APPENDIX 5

Heritage Impact Statement

Conybeare Morrison

Barangaroo Headland Park
Main Works Application
Heritage Impact Statement

October 2010

Conybeare Morrison International
52 - 58 William Street
East Sydney, NSW 2011
T. 8244 8888 F. 8244 8877
E. mail@cmplus.com.au
10075

Conybeare Morrison

Barangaroo Headland Park
Main Works Application
Heritage Impact Statement

Prepared for Barangaroo Delivery Authority

October 2010

Conybeare Morrison International
52 - 58 William Street
East Sydney, NSW 2011
T. 8244 8888 F. 8244 8877
E. mail@cmplus.com.au
10075

Revision	Date	Description	By	Chk	App
01	30/07/10	Draft Report	VO	BV	JR
02	24/08/10	2nd Draft Report	VO/BV	JR	VO
03	06/10/10	Final Report	BV	VO	VO

CONTENTS

1.0 Introduction

1.1 Background

This Heritage Impact Statement was commissioned by the Barangaroo Delivery Authority (Barangaroo DA) to accompany the Barangaroo Headland Park Main Works application to the NSW Department of Planning. The Main Works application follows on the Early Works application which was submitted to the Department of Planning in July 2010.

This report is in accordance with the Statement of Commitments (SoC) within the Instrument of Approval (Mod 3) for the Barangaroo Concept Plan and the Director General's Requirements (DGRs) MP10_0047 & MP10_0048 issued 6 May 2010, to provide an assessment of the likely heritage impacts of the proposal on the affected heritage items and mitigation measures. The *Heritage* provisions of the Statement of Commitments and the Director General's Requirements are appended (see Appendices A and B).

The heritage items likely to be affected by the proposed Main Works and assessed in this report are:

1. The Sewage Pumping Station proposed new location (issue 13 DGRs);
2. Sandstone Seawall at north-west of site (as required by SoC 57);
3. Sydney Ports Harbour Control Tower (as required by SoC 59);
4. Sandstone Wall adjoining Grafton Bond Store (as required by SoCs 52 and 53);
5. Munn Street Terraces (as required by SoC 55) ;
6. Dalgety's Bond Store (refer to SoC 49).
7. Moore's Wharf Building (refer to SoC 56)

Other items in the immediate vicinity which have not been specifically listed on the Statement of Commitments, however, have been commented on in this report included the following:
- Munn Street Reserve,
- High Street Terraces.

1.2 Author Identification, Acknowledgements and Limitations

This report was prepared by Verena Ong, Brad Vale and Garry McDonald, Heritage Architects/Specialists, and reviewed by Judith Rintoul, Heritage Associate, from Conybeare Morrison & Associates. Verena and Brad visited the site on 27th July 2010. The visit was limited to visual observation and to the exteriors of the heritage items only.

Reference is made to the following documents:

- *Transforming Barangaroo* by the Barangaroo Development Authority.
- *Barangaroo Headland Park — Scoping Report* by Johnson Pilton Walker Landscape architecture.
- *Instrument of Approval – Barangaroo Concept Plan Major Project 06_0162 MOD 3 Schedule 3 Proponent's Statement of Commitments,* by Minister for Planning, 11 November 2009.
- *Statement of Heritage Impact Addendum – Barangaroo Concept Plan – Modification to Headland Park and Northern Cove Sydney*, prepared by Conybeare Morrison International for the Barangaroo Delivery Authority, August 2009.

- *Barangaroo Sewage Pumping Station SPS14 Conservation Options Heritage Impact Statement*, prepared by Conybeare Morrison & Associates for the Barangaroo Delivery Authority for Early Works application, June 2010.
- *Barangaroo Public Domain Background Briefing Paper prepared* by Context Landscape Design for the Sydney Harbour Foreshore Authority, May 2009.
- *Briefing Notes* by Craig Burton of CAB Consulting.

