Traffic Impact Assessment report indicates that Towns Place currently carries 330 vehicles per hour in the AM period and 290 vehicles per hour in the PM peak period, and with the additional traffic associated with the underground car park, will still be under the RTA's environmental limit for amenity. Towns Place acts as a Collector Road, under the RTA's functional hierarchy. The function of a collector road is to transfer traffic from the local road network to higher order sub-arterial and arterial roads. For such roads, the RTA specifies 300 vehicles per hour or less as an environmental goal and 500 vehicles per hour as an environmental limit.

The CTMP submits that within the busy CBD area, it is not possible to keep traffic volumes below these levels. However in this case, traffic volumes on Towns Place would be kept below 500 vehicles per hour. Therefore local amenity would remain satisfactory in terms of traffic levels. On weekends, there may be slightly higher traffic generation from the car park. However on weekends, there would be minimal office traffic generation and this would offset any higher Headland Park traffic generation.

The Traffic Impact Assessment concludes that analysis indicates that while there would be more traffic on Towns Place, Dalgety Road and surrounding streets, the future levels would be within normal environmental limits for a suburban location let alone a CBD location. The Department accepts these findings

5.5.3 Walking and cycling

In terms of pedestrian and cycle access to the Headland Park site, this facility will significantly increase pedestrian access to the Sydney Harbour Foreshore and local street network for pedestrians. Pedestrian access to the Sydney Foreshore will be increased by:

- Creation of a universally accessible (maximum grade 1 in 20) foreshore walk from Towns Place to The Hungry Mile;
- Creation of an accessible (maximum grade 1 in 14 with landings) path from Moons Place to the Sydney Harbour Foreshore;
- Connecting the foreshore walk to those identified in the approved (modified) concept Plan, creating a complete foreshore walk from Woolloomooloo to Blackwattle Bay; and
- Widening of the footpath on the Western side of Dalgety Road to provide a safer pedestrian travel path from upper Millers Point.

Pedestrian access to the built space for a future use will be at-grade from The Hungry Mile and foreshore walk. The site will also be accessible via lifts connected from footpaths to Merriman Street.

The Department is satisfied that the linkages for pedestrians and cyclist around, through and connecting the southern section of Barangaroo, and the local street system to be acceptable and addresses the needs of the community for this type of activity in the Headland Park.

5.6 Future cultural facility and car park

The City of Sydney and the general public have raised issues in relation to the proposed cultural space and car park facility under the eastern section of the Headland Park.

The intention of the underground cultural facility and car park is to provide for a flexible framework for its future community use within a location that would integrate and not be in conflict with the naturalistic design approach of the parkland, and the varying future activities of the Headland Park and Northern Cove.

Although the use of the cultural space is subject of future project applications, the space represents a minimum of 75,000m² up to a maximum area of 100,000m². Stage 1 of the project will see the lower levels of this space accommodating the car park, in 4 half floor levels with a one way circulation system, and with a capacity of 300 vehicles within a 10,000m² to 20,000m² footprint. Stage 2 would allow for the expansion of the area consistent with the final landform design.

The car park will be accessed from Towns Place via a new entrance road. Pedestrian access is proposed from various locations within the Headland Park through a network of pedestrian pathways. Direct access would be provided from the cultural facility.

Concerns were raised in relation to access, safety and security and for the facility to integrate into the park design. Although there is no approval for any specific use of the cultural facility, the proponent agrees that the design of this facility would need to engage with the park at varying levels and in different locations. To achieve this goal, such use would be subject to consultation with a range of stakeholders, including the indigenous community.

Notwithstanding, all facilities should be highly visible and accessible. The City of Sydney requests that there be a pedestrian entry to the cultural facility from the Walsh Bay, northern end. The proponent contends that this would, in effect, give access to a back door, where this end of the facility would accommodate back of house type services. The PPR responded by explaining that the current design aims at creating a major entry plaza to the park at the Hickson Road entry and this could potentially link to other major cultural facilities of Barangaroo Central, including any forms of public transport.

The Department supports the proposed location of the cultural facility and car park, as these facilities will play an integral part of the park's use in terms of visitor parking that will supplement public transport, and extend the cultural needs of the local and broader community. Any future applications for the use of the car park and cultural facility, can resolve detailed use and design issues.

5.7 Heritage

The proponent has submitted a Heritage Impact Statement (HIS), which, amongst other matters details the affected heritage items and individually assesses the potential impact on these items by the Headland Park and Northern Cove project application. The items identified are:

- Sewage Pumping Station (SPS0014);
- Sandstone Sea Wall;
- Dalgety's Bond Stores;
- Munn Street Terraces;
- Grafton Bond Stores and Sandstone Wall;
- Harbour Control Tower; and
- Moore's Wharf Building.

The HIS submits that the Headland Park and Northern Cove works would enhance the setting of Moore's Bond Stores by providing a more intimate port-side environment. The reactivation of Munn Street would be a positive heritage impact acknowledging the nineteenth century street pattern. The decommissioning of the Sewage Pumping Station and its relocation of the structure to a nearby location, and used for public toilets is a constructive outcome.

The 1913 sandstone seawall would experience some adverse heritage impacts. Although the arrangement of the seawall's sandstone block and their original location would be lost, their continued function as retaining elements a short distance from their original location would alleviate the impact of having moved them. It should be noted, that the existing condition of the seawall has been compromised due to the multiple stormwater pipe penetrations through the original sandstone wall.

The heritage items that would not be subject to a significant change in their significance include Clyne Reserve, Dalgety Terrace, the Merriman Street Terraces, Dalgety's Bond Stores, the Munn Street Terraces, High Street Duplexes and Grafton Bond Store.

In addition, the HIS has recommended mitigation measures that involve the protection of the items and the methodology in their protection during construction. These mitigation measures have been incorporated into the revised Statement of Commitments.

The Department is of the opinion that the nominated heritage items detailed above can be protected during the construction of the Headland and Northern Cove works with appropriate mitigation measures with the outcome being positive to the preservation of these items and their continuing existence.

5.8 Air quality

The EA submitted by the proponent included an Air Quality and Health Assessment. This report is required to assess potential air emissions from the demolition and earthworks undertaken and part of the construction of the Headland park site. The results indicate that the levels of odour have been identified as potentially exceeding DECCW criteria at receptors in close proximity to the Headland Park.

The issues raised by agencies and the general public are concerned with potential air pollution and subsequent airborne contamination resulting from the proposed works. In addition, Sydney Ports Corporation is concerned with the potential impact of airborne benzene in the early morning and that the HCT, Moore's Wharf and the interim CPT require continuous monitoring in response to predicted exceedances of PM10 (24 hour) and odour.

The PPR has addressed this matter by proposing monitoring at the HCT, Moore's Wharf and CPT sites. Exceedances should be responded to by implementing the control measures outlined in the Air Quality Management Plan (AQMP). Should there be an exceedance concentration of PM10, works should cease pending more favourable meteorological conditions. A revised Statement of Commitment has been proposed to implement this action.

DECCW has raised issues of a technical matter in that the assessment by the Air Quality and Health Assessment predicts large exceedances of DECCW's air quality impact assessment criteria. DECCW has submitted in their response to the PPR that based on the information in the EA and the PPR, DECCW is unable to determine whether the predicted exceedances are caused by errors in the modelling methodology and/or chosen method for presenting the assessment results.

DECCW has also raised issue with a number of matters detailed in the Statement of Commitments, which required clarification. As a measure to rectify these matters, DECCW has recommended a number of requirements that need to be included in the AQMP. These include updated criteria, management practices monitoring requirements

The Department considers that air quality impacts can be managed through an updated AQMP, which addresses DECCW's requirements. This requirement has been included in the recommended conditions of approval.

5.8 Ecology and water management

5.8.1 Ecology

The Soil and Water Report makes reference to a number of previous studies that have indicated minimal marine vegetation occurring adjacent to the proposed park area. The Soil and Water report notes the following:

"The benthic habitat in Darling Harbour, adjacent to Barangaroo, consisted of silty sand. There was considerable bioturbation, likely from burrowing organisms like polychaete worms and invertebrate crustaceans. The substrate towards the southern end of the development, contained clay and was relatively undisturbed. This was in contrast with the middle and northern sections of the site, which contained higher percentage of silt. One solitary sponge was reported at Site 3, towards the northern end of the site."

The Soil and Water report concludes that it is unlikely that any species of threatened fauna listed under the *Threatened Species Conservation Act 1995* or the *Environment Protection Biodiversity Conservation Act 1999*, such as seagrass communities would use this area as the locality is unsuitable.

To assist in effective turbidity mitigation, the Soil and Water Report recommends the installation of turbidity silt curtains during the construction phase of the project.

The report submits that with the changes to the northern and western sides of the site, the more natural state of this area will provide shelter for aquatic species that were lacking previously. The report further notes that the potential changes in estuarine circulation and hydrological regimes in the surrounding harbour waters will benefit without adverse impacts posed by the foreshore changes.

The Department is satisfied that the assessment of the aquatic study carried out by the Soil and Water Report is acceptable and that the impact will not have significant detrimental ecological impacts and a range of benefits.

5.8.2 Water management

The EA outlines that during the construction phase all surface water runoff from work areas will be captured in sedimentary basins / overflow tanks, prior to discharge or disposal.

DECCW are concerned with the information submitted on water management during construction. Some issues can be resolved during the review of the HHERA process and some can be addressed in a finalised Stormwater and Water Management Plan. DECCW advises that the information lacks sufficient detail of the types of water treatment proposed and the monitoring that will be conducted to assess compliance with environmental requirements and licence limits. While there is inadequate information provided to support the development, the issues are capable of resolution.

DECCW has identified two main concerns related to the unresolved HHERA issues, they are:

- Water reuse criteria during and post construction; and
- Discharges to the harbour of potentially contaminated water via groundwater during and post construction.

A consequence of the above issues is uncertainty as to whether or not a water treatment plant will be installed, what type of treatment it will involve and what treatment criteria will be achieved for proposed uses (discharge or re-use). These details are important for stormwater and groundwater management during the construction period because disposal to sewer is not likely to be an option available to the site.

In summary DECCW's comments on water management are limited because of the lack of details in relation to water treatment technology (if any is proposed), the likely water quality produced and its implications for the HHERA and Remedial Action Plan.

The PPR provides limited additional information for DECCW to determine approval or develop Environment Protection Licence conditions. However, DECCW is satisfied that that Waste Management can be adequately managed through conditions of approval.

The Department is satisfied that relevant recommended conditions, which require a comprehensive Stormwater and Water Management Plan comprising procedures relating to monitoring, soil erosion and sediment control, will ensure that the shoreline is protected before work and during work.

5.9 Public Interest

The Project Application for the Headland Park and Northern Cove Main Works provided considerable public benefit by delivering a number of improvements, including:

- A network of pedestrian pathways connecting the foreshore walk and other areas of the park;
- The provision of a shoreline promenade including a dual use pedestrian path and cycleway;
- Jetty/viewing platform and public wharf extending into the Northern Cove from the southern shoreline;
- Landscaping and planting; and
- Cultural Facility and onsite car parking.