'Interpretation' in this report is used in the broadest sense of the word to include the utilisation of existing built, landscape, historical (Aboriginal) and spatial elements to inform the observer of the cultural background and significance of the place. A detailed Interpretation Plan and Strategy is not part of the scope of this report.

The report generally addresses the proposed Headland Park and Northern Cove site only and does not address the Barangaroo Central Public Domain or the Barangaroo South development area.

2.0 The Site

2.1 Historical Outline

The following historical background of the site is adopted from the report *Statement of Heritage Impact Addendum – Barangaroo Concept Plan – Modification to Headland Park and Northern Cove Sydney*, prepared by Conybeare Morrison for the Barangaroo Delivery Authority, August 2009. It addressed the topographical and landscape modifications over time, and is relevant to an understanding of the importance of the site.

Formation of the Barangaroo Site

Barangaoo is part of the Sydney Basin a rocky outcrop of quartz-rich sandstone that is prominent in Sydney Harbour. A north-south ridge formed a small peninsula with a raised knoll jutting out towards the north-west. It sloped steeply to the west, draining into a wide cove, and was joined to more undulating land to the south.

The sandstone was formed from the laying down of sand sediments under marine and marshy conditions that hardened under pressure and has slowly eroded through several phases of earth movements. Sydney Harbour was carved by an east-flowing river. The horizontal layering of the sandstone caused it to weather and break away leaving a series of terraces as the action of the river carved deeper through the rock. A sea level rise of approximately 60m in the last 20,000 years as the Ice Age receded flooded the river valley, so valleys carved by the river became bays and isolated hills became islands in Sydney Harbour.

The breaking down of sandstone produced sandy loam soils that drain quickly. The original vegetation was sclerophyll forest – in this case a hardwood forest with an incomplete forest canopy. Regular burning by Aboriginal people encouraged fire-resistant trees and sparse undergrowth. The site was occupied for millennia by the Darug language group of people. The site was a boundary between Wangal and Gadigal clans.

Aboriginal Occupation: Pre and Post-European Contacts

The State Heritage Inventory "Millers Point and Dawes Point Village Precinct" summarises the aboriginal occupation as follows:[1]

> *Prior to European settlement the Millers Point area was part of the wider Cadigal territory, in which the clan fished, hunted and gathered shellfish from the nearby mudflats. Shellfish residue was deposited in middens, in the area known to the early Europeans as Cockle Bay; the middens were later utilised by the Europeans in lime kilns for building purposes. The Millers Point area was known to the Cadigal as Coodye, and Dawes Point as Tar-ra/Tarra.*
>
> *In the years following European colonisation of the eastern coast of Australia, the Cadigal population, as among the wider indigenous community, was devastated by the introduction of diseases such as smallpox. Remnants of the original Port Jackson clans eventually banded together for survival purposes, but the population continued to decline, exacerbated by alienation from their land and food sources, and by acts of aggression and retaliation, caused partly through cultural misunderstanding and partly through eighteenth-century European mindsets and perceptions about the colonisation process.*

[1] State Heritage Register item number: 01682.

Colonial Period: 1788 -1854

The first Europeans to settle in Australia found Farm Cove to be the most suitable site initially known to them to act as a port, potential farm and living space. The varied topography was useful. The drowned valleys were useful harbours with jetties and wharves; a creek provided fresh water. The prominent hills were soon occupied by the establishment. The military used them for defence works, signalling; entrepreneurs built windmills. The rocky terraces and cliffs were used as quarries

The layout of the early colony was influenced by the military preference for a standard grid, but varied by the topography and willfulness of inhabitants during periods of weaker government. Pathways often followed the ridges and contours for ease of movement. Governor Macquarie insisted on greater formality and initiated infrastructure projects. Many of the streets were named with links to the local regiments and British politics. The northern spur from the Rocks ridge was initially named Cockle Point; it partly defined the adjacent Cockle Bay that was renamed Darling Harbour during a later governorship. The southern spur was named Soldiers Point; it was near the military barracks and a place where soldiers would bathe. Cockle Point was renamed Millers Point in 1814, recognizing John Leighton who was popularly known as 'Jack the Miller'. (See Figures 2.3 & 2.5)

Cockle Bay developed into the early colony's main trading port. Warehouses and industry related to processing traded goods clustered around the bay in response. The natural ecosystems were transformed into a dirty crowded port with relatively poor living standards for people living there.

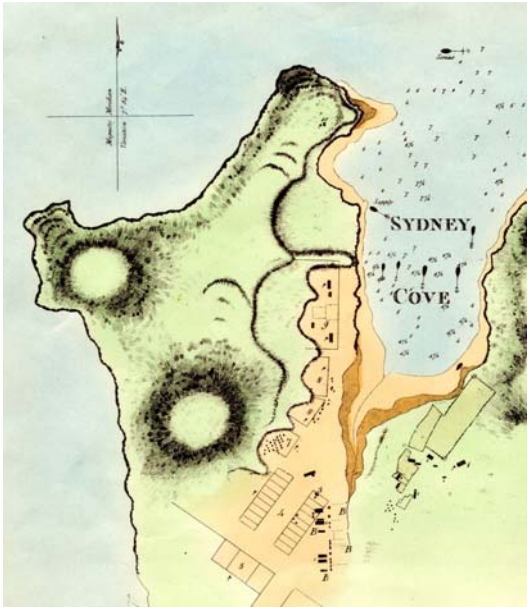

Fig. 2.1: 1788 plan with Millers Point on the left

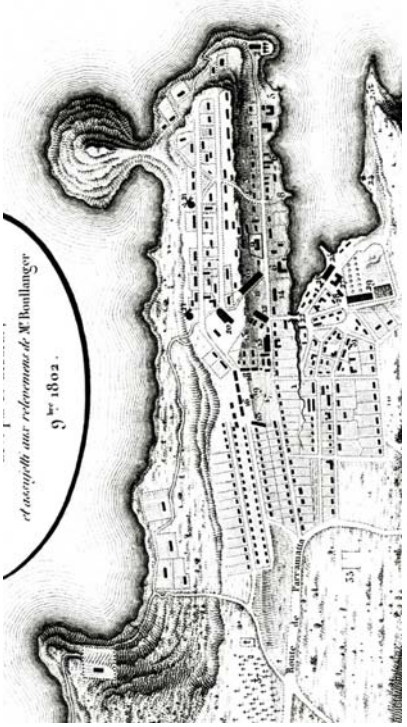

Fig. 2.2: 1802 plan with a stylised outline of Millers Point but indicating the nature of the steep topography

Fig. 2.3: 1818 plan showing the flour mill of John Leighton, Soldiers Point to the south of Cockle Bay Point (Millers Point), and notation with "stone quarry"

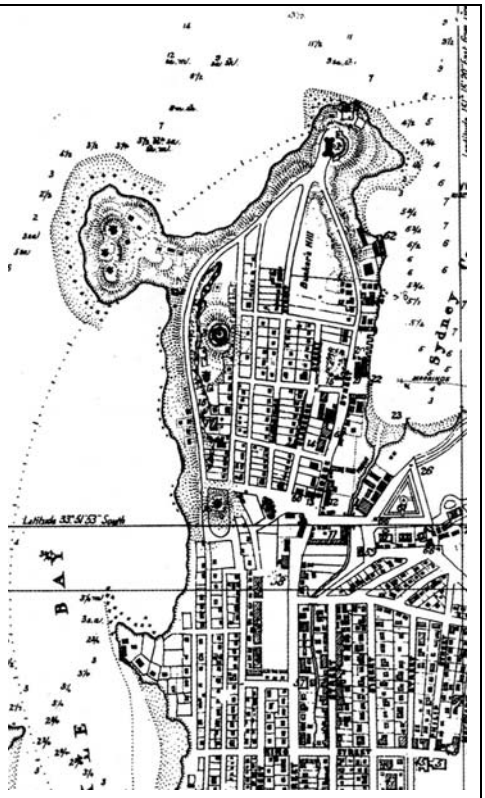

Fig. 2.4: 1822 plan indicating a shoal of rocks around Millers Point

Fig. 2.5: c1818 image of Dawes Point looking from the north with Millers Point towards the right and a jetty on the point. Fort Phillip (Observatory Hill) with a flagstaff is in the background