The Department is of the opinion that the overall public domain of the project is a positive outcome and a significant contribution to the role of Barangaroo as a key urban renewal precinct in Sydney.

6. CONCLUSION

The amalgamation of headland, foreshore and natural settings in the park, its location adjacent to the accessible and high density CBD, and sited on Sydney Harbour, offer unique and significant opportunities for a range of activities to be enjoyed by a wide range of users. The Headland Park and Northern Cove will make an important contribution to satisfying the recreation needs of the CBD's increasing number of residents, workers and visitors.

The issues identified in the assessment included: construction traffic; construction noise and vibration; contamination and remediation; Headland Park design and operations; transport; future cultural facility and car park; heritage; air quality; ecology and water management; and public interest. These key issues can be appropriately mitigated through the Statement of Commitments and/or recommended conditions of approval.

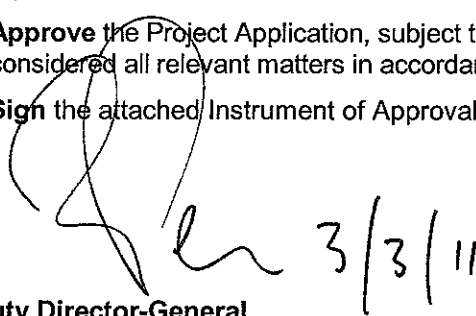
Recommended conditions have been informed by comments from the proponent, government agencies and City of Sydney.

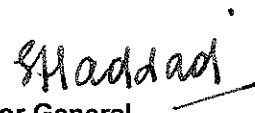
On these grounds, the Department considers the proposed Headland Park and Northern Cove works acceptable and consistent with the Concept Plan (as modified), including the Concept Plan Statement of Commitments.

7. RECOMMENDATION

It is recommended that the Minister for Planning:

- a) **Consider** all relevant matters prescribed under section 75J(2) of the EP&A Act, including those relevant matters prescribed by 75I(2) as contained in the findings and recommendations of this report;
- b) **Approve** the Project Application, subject to conditions, under section 75J(1) of the EP&A Act, having considered all relevant matters in accordance with (a) above; and
- c) **Sign** the attached Instrument of Approval (**TAG A**).


Deputy Director-General
Development Assessment & Systems Performance


Director General

3/3/2011

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=3803

APPENDIX B SUBMISSIONS

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=3803

APPENDIX C PROPONENT'S RESPONSE TO SUBMISSIONS

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=3803

APPENDIX D CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

Protection of the Environment Operations Act 1997 (POEO Act)

The proposed Headland Park and Northern Cove Main Works incorporates the following scheduled activities under Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act):

- extractive activities – land based extractive activity
- contaminated soil treatment, and
- crushing, grinding or separating.

Under sections 48, 49 and Schedule 1 of the POEO Act a licence is required to carry out a scheduled activity. Further under section 122 of the POEO Act a licence is also required for non-scheduled activities that involve the pollution of waters. It is likely that a licence would be required in this regard for hydroblasting of sandstone blocks to shape and contour the Headland Park shoreline. This process will involve discharge to water and would be undertaken in accordance with relevant criteria.

The process for requiring environment protection licences under the POEO Act is separate to the Part 3A approval process and is not suspended by section 75U of the EP&A Act. The Barangaroo Delivery Authority will therefore be required to obtain a licence for relevant scheduled activities and prior to commencement of any discharge to waters. Accordingly the proposal has been assessed in accordance with the relevant policies and guidelines issued by the Department of Environment, Climate Change and Water (DECCW).

State Environmental Planning Policy (Major Development) 2005 (MD SEPP)

The Barangaroo site is listed as a State Significant Site under Schedule 3 of the Major Development SEPP. The planning controls for Barangaroo are contained in Part 12 of Schedule 3.

- Clause 3, Part 12 provides that the only other environmental planning instruments that apply to Barangaroo are other State Environmental Planning Policies (and deemed SEPPs). These are discussed below.
- Clause 5, Part 12 – Part 3A Projects states that development within the Barangaroo site that has a capital investment of more than \$5 million (other than certain specified development) is a project to which Part 3A applies. The proposed development is therefore a project having a capital investment value of \$92,508,280.
- Clause 7, Part 12 - Land Use Zones provides that the subject land is within zone RE1 Public Recreation and requires that the consent authority must have regard to the objectives for development in a zone when determining an application within that zone.

The proposed Headland Park and Northern Cove Main Works, which includes earth works, environmental protection works, a recreation area, the construction of a space for a cultural space and an underground car park are permissible with consent. The proposed works are consistent with the objectives of the zone.

Section 75E(4) of the Act provides that a proponent may apply for approval of part of a project that is a 'declared project' to which Part 3A applies as outlined in Clause 6.

The proposed Headland Park and Northern Cove Main Works provides for redevelopment of the northern part of the Barangaroo site, the establishment of the Headland Park and the formation of the Northern Cove. Accordingly the proposed works are permissible with consent on the subject land.

- Clause 12, Part 12 – Demolition within Zone RE1 Public Recreation provides that demolition may be carried out with consent on land within Zone RE1 Public Recreation. This project application seeks consent for demolition of part of the remnant hardstand (for extraction pit), removal of part of the existing apron with reconfiguration of the shoreline.
- Clause 15, Part 12 - Public Utility Undertakings provides that development for the purposes of public utility undertakings that is carried out on land within the Barangaroo site does not require development consent. However approval is sought for these proposed works as part of the subject Part 3A project application.

- Clause 21, Part 12 provides that a person must not, undertake works that affect a heritage item except with the consent of the consent authority. The proposed development includes location of the Sydney Water Sewage Pumping Station superstructure for the purposes of an amenities building on the north eastern part of the site in the vicinity of Moore's Wharf. Approval is sought for the location and the use but the actual works to the building will be subject to a future application. The Sydney Water Sewage Pumping Station is a heritage item listed on Sydney Water and Sydney Port's Section 170 registers (Heritage Act 1977). Removal of the superstructure from its original location on site (and temporary storage) formed part of the Early Works Project Application.

In addition the proposed works have the potential to impact on the following heritage listed items:

- Sandstone Seawall at north-west of site;
- Sydney Ports Harbour Control Tower;
- Sandstone Wall adjoining Grafton Bond Store;
- Munn Street Terraces;
- Dalgety's Bond Store, and
- Moore's Wharf Building

A heritage impact statement has been prepared to assess the impact of the proposed works on the above heritage items on the site (excluding works to SPS0014, which are subject to a future application) and within the vicinity.

State Environmental Planning Policy No. (Infrastructure) 2007

SEPP (Infrastructure) 2007 (Division 12 Parks and Public Reserves) provides for a range of development (including pathways, amenities, visitor centers, landscaping, environmental management works etc) to be undertaken in a public reserve under the care of or vested in a Council without consent. The subject land does not yet form a public reserve and is not in the care of or vested in the Council therefore, this provision does not apply. Consent is however being sought for these works are part of this Project Application.

SEPP (Infrastructure) 2007 also provides for a range of other infrastructure to be undertaken by a public authority without consent. This includes sewerage, stormwater, electricity, telecommunications, gas reticulation etc. However as the proposed infrastructure works form part of the project application consent is being sought for these works.

State Environmental Planning Policy No. 55 – Remediation of Land

Clause 7(1) of SEPP 55 provides that a consent authority must not consent to the carrying out of any development on land unless:

- (a) it has consider whether the land is contaminated, and*
- (b) if the land is contaminated, be satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
- (c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, be satisfied that the land will be remediated before the land is used for that purpose.*

Clause 7(2) of SEPP 55 also requires a consent authority, when considering an application for consent to carry out development that would involve a change of use on land, to consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

There is a strong legal argument to the effect that clause 7 of SEPP 55 does not apply to the determination of a Part 3A project. This is the subject of current legal proceedings in the Land and Environment Court. If the Court was to find that clause 7 of SEPP 55 applies to the determination of Part 3A projects, contrary to the submission put by the Minister, the Department considers that there is sufficient information provided in the EA and PPR, and sufficient controls provided by recommended conditions of approval, to enable the Minister to properly consider whether the land is contaminated and to be satisfied that the land can be made suitable for the purpose for which the development is proposed to be carried out.

Clause 4.6 of the guidelines relevantly identifies that in carrying out functions under the EP&A Act in relation to land that is or potentially is contaminated, planning authorities should take into account whether contaminated land is suitable for the intended use (where a change of use is proposed), or whether conditions are attached to development to ensure that the subject land can and will be remediated to a level appropriate to its intended use prior to, or during, the development stage. No planning decision should be made unless sufficient information is available to make the decision.

In accordance with Clause 7(1)(a) of SEPP 55, the proposal has considered and identified that the land that is subject to the Project Application is contaminated. The works proposed as part of the Headland Park and Northern Cove Project Application include some excavation works for the piling and core of the proposed building that extend beyond the extent of excavation that is already approved as part of the Bulk Excavation and Basement Car Parking Project Application (MP 10_0023).

The Overarching RAP for Barangaroo presents a summary of the contamination issues identified on the Barangaroo site and outlines an approach to the remediation of the site as a whole. The Overarching RAP requires that site specific RAPs be developed for the Declaration Area and for the other development sites. With respect to the Headland Park and Northern Cove Project Application Site the Overarching RAP considers on-site treatment of contaminated material to be the most practical methodology.

The Overarching RAP notes that on-site treatment of groundwater from dewatering excavations will also be required, however ongoing treatment of groundwater is not likely to be required following removal of contaminated material.

In accordance with Clause 7(1)(b) of SEPP 55, as the excavation works in the Headland Park and Northern Project Application are to be carried out on contaminated land, the consent authority must be satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out.

It is proposed that the Headland Park and Northern Cove Project Application works will be carried out in accordance with the draft RAP and further RAP required by the recommended conditions of project approval.

The recommended conditions of approval require an amended RAP, prepared in accordance with the guidelines produced or approved under s105 of the *Contaminated Land Management Act 1997*. The recommended conditions also provide that the amended RAP must be endorsed by DECCW and approved by the Minister as approval authority.

Clause 17 of SEPP 55 further requires all remediation work to be carried out in accordance with:

- (a) *The contaminated land planning guidelines; and*
- (b) *The guidelines in force under the Contaminated Land Management Act 1997; and*
- (c) *In the case of category 1 remediation work – a plan of remediation, as approved by the consent authority, prepared in accordance with the contaminated land planning guidelines.*

The Land and Environment Court is also considering the application of clause 17 of SEPP 55 to an approved project. The Minister has argued that clause 17 does not apply to a project approved under Part 3A. If the Court does not agree with the Minister's argument, and finds that clause 17 does apply to a Part 3A project, the recommended conditions of approval include a condition requiring a RAP to be prepared in accordance with the Guidelines.

The Department is satisfied that sufficient information has been provided with the application to enable the Minister to be satisfied that the land will be suitable after remediation for the proposed uses, and that the land will be remediated before the approved uses are carried out on the land.

Sydney Regional Environmental Plan (SREP) Sydney Harbour Catchment 2005

Although only State Environmental Planning Policies apply to the Barangaroo site, Regional Environmental Plans are considered to be “deemed” SEPPs and therefore apply. The site is located within ‘Foreshores and Waterways Area’ as defined in *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* (Sydney Harbour Catchment REP). The Sydney Harbour Catchment REP does not contain any specific provisions relevant to the proposed development.

APPENDIX E RECOMMENDED CONDITIONS OF APPROVAL



Project Approval

Section 75J of the *Environmental Planning & Assessment Act 1979*

I approve the Project Application referred to in Schedule 1, subject to the conditions in Schedule 2.

This approval applies to the plans, drawings and documents cited by the Proponent in their Environmental Assessment, Preferred Project Report and the Proponent's revised Statement of Commitments (Schedule 3), subject to the conditions of approval in the attached Schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Anthony (Tony) Kelly
Minister for Planning

Sydney

2011

SCHEDULE 1

Application No.:	10_0048
Proponent:	Barangaroo Delivery Authority
Approval Authority:	Minister for Planning
Land:	Part Lot 5 DP 876514, Lots 1, 4 and 6 in DP 876514
Project:	Barangaroo Headland Park and Northern Cove – Main Works.

DEFINITIONS

Advisory Notes	Advisory information relating to the approved project but do not form a part of this approval.
BCA	Building Code of Australia
BDA	Barangaroo Delivery Authority
Certifying Authority	Has the same meaning as Part 4A of the EP& A Act.
Construction	Any works, including earth and building works
Council	City of Sydney Council
CPI	Consumer Price Index
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 3pm on Sundays and Public Holidays
DECCW	Department of Environment, Climate Change and Water or its successors
Department	Department of Planning or its successors
Director General	Director General of the Department of Planning, or nominee
EA	Environmental Assessment Report titled <i>Headland Park and Northern Cove Main Works</i> , prepared by MG Planning Pty Ltd, dated October 2010
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
Evening	The period from 6pm to 10pm
Incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval
Minister	Minister for Planning, or nominee
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
PPR	Preferred Project Report titled <i>Headland Park and Northern Cove Main Works</i> , prepared by MG Planning Pty Ltd, dated February 2011
Project	The project described in Schedule 2, Part A, Condition A1 and the accompanying plans and documentation described in Schedule 2, Part A, and Condition A2.
Proponent	Barangaroo Delivery Authority (BDA)
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Reasonable and Feasible	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering considerations and what is practical to build.
Statement of Commitments	The Proponent's Statement of Commitments in Schedule 3.
Subject Site	Part Lot 5 DP 876514, Lots 1, 4 and 6 in DP 876514

SCHEDULE 2

PART A - ADMINISTRATIVE CONDITIONS

A1 DEVELOPMENT DESCRIPTION

Except as amended by this approval, project approval is granted for Headland Park and Northern Cove - Main Works, Barangaroo.

A2 DEVELOPMENT IN ACCORDANCE WITH PLANS AND DOCUMENTATION

The development will be fully undertaken in accordance the following documents and plans:

Environmental Assessment Report titled <i>Headland Park and Northern Cove Main Works Volume 1 and 2</i>, and <i>Appendices</i>, prepared by MG Planning Pty Ltd on behalf of Barangaroo Delivery Authority, dated October 2010			
Response to Submissions titled <i>Headland Park and Northern Cove Main Works Volume 1 and 2</i>, and <i>Appendices</i>, prepared by MG Planning Pty Ltd on behalf of Barangaroo Delivery Authority, dated February 2011			
Statement of Commitments prepared by MB Planning submitted with Response to Submissions dated February 2011			
Architectural Plans prepared by PWP Landscape Architecture and Johnson Pilton Walker, titled 'Main Works Application Barangaroo, Barangaroo Plan', submitted with the Environmental Assessment Report.			
Drawing No.	Rev	Name of Plan	Date
MW-PWP-L-SO-1001	00	Main Works Application Barangaroo, Barangaroo Plan	20 Oct 2010
XX-PWP-L-S3-1002	00	Main Works Application Barangaroo Headland, Headland Park Plan	22 Oct 2010
MW-PWP-L-S3-2001	00	Main Works Application Barangaroo Headland Park, Headland Section 1	22 Sept 2010
MW-PWP-L-S3-2002	00	Main Works Application Barangaroo Headland Park, Headland Section 2	22 Sept 2010
MW-PWP-L-S3-2003	00	Main Works Application Barangaroo Headland Park, Headland Section 3	22 Sept 2010
MW-PWP-L-S3-2004	00	Main Works Application Barangaroo Headland Park, Headland Section 4	22 Sept 2010
MW-PWP-L-S3-2005	00	Main Works Application Barangaroo Headland Park, Headland Section 5	22 Sept 2010
MW-JWP-A-S3-1001	02	Main Works Application Barangaroo Carpark & Future Cultural Facility Basement Level 2	22 Oct 2010
MW-JWP-A-S3-1002	02	Main Works Application Barangaroo Carpark & Future Cultural Facility Basement Level 1	22 Oct 2010
MW-JWP-A-S3-1003	02	Main Works Application Barangaroo Carpark & Future Cultural Facility Ground Floor RL 4.0	22 Oct 2010
MW-JWP-A-S3-1006	02	Main Works Application Barangaroo Carpark & Future Cultural Facility Plan RL 25.0	22 Oct 2010
MW-JWP-A-S3-3001	02	Main Works Application Barangaroo Carpark & Future Cultural Facility Section AA	22 Oct 2010
MW-JWP-A-S3-3002	02	Main Works Application Barangaroo Carpark & Future Cultural Facility Section BB	22 Oct 2010
MW-JWP-A-S3-3003	00	Main Works Application Barangaroo Carpark & Future Cultural Facility Section Lift Entry from Upper Bluff	22 Oct 2010
MW-JWP-L-S3-1001	00	Main Works Space Hierarchy Plan	-
MW-JWP-L-S3-1002	00	Main Works Materials and Planting	-
MW-JWP-L-S3-1003	00	Main Works Street Furniture Concept	-
MW-JWP-L-S3-1004	00	Main Works Public Deck	-
MW-JWP-L-S3-1006	00	Main Works Materials and Planting	-
MW-WAG-E-S3-1022	00	Main Works Application Carpark & Future Cultural Facility Car park Ventilation	11 Oct 2010
MW-WAG-E-S3-3001	00	Main Works Application Carpark & Future Cultural Facility Seawater Cooling Details	11 Oct 2010

MW-WAG-E-S3-1001	01	Main Works Application Carpark & Future Cultural Facility Headland Park – Lighting Concept Plan	18 Oct 2010
Barangaroo Headland Park and Public Domain Marine Works Plans prepared by Hyder Consultants P/L, submitted with the Environmental Assessment Report.			
Drawing No.	Rev	Name of Plan	Date
SK00	A	General Arrangement Existing Caisson Block Location Plan	-
SK01	A	General Arrangement Existing Caisson Block Location Plan Raised Harbour Floor Option	-
SK02	A	General Arrangement Typical Sections Sheet 1	-
SK03	A	General Arrangement Typical Sections Sheet 2	-
SK04	A	General Arrangement Typical Sections Sheet 3	-
SK05	A	General Arrangement Typical Sections Sheet 4	-
SK06	A	General Arrangement Typical Sections Sheet 5	-
SK07	A	General Arrangement Typical Sections Sheet 6	-
-		ESD Initiatives going forward to Design Development prepared by One Planet Communities	16 Oct 2010
Services Plans Barangaroo Headland Park prepared by Warren Smith & Partners P/L, submitted with the Environmental Assessment Report.			
Drawing No.	Rev	Name of Plan	Date
MW-WSP-H-1031	C	Integrated Water Management Plan Title Sheet Drawing List and Locality Plan	Sept 2010
MW-WSP-H-1032	C	Integrated Water Management Plan	Sept 2010
MW-WSP-H-1033	C	Integrated Water Management Plan Key Plan	Sept 2010
MW-WSP-H-1034	C	Integrated Water Management Plan General Notes and Specification	Sept 2010
MW-WSP-H-1035	C	Integrated Water Management Plan Stormwater Catchment Existing Condition Sheet 1 of 2	Sept 2010
MW-WSP-H-1036	C	Integrated Water Management Plan Stormwater Catchment Existing Condition Sheet 2 of 2	Sept 2010
MW-WSP-H-1037	C	Integrated Water Management Plan Stormwater Catchment Proposed Park Sheet 1 of 1	Sept 2010
MW-WSP-H-1036	C	Integrated Water Management Plan Stormwater Catchment Existing Condition Sheet 2 of 2	Sept 2010
MW-WSP-H-1038	C	Integrated Water Management Plan Stormwater Drainage Layout Plan Sheet 1 of 1	Sept 2010
MW-WSP-H-1039	C	Integrated Water Management Plan Retaining Wall Subsoil Drainage Layout Plan	Sept 2010
MW-WSP-H-1040	C	Integrated Water Management Plan Irrigation Layout Plan	Sept 2010
MW-WSP-H-1041	C	Integrated Water Management Plan Seepage Water Layout Plan	Sept 2010
MW-WSP-H-1042	C	Integrated Water Management Plan Civil Details	Sept 2010
MW-WSP-H-1043	C	Integrated Water Management Plan Stormwater Catchment Proposed Park Sheet 1 of 1	Sept 2010
Work Plans prepared by Tracy Brunstrom & Hammond P/L, submitted with the Environmental Assessment Report			
Drawing No.	Rev	Name of Plan	Date
Set of 8 Plans	0	Barangaroo Headland Park – Main Works	12 Oct 2010
Set of 2 Plans	0	Barangaroo Headland Park – Main Works	2 June 2010

except for:

- (1) any modifications which are 'Exempt and Complying Development' as identified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 or as may be necessary for the purpose of compliance with the BCA and any Australian Standards incorporated in the BCA; and
- (2) otherwise provided by the conditions of this approval.

A3 INCONSISTENCY BETWEEN DOCUMENTS

- a) In the event of any inconsistency between conditions of this approval, the drawings/documents referred to above and/or the Statement of Commitments, the conditions of this approval prevail.
- b) No Approval is expressed or implied to the contours of the Headland Park and Northern Cove as depicted on the submitted plans detailed above in Condition A2 – Development in accordance with plans and documentation.

A4 PRESCRIBED CONDITIONS

The Proponent shall comply with the prescribed conditions of approval under Clause 98 of the *Environmental Planning and Assessment Regulation 2000* in relation to the requirements of the *Building Code of Australia* (BCA).