Fig. 2.6: c1821 image of the Inner Harbour looking west from Flagstaff Hill (Observatory Hill). Millers Point is the peninsular with John Leighton's windmills. Note the depiction of the relatively steep cliffs and knolls on the southern side of Millers Point.

Fig. 2.7: Millers Point in 1845 (on the left) looking towards the east. Note the amount of housing that has appeared since the 1830s plans

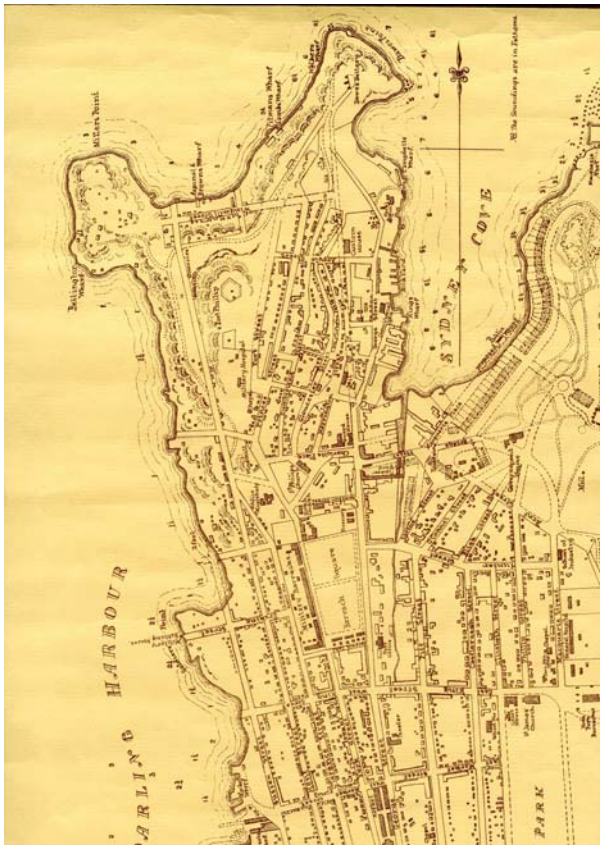

Fig. 2.8: 1836 map of Sydney. At this stage there appears to be no alteration of the foreshore line compared to the 1854 map (Fig. 2.9)

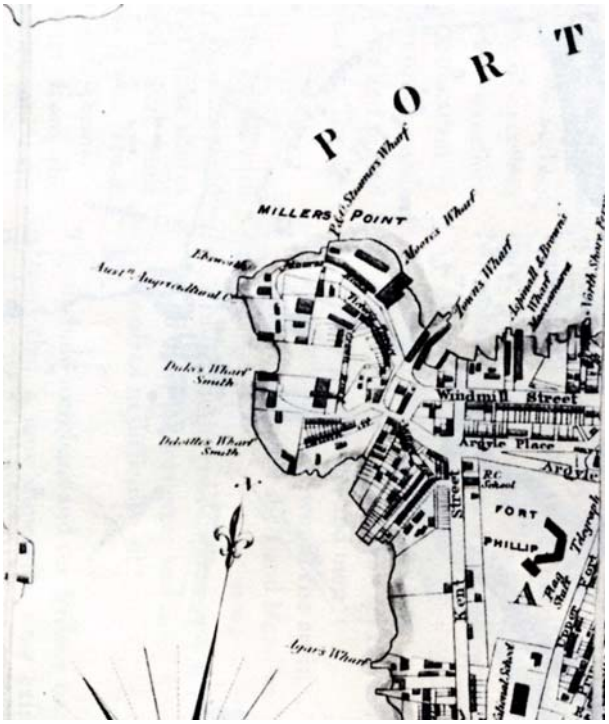

Fig. 2.9: Part 1854 map of Sydney shows the development of a street pattern in Millers Point. Note the beginnings of land transformation to accommodate the wharves.