A5 REMEDIATION ACTION PLAN (RAP) AND HUMAN HEALTH ECOLOGICAL RISK ASSESSMENT (HHERA)

Prior to the commencement of any works under the RAP identified in the Preferred Project Report- Barangaroo Headland Park Main Works:

- a) the HHERA and RAP must be prepared in accordance with guidelines produced or approved under s105 of the Contaminated Land Management Act, 1997.
- b) the HHERA must be approved by DECCW, in accordance with guidelines produced or approved under s105 of the Contaminated Land Management Act, 1997.
- c) the RAP must be approved jointly by DECCW and a NSW EPA accredited Site Auditor, in accordance with guidelines produced or approved under s105 of the Contaminated Land Management Act, 1997.
- d) The RAP must be approved by the Minister for Planning as the approval authority

A6 SYDNEY PORTS CORPORATION REQUIREMENTS

- (a) In association with the Noise and Vibration Management Plan, the preparation of noise management levels for sites, Harbour Control Tower, Moores Wharf facility and the Cruise Passenger Terminal, will be prepared and finalised in consultation with Sydney Ports Corporation.
- (b) Access to Moores Wharf facility is not be impeded by parked vehicles or construction traffic during and post construction of the Headland Park and Northern Cove.

A7 COMPLAINTS MANAGEMENT SYSTEM

The proponent must prepare and implement a Construction Complaints Management System before construction commences and maintain the System for the duration of 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

The telephone number, postal address and email address shall be included on the Site Notice prior to the commencement of construction. A record of complaints received and responses shall be maintained for the duration of construction.

A 8 *SEPARATE PROJECT APPLICATIONS*

Separate project applications are required for the use of the proposed 300 space car park and floor area associated with the Cultural Facility.

A9 *MEDIATION*

Where this approval requires further consent from Council or another Authority, the parties shall not act unreasonably preventing an agreement from being reached. In the event that an agreement is unable to be reached within 2 months or a timeframe otherwise agreed to by the Director General, the matter is to be referred to the Director General for resolution. All areas of disagreement and the position of each party are to be clearly stated to facilitate a resolution.

End of Section

PART B - PRIOR TO COMMENCEMENT OF WORK

B1 ENVIRONMENTAL PROTECTION LICENCE

Prior to the commencement of works, the Proponent must ensure that the existing Environmental Protection Licence (EPL) issued to the Barangaroo Delivery Authority is varied to reflect and permit the works conducted on site. All works undertaken on site must be done in a manner which ensures compliance with EPL conditions at all times.

B2 EMERGENCY ACCESS

The development is to incorporate sufficient pedestrian egress and fire brigade intervention facilities such as fire isolated stairs and fire hydrant systems, to ensure the development complies with NSW Fire Brigade requirements.

B3 CHANGES TO KERB SIDE PARKING RESTRICTIONS

A separate submission must be made to the relevant road authority for approval for any changes to kerb side parking arrangements.

B4 COST OF SIGNPOSTING

All costs associated with signposting for any kerbside parking restrictions and traffic management measures associated with the development shall be borne by the developer.

B5 SERVICE VEHICLES

Adequate space must be provided to allow manoeuvring and turning of the different sized vehicles. The design, layout, signage, line marking, lighting and physical controls for all service vehicles must comply with the minimum requirements of 'Australian Standard AS 2890.2 – 2002 Off-Street Parking Part 2: Commercial vehicle facilities'. Details must be submitted to and approved by the Certifying Authority.

B6 LIGHTING – PUBLIC DOMAIN AND PUBLICLY ACCESSIBLE AREAS

The lighting of all areas which are publicly accessible within Stage 3 of the Barangaroo site which is affected by the development must be designed to replicate the lighting treatment in the existing sections of these roadways. Details are to be submitted to the Certifying Authority for approval.

B7 FOOTPATH DAMAGE BANK GUARANTEE

A Footpath Damage Bank Guarantee to cover footpaths within Stage 3 of the Barangaroo site which is affected by the development must be lodged with Council in accordance with the City of Sydney's adopted Schedule of Fees and Charges. The Footpath Damage Bank Guarantee must be submitted in favour of Council as security for repairing any damage to the public domain in the vicinity of the site. The guarantee must be lodged with Council prior to commencement of work.

B8 STORMWATER AND DRAINAGE – MAJOR DEVELOPMENT

On-site detention, treatment and re-use is encouraged.

- (a) Details of the proposed stormwater disposal and drainage from the development including a system of on-site stormwater detention in accordance with Council's standard requirements and details of the provision and maintenance of overland flow paths must be submitted to and approved by Council. All approved details for the disposal of stormwater and drainage are to be implemented in the development.
- (b) Any proposed connection to the Council's underground drainage system will require the owner to enter into a Deed of Agreement with the Council and obtain registration on Title of a Positive Covenant prior to the commencement of any work within the public way.
- (c) The requirements of Sydney Water with regard to the on site detention of stormwater must be ascertained and complied with. Evidence of the approval of Sydney Water to the on-site detention must be submitted prior to commencement of work.
- (d) An "Application for Approval of Stormwater Drainage Connections" must be submitted to the Council with the appropriate fee at the time of lodgement of the proposal for connection of stormwater to the Council's drainage system

B9 PRE-CONSTRUCTION DILAPIDATION REPORTS

The Proponent is to engage a qualified structural engineer to prepare a Pre-Construction Dilapidation Report detailing the current structural condition of all existing and adjoining buildings, infrastructure, roads and public domain areas. The report shall be submitted to the satisfaction of the Certifying Authority prior to commencement of work.

A copy of the report is to be forwarded to the Department.

B10 DRIVEWAY CROSSOVERS

All driveway crossovers, including those for service vehicles, must be designed in accordance with the Sydney streets design code. All crossovers should be designed to give pedestrians priority and with no grade change for pedestrians.

B11 DILAPIDATION SURVEY

A Dilapidation Survey of the following heritage items is to be undertaken:

- (a) SLEP Schedule 8 Part 1 Item No 840: Georgian cottage at 14-16 Merriman Street.
- (b) SLEP Schedule 8 Part 1 item No. 857: Cottage at 18 Merriman Street;
- (c) SLEP Schedule 8 Part 1 item No 903: Two terrace groups at 20-42 and 44- 48 Merriman Street;
- (d) SLEP Schedule 8 Part 1 item No 316: The former Dalgety's Bond Stores at 6-10 Munn Street; and
- (e) SLEP Schedule 8 Part 1 item No 317: Terrace at 18 - 20 Munn Street.

The report is to be submitted to the Certifying Authority, the Department and Council prior to commencement of work.

B11 ASSOCIATED ROADWAY COSTS

All costs associated with the construction of any new road works including kerb and gutter, road pavement, drainage system and footway shall be borne by the developer. The new road works must be designed and constructed in accordance with the City's "Development Specification for Civil Works Design and Construction".

B12 BICYCLE PARKING

The layout, design and security of bicycle facilities either on-street or off-street must comply with the minimum requirements of Australian Standard AS 2890.3 – 1993 Parking Facilities Part 3: Bicycle Parking Facilities except that:

1. All bicycle parking for occupants of residential buildings must be Class 1 bicycle lockers, and
2. All bicycle parking for staff / employees of any land uses must be Class 2 bicycle facilities, and 3. All bicycle parking for visitors of any land uses must be Class 3 bicycle rails.

B13 CAR PARKING SPACES AND DIMENSIONS

A maximum of 300 off-street car parking spaces must be provided. The design, layout, signage, line marking, lighting and physical controls of all off-street parking facilities must comply with the minimum requirements of Australian Standard AS/NZS 2890.1 - 2004 Parking facilities Part 1: Off-street car parking and Council's Development Control Plan. The details must be submitted to and approved by the Principal Certifying Authority prior to commencement of work.

B14 LOCATION OF ACCESSIBLE CAR PARKING SPACES

Where a car park is serviced by lifts, accessible spaces for people with mobility impairment are to be located to be close to lifts. Where a car park is not serviced by lifts, accessible spaces for people with mobility impairment are to be located at ground level, or accessible to ground level by a continually accessible path of travel, preferably under cover.

B15 LOCATION OF DRIVEWAYS

The access driveway for the site must not be closer than:

- 10 metres from the kerb line of the nearest cross street/lane.
- 20 metres from the kerb line of the nearest signalised cross street/lane.
- 1 metre from the property boundary of the adjacent site.
- 2 metres from any other driveway.

The details must be submitted to and approved by the Certifying Authority prior to commencement of work.

B16 SIGNS AT EGRESS

The following signs must be provided and maintained within the site at the point(s) of vehicular egress:

- Compelling drivers to stop before proceeding onto the public way
- Compelling drivers to “Give Way to Pedestrians” before crossing the footway; or compelling drivers to “Give Way to Pedestrians and Bicycles” before crossing a footway on an existing or identified shared path route.

B17 VEHICLE FOOTWAY CROSSING

A separate application is to be made to, and approved by, Council for the construction of any proposed vehicle footway crossing or for the removal of any existing crossing and replacement of the footpath formation where any such crossings are no longer required.

All disused or redundant vehicle crossings and laybacks must be removed and footway and kerb reinstated in accordance with Council's standards, to suit the adjacent finished footway and edge treatment materials, levels and details, or as otherwise directed by Council officers. All construction and replacement works are to be completed in accordance with the approved plans prior to the issue of an Occupation Certificate, if required.

Note: In all cases the construction materials should reinforce the priority of pedestrian movement over that of the crossing vehicle.

B18 VEHICLES ACCESS

The site must be configured to allow all vehicles to be driven onto and off the site in a forward direction.

B19 ALIGNMENT LEVELS

Prior to commencement of work, footpath alignment levels must be submitted to Council for approval. This submission must be accompanied by a plan prepared by a Registered Surveyor showing the existing location, size and levels (AHD) of all service covers, trees, poles and street furniture, and alignment levels of cross sections, alignment levels at pedestrian entrances within the footway adjacent to and extending 20 metres past either side of the site, **alignment levels of cross sections at pedestrian access points down to the waters edge, tidal ponds and man-made beach areas along the foreshore pathway.**

These alignment levels, as approved by Council, are then to be incorporated into the plans.

End of Section

B20 CONSTRUCTION FRAMEWORK ENVIRONMENTAL MANAGEMENT PLAN

Prior to commencement of the works, the Proponent shall prepare a Construction Framework Environmental Management Plan (CFEMP) to be submitted to DECCW for review and endorsement and to the Director General for approval. The CFEMP must:

- a. Describe the relevant stages and phases of construction including work program outlining relevant timeframes for each stage/phase.
- b. Describe all activities to be undertaken on the site during site establishment and construction of the development
- c. Clearly outline the stages/phases of construction that require ongoing environmental management monitoring and reporting.
- d. Detail statutory and other obligations that the Proponent is required to fulfil during site establishment and construction, including approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies.
- e. Include specific consideration of measures to address any requirements of DECCW during site establishment and construction.
- f. Describe the roles and responsibilities for all relevant employees involved in the site establishment and construction of the works.
- g. Detail how the environmental performance of the site preparation and construction works will be monitored, and what actions will be taken to address and identified adverse environmental impacts.
- h. Documents all sub environmental management plans, studies and monitoring programs required in this approval.
- i. Include arrangements for community consultation and complaints handling procedures during construction.
- j. The CFEMP and any sub plans should be revised:
 - at each key stage of the works,
 - in response to future project approvals,
 - in response to major changes in site conditions or work methods, and
 - in support of licence variations as necessary.