Victorian Period: 1855 - 1900

As the mining and agriculture industries grew in size and importance during the Victorian period, Darling Harbour and Walsh Bay developed more intensive port facilities. This area became the industrialized nexus in the preparation and export of bulk primary produce, and a significant port for imports. Larger and faster trading ships carrying bulk goods for many traders led to a growing profusion of timber jetties and masonry warehouses around Millers Point, with many small houses occupying the ridges so the port workers often had a short walk to work. The large houses built by successful traders earlier in the period became less fashionable towards the end of this period as wealthy people sought the suburbs designed to be free of the pollution and disease associated with Millers Point. A centrally located gas works here intensified the industrial quality of Millers Point.

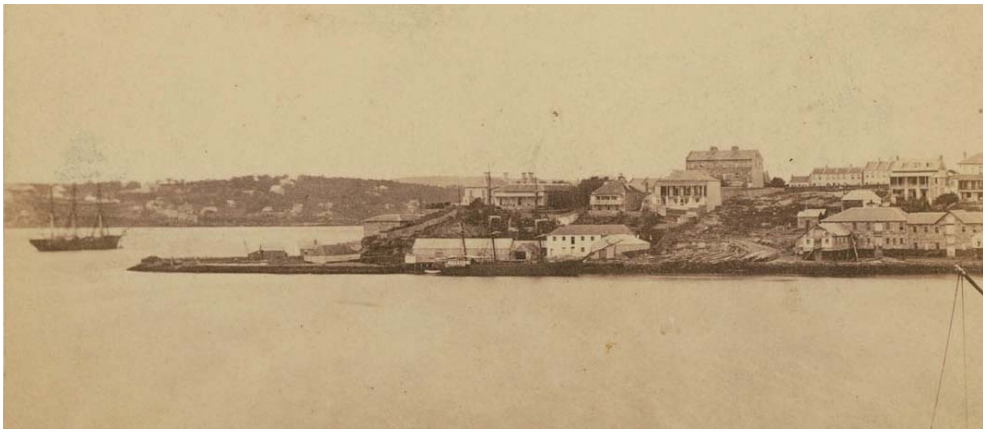

Fig. 2.10: 1869 image of Millers Point looking towards the east. Note the stores near the shoreline, including Moore's Wharf store building in partial view on the left.

Fig. 2.11: c1870 image of Millers Point looking towards the west from Observatory Hill with the Lord Nelson Hotel on the right at the intersection of Kent Street and Argyle Street. Merriman Street can be seen on the ridge and the beginnings of the Munn Street ramp can be seen falling down on the left