B21 WASTE MANAGEMENT

Prior to the commencement of each stage of works, the Proponent must develop and submit to DECCW for review and comment a revised Waste Management Plan. The Plan must include (but not be limited to):

1. A stockpile, contamination soil and sediment management plan including (at a minimum):
 - a. The exact locations where contaminated waste material (including Acid Sulphate Soils) and non-contaminated waste material will be stockpiled. Contaminated and non-contaminated waste material must be stockpiled separately and the designated areas must be clearly marked and labelled (on the plans and on the ground);
 - b. Details of how stockpiled contaminated waste material will be kept separate from non-contaminated waste material;
 - c. Details of how runoff from stockpiled contaminated waste material will be kept separate from non-contaminated runoff;
 - d. Details of measures to be employed to manage leachate runoff from all stockpiles, including bunding, sediment ponds and hay bales. The Plan should include locations of each control measure, its specifications and its capacity to cope with runoff from a designed storm event (to be determined in consultation with DECCW);
 - e. The maximum proposed heights and volumes for each stockpile to reduce the potential for dust and odour and greater detail on stockpile stabilisation and covering to minimise odour and vapour emissions;
 - f. Procedures for minimising the movement of waste material around the site and double handling; and
 - g. Additional information detailing how materials proposed to be recycled / reused will be segregated on the site during operations. Particularly in relation to those wastes categorised as "Building" waste.
-

2. A detailed plan for in-situ classification of waste material, including the sampling locations and sampling regime that will be employed to classify the waste, particularly with regards to the identification of contamination hotspots.
3. A commitment to retaining all sampling and classification results for the life of the project to demonstrate compliance with DECCW's Classification Guidelines.
4. Details in relation to the "Concrete Crushing and Screening Plant" to be installed at the site and its use, including (at a minimum):
 - a. Location and specifications of the concrete crushing and screening plant;
 - b. Estimated quantities of concrete to be crushed per day;
 - c. Measures that will be employed to prevent or minimise the emission of dust from the crushing activity; and
 - d. Measures that will be employed to prevent or minimise the emission of noise from the crushing activity.
5. Details in relation to the transport of waste material around the site (on-site) and from the site, including (at a minimum):
 - a. A traffic plan showing transport routes from the southern to the northern end of the site;
 - b. Location of the stockpiles at each stage as they migrate from the southern end of the site to the northern end of the site;
 - c. Details of any garden waste mulching processes and garden waste stockpiles, including considerations for odour generation;
 - d. A commitment to retain waste transport details for the life of the project to demonstrate compliance with the Protection of the Environment Operations Act; and
 - e. The name and address of each licensed facility that will receive waste from the Barangaroo site (if appropriate);
6. Details of the de-watering process, including the specifications for any on-site water treatment plant.
7. A contingency plan for any event that may affect excavation and contaminated soil treatment operations at the site, particularly in relation to the expected volumes materials excavated/generated at the site.

B22 NOISE AND VIBRATION

1. The proponent must prepare and implement a detailed Construction Noise and Vibration Management Plan (CNVMP), to be approved by the Director General of the Department of Planning before commencement of works, that includes but is not necessarily limited to;
 - (a) identification of the specific activities that will be carried out and associated noise sources at the premises,
 - (b) identification of all potentially affected sensitive receiver locations,
 - (c) quantification of the rating background noise level (RBL) for sensitive receivers, as part of the CNVMP, or as undertaken in the EA,
 - (d) the construction noise, ground-borne noise and vibration objectives derived from an application of the DECCW Interim Construction Noise Guideline (ICNG), as reflected in conditions of approval,
 - (e) prediction and assessment of potential noise, ground-borne noise (as relevant) and vibration levels from the proposed construction methods expected at sensitive receiver premises against the objectives identified in the ICNG and conditions of approval,
 - (f) where the objectives are predicted to be exceeded, an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise and vibration impacts,
 - (g) description of management methods and procedures, and specific noise mitigation treatments / measures that will be implemented to control noise and vibration during construction,
-

- (h) where the objectives cannot be met, additional measures including, but not necessarily limited to, the following should be considered and implemented where practicable; reduced hours of construction, the provision of respite from noisy / vibration intensive activities, acoustic barriers / enclosures, alternative excavation methods or other negotiated outcomes with the affected community,
 - (i) where night time noise management levels cannot be satisfied, a report shall be submitted to the Director General outlining the mitigation measures applied, the noise levels achieved and justification that the outcome is consistent with best practice,
 - (j) measures to identify non-conformances with the requirements of the CNVMP, and procedures to implement corrective and preventative action,
 - (k) suitable contractual arrangements to ensure that all site personnel, including sub-contractors, are required to adhere to the noise management provisions in the CNVMP,
 - (l) procedures for notifying residents of construction activities that are likely to effect their noise and vibration amenity,
 - (m) measures to monitor noise performance and respond to complaints,
 - (n) measures to reduce noise related impacts associated with offsite vehicle movements on nearby access and egress routes from the site,
 - (o) procedures to allow for regular professional acoustic input to construction activities and planning; and,
 - (p) effective site induction, and ongoing training and awareness measures for personnel (e.g. tool box talks, meetings etc).
2. All construction work at the premises must be conducted between 7am and 6pm Monday to Friday and between 8am and 3pm Saturdays and at no time on Sundays and public holidays, unless inaudible at any residential premises. Works outside these hours are not permitted except as explicitly specified below or in other conditions and include:
 - (a) the delivery of materials which is required outside these hours as requested by Police or other authorities for safety reasons;
 - (b) emergency work to avoid the loss of lives, damage to property and/or to prevent environmental harm;
 - (c) other works expressly approved by the Director General of the Department of Planning;
 - (d) Out of standard hours works identified in a CNVMP approved by the Director General of the Department of Planning.
 3. Construction noise management levels (NML) derived in accordance with the DECCW Interim Construction Noise Guidelines apply to this project, and are required to be identified in an approved CNVMP. Any activities that have the potential for noise emissions that exceed the NMLs must be identified and managed in accordance with the CNVMP. The Proponent must implement all Reasonable and Feasible noise mitigation and management measures with the aim of achieving the NMLs.
 4. Vibration caused by Construction and received at any sensitive receiver outside the project must be assessed against the guidelines contained in the DECCW publication "Environmental Noise Management - Assessing Vibration: a technical guideline" and in accordance with the CNVMP.

In addition to the conditions above, it is normal practice for DoP to impose "Construction Noise Management" conditions, for example conditions 31-34 in the project approval for the City West Cable Tunnel (http://www.planning.nsw.gov.au/asp/pdf/05_0178_dgreport.pdf). These conditions are also recommended for imposition in any project approval for the Barangaroo site.
 5. All mechanical plant and equipment associated with post-construction facilities at Headland Park (e.g. air conditioning plant, generators, chillers, pump stations, treatment plants etc) are to not emit noise more than 5dBA above background, in accordance with the NSW Government's Industrial Noise Policy.
-

B23 WATER

1. Prior to the commencement of works, the proponent must develop and provide to the DECCW for comment, a comprehensive Stormwater and Water Management Plan.
 2. All groundwater or surface water arising from the works must be collected, managed and/or treated in a manner that ensures that it can be legally discharged to waters.
 3. All water discharged from the site must comply with the table of limits (see Attachment 2) unless otherwise agreed to by DECCW. In addition to the limits (Attachment 2), a turbidity limit or trigger will be applied to ambient monitoring locations outside silt curtains. In the initial stages of the project an interim limit or trigger of 50 mg/L will be applied. Once sufficient ambient data is available from both ambient monitoring locations and reference locations a final limit or trigger will be developed which will include consideration of background turbidity. Trigger criteria for commencing management action should be specified in the Stormwater and Water Management Plan.
 4. Any discharge structure constructed to allow water to be discharged to Darling Harbour must allow for at least an initial 5 fold dilution. Dilution calculations must be provided to allow dilution to be factored into any licence conditions. Dilution is not acceptable for bioaccumulative chemicals. The discharge point must be installed inside an appropriately installed silt curtain arrangement.
 5. Silt curtains must be in place prior to any excavation of the northern cove, including the stage where the cement caissons remain in place.
 6. Any proposed water treatment plant to facilitate discharges to Darling Harbour must be designed to remove all relevant contaminants (including petroleum hydrocarbons, PAHs, BTEX, sediments and metals) to a level in the water management plan or as otherwise agreed to by DECCW.
 7. Untreated water must be held onsite until results from monitoring are available for review unless otherwise agreed to by DECCW.
 8. The stormwater soil erosion and sediment control measures must be designed in accordance with the document titled "*Managing Urban Stormwater – Soils and Construction, Volume 1*" and incorporated into the Soil and Water Management Plan. For sediment disturbance activities, such as soil stockpiling fill near the Harbour, a high level of sediment control and runoff capture protection will be required, including sizing of sediment basin to be increased from an average recurrence interval of 85 to 90% to reduce the risk of sediment runoff into Sydney Harbour during construction activities. DECCW may require the installation and maintenance of silt curtains in areas of shorelines and stormwater runoff outlets to control turbidity where rainfall events exceed the design capacity of the system (this requirement should be discussed in the Soil and Water Management Plan but DECCW may review case by case).
 9. The Soil and Water Management Plan must include a detailed proposal for monitoring water quality.
 10. The monitoring program must at least include an onsite program for waters held onsite prior to discharge to Darling Harbour either via the stormwater system or via a water treatment plant. It must include also an ambient monitoring program.
 11. Water to be discharged to Darling Harbour must be monitored on a daily basis for the first two weeks of operations. The monitoring frequency of subsequent discharges must be not less than weekly and unless otherwise agreed by DECCW and/or permitted by licence conditions.
 12. The on site monitoring program must cover all types of water on the site that needs to be discharged including turbid stormwater from areas of low or no contamination; stormwater that has come into contact with contaminated areas; and contaminated groundwater from excavations or earth works.
 13. Initial intensive monitoring must be conducted to coincide with actual worse case conditions (eg. significant rainfall events) during full scale excavation, fill and stockpiling activities, in order to provide information to DECCW on which to base licence conditions on for ongoing
-

activities (eg. in order to relax the frequency of monitoring if water quality controls are effective).

14. The ambient water monitoring program must include up and downstream/tide sampling locations around potential sources of sediment discharge to the Harbour (including near discharge point silt curtains, near excavation of the northern cove and near naturalistic shoreline shaping) as well as a reference locations. (The reference location for other Barangaroo sites could be used).
15. Different monitoring locations may be required for Early and Main Work, for different stages of works and for different components of the works (these locations may be specified in the Environment Protection Licence).
16. The quality of the fill to be used on the Headland will need to be uncontaminated such that groundwater moving through the fill and to the Harbour, must meet ANZECC 2000 guidelines for aquatic ecosystems and other relevant environmental values at any points of discharge to the Harbour. The Human Health and Ecological Risk Assessment will need to account for this risk factor. The impacts on water quality and reuse water in the longer term post construction period must also be addressed.
17. No water that is contaminated may be reused on site without being treated to meet relevant criteria determined by the Human Health and Ecological Risk Assessment that addresses this risk.
18. The Soil and Water Management Plan must consider cumulative impacts on water quality during the life of the headland construction; the cumulative impacts on water quality due to all related works at the Barangaroo site.
19. For the proposed seawater cooling system, details of the configuration of inlet and outlet pipes and proposed quality of water discharge (in particular heat and antifouling chemicals) should be provided to DECCW for review and comment as part of the proposed detailed concept design stage.

B24 AIR

1. An Air Quality Management Plan must be developed for the project. The Air Quality Management Plan must be approved by the Director General in consultation with the Department of Environment, Climate Change and Water.
 2. The Air Quality Management Plan must include, as a minimum, the following elements:
 - Relevant environmental criteria to be used in the day to day management of dust and volatile organic compounds (VOC)/odour;
 - Mission statement;
 - Dust and VOCs/odour management strategies, consisting of:
 1. Objectives and targets;
 2. Risk assessment;
 3. Suppression improvement plan.
 - Monitoring requirements including assigning responsibility (for all employees and contractors);
 - Communication strategy; and
 - System and performance review for continuous improvement.

Broad outlines of the above elements can be found in Attachment 3.
 3. The Air Quality Management Plan must detail management practices to be implemented for all dust and VOC/odour sources at the site.
 4. The Air Quality Management Plan must detail the dust, odour, VOC and semi-volatile organic compounds (SVOC) monitoring program (e.g. frequency, duration and method of monitoring) to be undertaken for the project.
 5. Management strategies, including physical controls and modified operating regimes, included in the Air Quality Management Plan must be included in a revised air quality impact assessment for the project. The revised assessment must:
 - be conducted in accordance with the Approved Methods for the Modeling and Assessment of Air Pollutants in NSW (DECCW, 2005);
-

- demonstrate that the proposed emission controls included in the project Air Quality Management Plan are sufficient to ensure no additional exceedances of DECCW's impact assessment criteria; and
 - justify proposed locations for all ambient air quality monitoring included in the project Air Quality Management Plan.
6. The Air Quality Management Plan must not be approved until after the revised air quality impact assessment required in Condition 1.5 (above) has been completed to the satisfaction of the Director General, in consultation with the Department of Environment, Climate Change and Water.
 7. Excavation and/or receipt of fill materials shall not occur at the site until the Air Quality Management Plan has been approved by the Director General.

B25 DUST GENERATION

All operations and activities occurring at the premises must be carried out in a manner that will minimise or prevent the emission of dust from the premises. The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

B26 ODOUR

The applicant must not cause or permit the emission of offensive odour beyond the boundary of the premises.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the applicant must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

B27 STOCKPILE MANAGEMENT

All stockpiles shall be maintained at manageable sizes which allow them to be covered, if necessary, to control emissions of dust and/or VOCs/odour.

B28 APPLICATION FOR HOARDINGS AND SCAFFOLDING ON A PUBLIC PLACE

- (a) A separate application under Section 138 of the *Roads Act 1993* is to be made to the relevant road authority to erect a hoarding and/or scaffolding in a public place and such application is to include:-
 - (i) Architectural, construction and structural details of the design.
 - (ii) Structural certification prepared and signed by an appropriately qualified practising structural engineer.

Evidence of the issue of a Structural Works Inspection Certificate and structural certification will be required prior to the commencement of demolition or construction works on site.

Assessment of the impacts of construction and final design upon the City of Sydney's street furniture such as bus shelters, phone booths, bollards and litter bins and JCDecaux street furniture including kiosks, bus shelters, phones, poster bollards, bench seats and litter bins. The Proponent is responsible for the cost of removal, storage and reinstallation of any of the above as a result of the erection of the hoarding. In addition, the Proponent is responsible for meeting any revenue loss experienced by Council as a result of the removal of street furniture. Costing details will be provided by Council. The Proponent must also seek permission from the telecommunications carrier (e.g. Telstra) for the removal of any public telephone.

- (b) Should the hoarding obstruct the operation of Council's CCTV Cameras, the Proponent shall relocate or replace the CCTV camera within the hoarding or to an alternative position as determined by Council's Contracts and Asset Management Unit for the duration of the construction of the development. The cost of relocating or replacing the CCTV camera is to be borne by the Proponent. Further information and a map of the CCTV cameras is available by contacting Council's CCTV Unit on 9265 9232.
 - (c) The hoarding must comply with relevant road authority policies for hoardings and temporary structures on the public way. Graffiti must be removed from the hoarding within one working day.
-

B29 C7 HAZARDOUS MATERIALS IMMOBILISATION

If any soils need to be disposed of off site then it will need to comply with the Waste Classification Guidelines. These guidelines may indicate the material will need to be immobilised prior to disposal. If this is the case, the Proponent must apply to DECCW for site specific immobilisation approval.

B30 SEAWALLS

Seawalls must be designed in accordance with the principles of the Environmentally Friendly Seawalls Guidelines issued by DECCW.

B31 BARRICADE PERMIT

Where construction/building works require the use of a public place including a road or footpath, approval under Section 138 of the *Roads Act 1993* for a Barricade Permit is to be obtained from the relevant road authority prior to the commencement of work. Details of the barricade construction, area of enclosure and period of work are required to be submitted to the satisfaction of Council.

B32 TRAFFIC WORKS

Any proposals for alterations to the public road, involving traffic and parking arrangements, must be designed in accordance with RTA Technical Directives and must be referred to and approved by the relevant road authority prior to any work commencing on site.

B33 VEHICLE CLEANSING

Prior to the commencement of work, suitable measures are to be implemented to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site. It is an offence to allow, permit or cause materials to pollute or be placed in a position from which they may pollute waters.

B34 ARCHIVAL DOCUMENTATION

Archival documentation of the Sewage Pumping Station (SPS0014) is to be carried out for future reference in accordance with the NSW Heritage Branch's Guidelines for the documentation of heritage places of local significance prior to commencement any demolition works. A copy of the Archival Documentation is to be lodged with the City of Sydney Archives.

B35 RELOCATION OF SEWAGE PUMPING STATION (SPS0014)

The relocation of the Sewage Pumping Station (SPS0014) is to be undertaken by Relocation Option Two of Structural Report by Shreeji Consultants, relocation by lifting the building intact. The entire process is to be monitored by a suitably qualified the Structural Engineer and Heritage Architect.

B36 GEOMETRIC ROAD DESIGN FOR CAR PARK ENTRANCE ROAD

The design of the Car Park entrance road shall be undertaken in accordance with Council's Development Specification for Civil Works. The design and documentation of the proposed road system where it adjoins the public road at Towns Place shall include the following information, which must be submitted with future applications for development of the site:

1. General subdivision plan with contour details and a clear indication of the extent of roadworks;
2. Road plan and longitudinal sections showing services;
3. Road cross sections showing road widths, pavement configuration, batter slopes and kerb and gutter types;
4. Drainage plan and schedule of drainage elements;
5. Drainage profiles;
6. Utility services;
7. Traffic management and intersection layout details including line marking, pavement marking and signposting;
8. Standard engineering and structural details plan;
9. Services plans for utility services including design report;
10. Design Certification report and check lists 1-9 for Council's Development Specification for Civil Works.

All design documentation shall be completed in accordance with the relevant standards and specifications as adopted by Council from time to time. All engineering plans and calculations shall be checked and signed by a professional engineer.

The applicant shall submit plans of subdivision incorporating bearings, distances, and areas of land proposed for dedication to Council, as well as those proposed for road closure. The plans shall clearly

describe existing and proposed site boundaries, public reserves, public roads, drainage reserves, and easements.

B37 PAVING MATERIALS

The surface of any material used or proposed to be used for the paving of footways, thoroughfares, plazas and the like which are used by the public must comply with AS/NZS 4586:2004 (including amendments) "Slip resistance classification of new pedestrian surface materials".

- (1) The applicant shall provide a system of underground street and pedestrian lighting along all roads, footpaths and within the new park in accordance with Council and Energy Australia standards. Detailed plans and construction specifications for the works shall be prepared, submitted to Council for approval and certified as complying with Council's and Energy Australia's specifications.
- (2) The Lighting Plan(s) shall indicate layout, location, connections, conduits, types, luminaries, fixtures and category for street lighting, pedestrian lighting and feature lighting.
- (3) The detailed plans and supporting documentation shall conform to the following design criteria:
 - (a) Lighting in laneways and pedestrian pathways to comply with AS1158.3.1 Category P2;
 - (b) Lighting in footpaths along Lachlan Street, Bourke Street, Sydney Gate and the new public roads to comply with AS1158.3.1 Category P2;
 - (c) All through traffic roads shall be illuminated to comply with AS1158.3.1 Category V3;
 - (d) Lighting designs to be certified by a practicing lighting engineer; and
 - (e) That all fittings and fixtures used other than metal halide luminaries shall be compatible with those used within Energy Australia's street lighting network.

B38 LIGHTING – PUBLIC DOMAIN AND PUBLICLY ACCESSIBLE AREAS

The applicant shall provide a system of underground supplied Smartpoles street lighting and pedestrian lighting along all roads, pedestrian pathways and plaza areas in accordance with the City's public domain lighting specifications and Energy Australia network supply standards. Detailed plans and construction specifications for the works shall be prepared by an approved lighting engineer and submitted to Council for information.

The Lighting Plan(s) shall indicate pole layout, luminaire specifications, vertical and horizontal luminance plots to demonstrate design lighting levels to all areas and electrical supply reticulation including details of connection to Energy Australia's low voltage supply network. The detailed plans and supporting documentation shall conform to the following design criteria:

- (1) Lighting installations in public and publicly accessible locations are to comply with the requirements of the "City of Sydney Exterior Lighting Strategy". This document can be [down loaded from the City's website www.cityofsydney.nsw.gov.au/Development/Controls&Conditions/DevelopmentPolicies/CityofSydneyExteriorLightingStrategy](http://www.cityofsydney.nsw.gov.au/Development/Controls&Conditions/DevelopmentPolicies/CityofSydneyExteriorLightingStrategy).
- (2) Lighting must be designed to meet AS1158.1.1 Category V1 for Hickson Road and Towns Place; Category V3 for other roads and AS1158.3.1 Category P3 for footpaths.
- (3) Recommend Category P1 compliance for the waterfront promenade pathway and P2 compliance for secondary pathways connecting the roadways.
- (4) Certification of compliance of the lighting designs with the specified standards must be prepared by a qualified lighting engineer and must be provided with the submitted lighting plans.