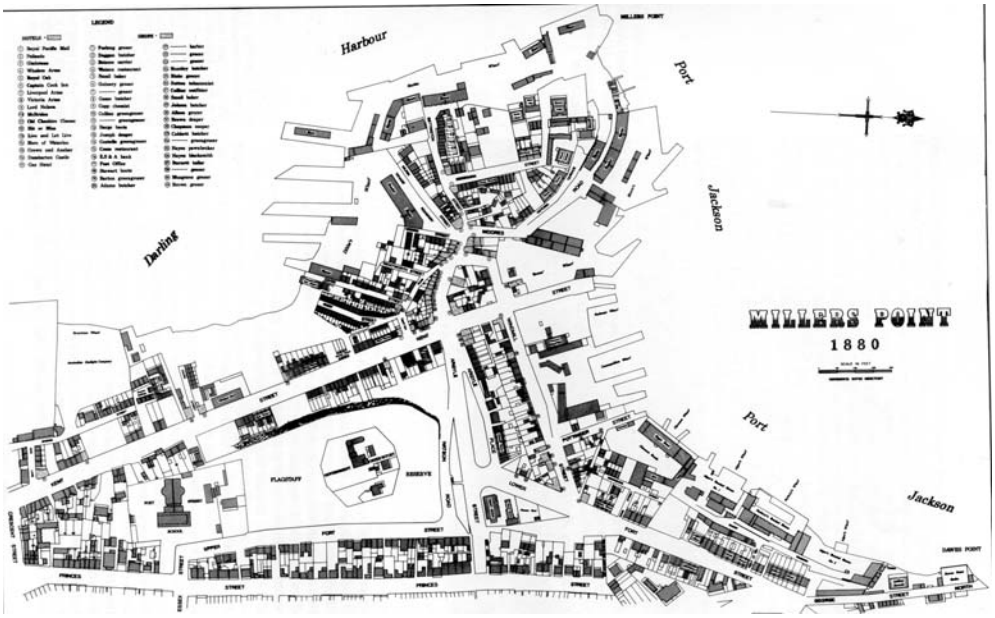

Fig. 2.12: 1880 map of Millers Point indicating the extent of land infill and the development of finger wharves. (Courtesy: Fitzgerald & Keating)

Sydney Harbour Trust: 1900 – 1960

The turn of the century saw a significant restructuring of the Millers Point waterfront and administration with the establishment of the Sydney Harbour Trust in 1900. The *Resumption Act*, partly in response to an outbreak of Bubonic plague in January of 1900, allowed the government to take over the planning of the area, building wharves with integrated buildings, roads and bridges. The rotting jetties and other small private infrastructure was mostly demolished. A consistent development of finger wharves developed 1900–1910 to increase the efficiency of trade with large steamships and minimise the potential for disease carried by vermin.

To achieve this renewed port, massive excavation and filling of the sloping land was undertaken to achieve roads on the contours servicing wharves and warehouses, frequently at more than one level. Further efficiency was gained by 1910 with the construction of steel bridges between Millers Point and the Rocks over Hickson Road, but the distinction of an isolated knoll on Millers Point was lost.

Hickson Road came to be known as the 'Hungry Mile' during the 1930s Depression when decreased trade provided fewer jobs for the multitude of wharf works who would walk along this stretch seeking short-term work. Millers Point became more separate from the city by the time the Sydney Harbour Bridge was completed in 1932 during the Depression. The southern approach to the bridge made a bold visual barrier and contrasting sense of scale.

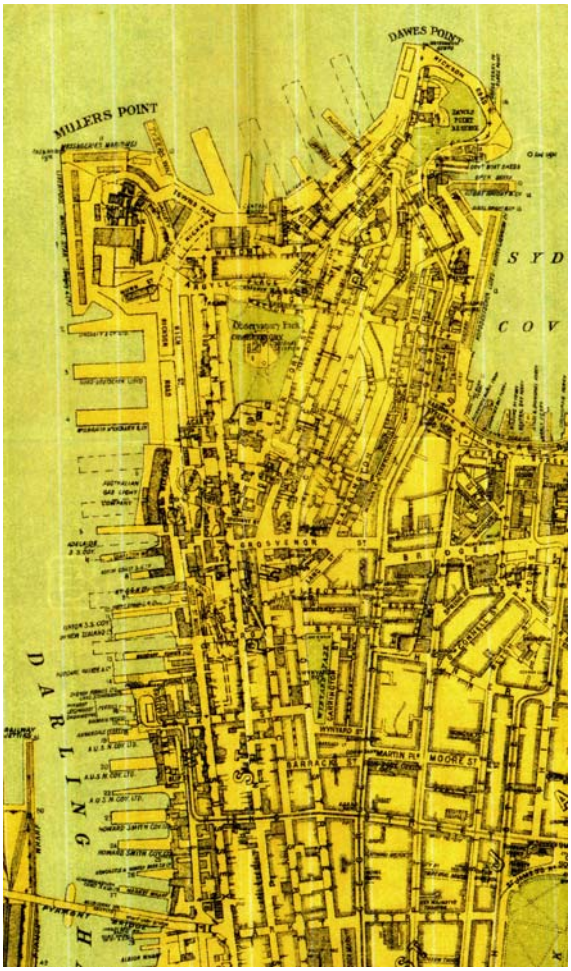

Fig. 2.13: c1913 map shows the extent of finger wharf development and the rectangular infill of Millers Point.