PART D - DURING CONSTRUCTION

D1 NOISE AND VIBRATION

The proponent must monitor noise levels at the most affected receiver location during rock hammering, rock sawing, rock breaking and any other such noisy activities. If levels exceed LAeq, (15 minute) 70 dB(A) for 12 consecutive fifteen minute periods (3 hours) within the approved hours of works, the proponent must incorporate respite periods of 1 hour every 3 hours.

D2 ARCHAEOLOGICAL DISCOVERY DURING EXCAVATION

- (a) The recommendations of the nominated site archaeologists should be carried out, including determining whether any further site archaeological monitoring is required during excavation works.
- (b) Should any historical relics likely to be of significance be unexpectedly discovered on the site during excavation, all excavation or disturbance to the area is to stop immediately and the Heritage Council of NSW should be informed in accordance with section 146 of the *Heritage Act 1977*.
- (c) Should any Aboriginal relics be unexpectedly discovered then all excavation or disturbance of the area is to stop immediately and the National Parks and Wildlife Service is to be informed in accordance with Section 91 of the *National Parks and Wildlife Act 1974*.
- (d) Any relics found on site that are capable of being included in the site's heritage interpretation or public art, are to be kept safe for consideration of their incorporation into site fixtures.

D3 VEHICLE FOOTWAY CROSSING

A separate application is to be made to, and approved by, the relevant road authority for the construction of any proposed vehicle footway crossing or for the removal of any existing crossing and replacement of the footpath formation where any such crossings are no longer required.

All disused or redundant vehicle crossings and laybacks must be removed and footway and kerb reinstated in accordance with design and construction details as prepared by a suitably qualified Civil Engineer, to suit the adjacent finished footway and edge treatment materials, levels and details. All construction and replacement works are to be completed in accordance with the approved plans prior to the issue of a final Occupation Certificate.

D4 COVERING OF LOADS

All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter must have their loads fully covered before entering the public roadway.

D5 TRAFFIC IMPACT ASSESSMENT & CONSTRUCTION TRAFFIC MANAGEMENT PLAN

- (a) Construction works will be undertaken generally in accordance with the Traffic Impact Assessment & Construction Traffic Management Plan prepared by Halcrow, Issue 1.3 dated 26 October 2010, except where modified elsewhere in this condition.
 - (b) Under the current legislation the use of lengthy vehicles in the CBD is prohibited within certain time frames. All lengthy vehicles must comply with this regulation as stipulated in the NSW Road Rules. A map indicating the prohibited area and definitions of lengthy vehicles are included in the Road Rules.
 - (c) Personnel using stop/slow signage are not permitted in Hickson Road or Sussex Street on weekdays between the hours of 7.00am to 9.00am and 4.00pm to 7.00pm. However, personnel using stop/slow signage will be permitted on Hickson Road, north of the intersection of Hickson Road and Napoleon Street, when it is required to ensure safe truck access at designated site access points, provided that vehicle queue lengths generated as a result of the traffic control do not exceed more than six vehicles in either direction.
 - (d) Truck movements should be staged and coordinated to prevent trucks circling CBD streets whilst awaiting access to the site. There should be holding areas outside the CBD on the fringes or sufficient space within the site to store trucks and heavy vehicles.
 - (e) To minimise impacts on public transport, trucks should avoid where possible the use of York Street to access the development site between 2.00pm to 8.00pm Monday to Friday.
 - (f) The Proponent is also to enter into an 'Operational Protocol' regarding the traffic management arrangements where the haul route between the Stage 1 excavation site and
-

the site of the Headland Park interfaces with the pedestrian and vehicular traffic servicing the temporary Cruise Passenger Terminal at Gates 4 and 5 (The Crossings).

The Operational Protocol will be prepared prior to operation of The Crossings and will establish an agreed framework for their management on ship days.

A copy is to be provided to the Director General prior to operation of The Crossings.

D6 DEMOLITION, EXCAVATION AND CONSTRUCTION MANAGEMENT

- (a) Demolition and/or excavation work will be carried out under the following conditions:
- (i) A Demolition Work Method Statement prepared by a licensed demolisher who is registered with the Work Cover Authority. (The demolition by induced collapse, the use of explosives or on-site burning is not permitted.)
 - (iii) An Excavation Work Method Statement prepared by an appropriately qualified person.
 - (iv) A Waste Management Plan for the demolition and or excavation of the proposed development.
- (b) Such statements must, where applicable, be in compliance with AS2601-1991 Demolition of Structures, the *Construction Safety Act 1912* and Demolitions Regulations; the *Occupational Health and Safety Act 2000* and Regulation; Council's Policy for Waste Minimisation in New Developments 2005, the *Waste Minimisation and Management Act 1995*, and all other relevant acts and regulations and must include provisions for:
- (i) A Materials Handling Statement for the removal of refuse from the site in accordance with the *Waste Minimisation and Management Act 1995*.
 - (ii) The name and address of the company/contractor undertaking demolition/excavation works.
 - (iii) The name and address of the company/contractor undertaking off site remediation/disposal of excavated materials.
 - (iv) The name and address of the transport contractor.
 - (v) The type and quantity of material to be removed from site.
 - (vi) Location and method of waste disposal and recycling.
 - (vii) Proposed truck routes, in accordance with this development approval.
 - (viii) Procedures to be adopted for the prevention of loose or contaminated material, spoil, dust and litter from being deposited onto the public way from trucks and associated equipment and the proposed method of cleaning surrounding roadways from such deposits. (Note: With regard to demolition of buildings, dust emission must be minimised for the full height of the building. A minimum requirement is that perimeter scaffolding, combined with chain wire and shade cloth must be used, together with continuous water spray during the demolition process. Compressed air must not be used to blow dust from the building site).
 - (ix) Measures to control noise emissions from the site.
 - (x) Measures to suppress odours.
 - (xi) Enclosing and making the site safe.
 - (xii) Suitable Public Liability Insurance as reasonably required by the relevant authority for the duration of the demolition works.
 - (xiii) Induction training for on-site personnel.
 - (xiv) Written confirmation that an appropriately qualified Occupational Hygiene Consultant has inspected the building/site for asbestos, contamination and other hazardous materials, in accordance with the procedures acceptable to Work Cover Authority.
 - (xv) An Asbestos and Hazardous Materials Clearance Certificate by a person approved by the Work Cover Authority.
 - (xvi) Disconnection of utilities.
 - (xvii) Fire Fighting. (Fire fighting services on site are to be maintained at all times during demolition work. Access to fire services in the street must not be obstructed).
-

- (xviii) Access and egress. (Demolition and excavation activity must not cause damage to or adversely affect the safe access and egress of the subject building or any adjacent buildings).
- (xix) Waterproofing of any exposed surfaces of adjoining buildings.
- (xx) Control of water pollution and leachate and cleaning of vehicles tyres (proposals must be in accordance with the *Protection of the Environmental Operations Act 1997*).
- (xxi) Working hours, in accordance with this development approval.
- (xxii) Any Work Cover Authority requirements.

The approved work method statements and a waste management plan as required by this condition must be implemented in full during the period of construction.

D7 PROTECTION OF STREET TREES DURING CONSTRUCTION

All street trees adjacent to the site not approved for removal must be protected at all times during demolition and construction, in accordance with Council's Tree Preservation Order. Details of the methods of protection must be submitted to and be approved by Council prior to the issue of the relevant Construction Certificate and such approval should be forwarded to the Certifying Authority. All approved protection measures must be maintained for the duration of construction and any tree on the footpath which is damaged or removed during construction must be replaced.

D8 SYDNEY WATER CERTIFICATE

A Section 73 Compliance Certificate under the *Sydney Water Act 1994* must be obtained from Sydney Water Corporation.

Application must be made through an authorised Water Servicing Coordinator. Please refer to the Building Developing and Plumbing section on the web site www.sydneywater.com.au then refer to "Water Servicing Coordinator" under "Developing Your Land" or telephone 13 20 92 for assistance.

Following application a "Notice of Requirements" will advise of water and sewer infrastructure to be built and charges to be paid. Please make early contact with the Coordinator, since building of water/sewer infrastructure can be time consuming and may impact on other services and building, driveway or landscape design.

D9 LOADING AND UNLOADING DURING CONSTRUCTION

The following requirements apply:

- (a) All loading and unloading associated with construction activity should be accommodated on site.
- (b) If, during construction, it is not feasible for loading and unloading to take place on site, a Works Zone on the street may be considered by the relevant road authority.
- (c) A Works Zone may be required if loading and unloading is not possible on site. If a Works Zone is warranted an application must be made to the relevant road authority at least 8 weeks prior to commencement of work on the site. An approval for a Works Zone may be given for a specific period and certain hours of the days to meet the particular need for the site for such facilities at various stages of construction. The approval will be reviewed periodically for any adjustment necessitated by the progress of the construction activities.
- (d) In addition to any approved construction zone, provision must be made for loading and unloading to be accommodated on site once the development has reached ground level.
- (e) The structural design of the building must allow the basement and/or the ground floor to be used as a loading and unloading area for the construction of the remainder of the development.

D10 NO OBSTRUCTION OF PUBLIC WAY

The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances. Non-compliance with this requirement will result in the issue of a notice to stop all work on site.

D11 COVERING OF LOADS

All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter must have their loads fully covered before entering the public roadway.

D12 LONG VEHICLE RESTRICTION

Under the current legislation the use of lengthy vehicles in the CBD is prohibited within certain time frames. All lengthy vehicles must comply with this regulation as stipulated in the NSW Road Rules. A map indicating the prohibited area and definitions of lengthy vehicles are included in the Road Rules.

D13 VEHICLE RESTRICTION

All costs associated with the construction of any new road works including kerb and gutter, road pavement, drainage system and footway shall be borne by the Proponent. The new road works must be designed and constructed in accordance with the Council's "Development Specification for Civil Works Design and Construction".

End of Section

PART E - POST CONSTRUCTION

E1 LOADING WITHIN SITE

All loading and unloading operations associated with servicing the site must be carried out within the confines of the site, at all times (and must not obstruct other properties/units or the public way).

E2 LOADING/PARKING KEPT CLEAR

- (a) At all times the service vehicle docks, car parking spaces and access driveways must be kept clear of goods and must not be used for storage purposes, including garbage storage.
- (b) The operation of the Harbour Control Tower and the Cruise Passenger Terminal shall not be hindered by storage of materials, construction works or by construction traffic.

E3 PERMANENT ELECTRICITY SUBSTATION

If required by the applicable energy supplier, the owner must dedicate to the applicable energy supplier, free of cost, a satisfactory area of land within the development site, but not in any landscaped area or in any area visible from the public domain, to enable an electricity substation to be installed.

End of Section

ADVISORY NOTES

AN1 HAZARDOUS MATERIAL IMMOBILISATION

If any soil needs to be disposed of off site then it will need to comply with the Waste Classification Guidelines. These guidelines may indicate the material will need to be immobilised prior to disposal. If this is the case, the Proponent must apply to DECCW for a site specific immobilisation approval.

AN2 TEMPORARY DEWATERING

Licenses under Part 5 of the *Water Act 1912* may be required for the purpose of temporary dewatering as part of the proposed construction and excavation. Further consultation is to be undertaken with the NSW Office of Water and any required licences are to be obtained prior to commencement of work.

AN3 REQUIREMENTS OF PUBLIC AUTHORITIES FOR CONNECTION TO SERVICES

The Proponent shall comply with the requirements of any public authorities (e.g. Energy Australia, Sydney Water, Telstra Australia, AGL) in regard to the connection to, relocation and/or adjustment of the services affected by the construction of the proposed structure. Any costs in the relocation, adjustment or support of services shall be the responsibility of the Proponent.

AN4 USE OF MOBILE CRANES

The Proponent shall obtain all necessary permits required for the use of mobile cranes on or surrounding the site, prior to the commencement of works. In particular, the following matters shall be complied with:

- (1) For special operations including the delivery of materials, hoisting of plant and equipment and erection and dismantling of on site tower cranes which warrant the on street use of mobile cranes, permits must be obtained from Council:
 - (a) At least 48 hours prior to the works for partial road closures which, in the opinion of Council will create minimal traffic disruptions, and
 - (b) At least 4 weeks prior to the works for full road closures and partial road closures which, in the opinion of Council, will create significant traffic disruptions.
- (2) The use of mobile cranes must comply with the approved hours of construction and shall not be delivered to the site prior to 7.30am without the prior approval of Council.

AN5 STORMWATER DRAINAGE WORKS OR EFFLUENT SYSTEMS

Works that involve water supply, sewerage and stormwater drainage work or management of waste as defined by Section 68 of the *Local Government Act 1993* require separate approval by Council under Section 68 of that Act. Applications for these works must be submitted on Council's standard Section 68 application form accompanied by the required attachments and the prescribed fees.

AN6 TEMPORARY STRUCTURES

An approval under Section 68 of the *Local Government Act 1993* must be obtained from the Council for the erection of the temporary structures. The application must be supported by a report detailing compliance with the provisions of the Building Code of Australia.

Structural certification from an appropriately qualified practicing structural engineer must be submitted to the Council with the application under Section 68 of the *Local Government Act 1993* to certify the structural adequacy of the design of the temporary structures.

AN7 LONG SERVICE LEVY (IF APPLICABLE)

Under Section 34 of the *Building and Construction Industry Long Service Payments Act 1986* any work costing \$25,000 or more is subject to a Long Service Levy. If applicable in this instance, the levy rate is 0.35% of the total cost of the work and shall be paid to either the Long Service Payments Corporation or Council. Under section 109F(1) of the *Environmental Planning & Assessment Act 1979* this payment must be made prior to commencement of building works.

AN8 NON INDIGENOUS ARCHAEOLOGICAL MONITORING AND MANAGEMENT

A program of archaeological investigation is to be undertaken prior to any excavation and an excavation director appointed to manage the program based. If any unidentified historical archaeological features or deposits are exposed during the works, excavation is to cease immediately in the affected areas and the archaeologist is to undertake an evaluation of the extent and significance of such relics. The Heritage Council is to be notified as a matter of courtesy.

Excavation to a depth greater than two (2) metres should be minimised along the Hickson Road boundary of the site south of the Dalgetty Bond Stores to avoid disturbance of archaeological features and deposits that may be present below the fill. To effectively manage the potential impacts of excavation below this level in accordance with the NSW Heritage Act, archaeological monitoring is to be undertaken and an excavation director appointed to manage the program if excavation exceeds this depth. Any resulting archaeological reporting is to inform the interpretation of the site.

A copy of the final report is to be lodged with the City of Sydney Archives.

End of Section

SCHEDULE 3

STATEMENT OF COMMITMENTS HEADLAND PARK MAIN WORKS, BARANGAROO

MP No. 10_0048

Proponent's Statement of Commitments

SUBJECT	COMMITMENTS	TIMING
Contamination	1. Remediation works the subject of the Remediation Action Plan will not commence until the RAP and HHERA are approved by the Site Auditor and a Site Audit Statement has been issued in respect of the RAP.	Issue of Site Audit Statement
	2. A Part B Site Audit Statement will be provided to the Department of Planning prior to the commencement of remediation works	Prior to the commencement of remediation works
	3. A Remediation Environmental Management Plan (REMP) will be prepared to document the monitoring and management measures required to control the environmental impacts of the works and ensure the validation protocols are being addressed;	Prior to mobilisation onto the site for remediation works
	4. A Remediation Occupational Health and Safety Management Plan (ROHSMP) will be prepared to document the procedures to be followed to manage the risks posed to the health of the remediation workforce	Prior to mobilisation onto the site for remediation works
	5. The Remediation Work Plan (RWP) will be submitted to the Site Auditor for information	Prior to commencement of remediation works
	6. The REMP and the ROHSMP will contain a plan addressing plausible contingencies and both Plans are required to be certified by an independent, expert person and submitted for acceptance by the BDA prior to mobilisation onto the Headland Park Site.	Prior to mobilisation onto the site for remediation works
	7. Upon completion of the works on the Headland Park Site, a validation report and an ongoing Long Term Environmental Management Plan (LTEMP) for impacted materials retained beneath Headland Park will be submitted by the Remediation Consultant to the Site Auditor for certification that the Headland Park Site is suitable for the proposed uses, subject to implementation of the LTEMP.	Prior to occupation of the site by future users
Acid Sulphate Soils	8. Any activities involving the disturbance of acid sulfate soils will be undertaken in accordance with the requirements of the Acid Sulfate Soils Management Plan – Main Works Application (JBS Environmental Pty Ltd, October 2010)	During excavation works
Hydrology, Soil and Water Management	9. The proposed development will be undertaken in accordance with the mitigation and monitoring requirements for surface and groundwater hydrology and quality, including water quality of the Harbour outlined in the Soil and Water report (WSP Environment and Energy, October 2010).	During construction works and during the operational phase
	10. All water management information will be consolidated into	Prior to commencement of construction works

SUBJECT	COMMITMENTS	TIMING
	one Soil and Water Management Plan which will be updated in accordance with the staging of works.	
Navigation	11. Any new navigational aids will be determined in consultation with Sydney Ports Corporation, NSW Maritime and Sydney Ferries	Prior to the installation of new navigational aids
Noise and Vibration	12. Noise and vibration on site will be managed in accordance with the <i>Preliminary Noise and Vibration Management Plan</i> prepared by Acoustic Logic Consultancy dated 19 October 2010	During proposed works
	13. The Preliminary Noise and Vibration Management Plan will be finalised in accordance with the recommendations of the Main Works Noise and Vibration Assessment once the Site Contractor is engaged	Following appointment of Site Contractor
Traffic, Parking and Access	14. Prior to the commencement of works on site a detailed CTMP will be prepared which is generally consistent with the <i>Traffic Impact Assessment and Construction Traffic Management Plan</i> prepared by Halcrow Pty Ltd (October 2010)	Prior to commencement of works on site
	15. Prior to the commencement of works on site a Traffic Control Plan (or series of plans) in accordance with RTA requirements, would be prepared for the proposed work round, past or through work sites	Prior to commencement of works on site
	16. The detailed CTMP will address traffic issues relating to Moores Wharf, the CPT and the Harbour Control Tower in consultation with Sydney Ports Corporation.	Prior to commencement of works on site
Air Quality, Health and Odour	17. Air control emissions (mitigation measures) and Air Monitoring Program as recommended in the Air Quality and Health Assessment – Main Works will be incorporated into the detailed Environmental Construction Management Plan for the proposed works and implemented during all works on site.	Prior to commencement and during-works on site
	18. Continuous air quality monitoring is to be undertaken for predicted exceedances of PM10 (24 hours) and odour at the Harbour Control Tower, CPT and Moores Wharf. Exceedances will be responded to by implementing the control measures outlined in the draft AQMP. Where these fail to lower the concentration of PM10, works will cease pending more favourable meteorological conditions.	Continuously during the relevant works.
	19. The AQMP will be updated following endorsement of the Headland Park HHERA and RAP by the Site Auditor	Upon finalisation of the HHERA and RAP
	20. Following approval by the Site Auditor, copies of the final Headland Park RAP and HHERA will be provided to Sydney Ports Corporation for information	Upon finalisation
Heritage	21. A detailed interpretation strategy is to be prepared for the Sewage Pumping Station and Sandstone Seawall as part of the overall site interpretation. In regard to the seawall this	Within 6 months of completion of construction works

SUBJECT	COMMITMENTS	TIMING
	Plan will address the heritage values of the sandstone blocks to be relocated and demonstrate how, when and why these sandstone blocks were originally laid.	
	22. The proposed retaining wall on the western side of the Moore's Wharf building will be designed to protect and enhance the significance of this building. Consideration will be given to designing the retaining wall as a gentle curve offset from the building.	Prior to construction of the retaining wall on the western side of the Moore's Wharf Building
	23. A structural audit of all heritage items in proximity to the works will be completed	Prior to the commencement of construction works
	24. A draft interpretation plan for the Headland Park and Northern Cove will be prepared prior to the commencement of the main works. To ensure that any archaeological and other issues that emerge during the course of construction works are integrated into the interpretation plan, the interpretation will be finalised only once construction works are well advanced.	Draft interpretation plan will be prepared prior to the commencement of the main works. Final interpretation plan will be completed no later than 6 months prior to construction completion.
Archaeology	25. An archaeological excavation will be undertaken in accordance with the methodology and recommendations (relating to testing methodology, site interpretation, research questions) contained in the <i>Research Design and Archaeological Excavation Methodology</i> (Austral Archaeology, October 2010).	Prior to the excavation of the Northern Cove and Moore's Wharf inlet.
Accessibility	26. The proposed development will be undertaken in accordance with the recommendations of the Access Review Report prepared by Morris-Goding Accessibility Consulting (October 2010)	During construction.
Environmental Management	27. The proposed development will be undertaken in accordance with the Preliminary Environmental and Construction Management Plan prepared by the Barangaroo Delivery Authority (October 2010) or the subsequent more detailed plan to be prepared by the construction contractor once appointed.	During construction
Waste Management	28. The proposed development will be undertaken in accordance with the Waste Management Plan prepared by JBS Environmental (October 2010).	During the construction and operational phases of the development
ESD	29. The proposed development will be undertaken in accordance with the recommendations of the ESD report prepared by prepared by WSP Lincolne Scott Pty Ltd (October 2010).	During the construction and operational phases of the development
Plan of Management	30. A plan of management will be prepared to guide the ongoing operations and management of the Headland Park. The plan of management will be prepared in consultation with the City of Sydney.	Prior to opening of the park to the public.
Public Domain	31. Public Domain Guidelines for the Headland Park will be prepared in consultation with key stakeholders, including the City of Sydney	During preparation of Guidelines