Fig. 2.14: c1904 image of Millers Point looking towards the south west.

Fig. 2.15: c1940 image of Millers Point looking towards the north east indicating the transformation of the central area of Millers Point with large warehouses. Note the Munn Street loop road and the Dalgety Road that encircle the Point

Reclamation Period: 1961 – 1988

Postwar technological change brought the opportunity to increase the efficiency of the docks by replacing finger wharves with large open docks suitable for shipping containers and roll-on roll-off transfer of cargoes. Approximately half of sandstone knoll of Millers Point was removed to make the large flat dock of East Darling Harbour. Warehouses, many terrace houses and several streets were removed in this process. This process of clearing included the relocation of Moore's Wharf Building from the former foot of Millers Point northern cliff to a site further east facing Walsh Bay. Soldiers Point was subsumed into the expanded dock; only one inlet remained. The remains of Clyne Street were landscaped into the Clyne Reserve in 1953; similarly, Munn Street became the Munn Reserve. Both of these reserves were planted out according to the 'Australian native street planting scheme' by the City of Sydney 1981, giving them a more naturalistic appearance. The increased efficiency of containerisation reduced the demand for waterside workers, and many of them left Millers Point. By 1982 there was deemed to be little need for the former Maritime Services Board to retain a portfolio of housing, and so all of its non-maritime buildings were handed over to the Department of Housing.

Fig. 2.16: 1971 image of Millers Point indicating the reclamation of the site for containerization, the construction of the Harbour Control Tower and the further cutting away of sandstone for the creation of flat dock area

Period of New Uses: 1989 to the Present

The shift to containerisation of the dock was completed in this period when the one remaining inlet along East Darling Harbour was filled in. A decision was made to preserve the sandstone seawalls. The Overseas Passenger Terminal (Wharf 8) was established at the southern end of dock. Infrastructure expanded at other ports in Botany Bay and Port Kembla in this period, and the limits of the Millers Point docks for operations and expansion became clear. Sydney Harbour was moving away from being a working harbour. Walsh Bay had been de-commissioned as a port shortly before this period and was being conserved and rebuilt as a cultural and residential precinct. In recent years, the large portal frame storage sheds were removed in preparation for redevelopment and large outdoor events such as World Youth Day.

2.2 Physical Evidence

The Barangaroo Headland Park site is located at the north-western edge of the Sydney CBD, fronting the Inner Harbour, with the Walsh Bay wharves to the north east and the proposed Barangaroo Central Public Domain and commercial site to the south.

Fig. 2.17: Location of Millers Point. The future Barangaroo Headland Park would be located over the tarmac on the left-hand side. (Source: Nearmap).

The original topography and configuration of the Sydney Harbour region was formed as a result of drowned river valleys.[2] Following European settlement of Sydney Cove in 1788, this part of the Inner Harbour coastline including the knoll at Millers Point underwent successive changes and alterations, with cuttings into the knoll and reclamation of the waterfront for maritime and ports development as well as associated infrastructure and facilities. The last reclamation was decked over c1989 to create a continuous surface and the straight line of the western wharf edge at Barangaroo laid over the original foreshore. Very little of the area's original natural environment remains intact.[3]

The Barangaroo port facilities have been progressively de-commissioned since 2008. In 2009, planning approval was given for a concept plan modification to create a new Headland Park at the northern end of the Barangaroo site. The proposed Park is to extend north to south along a sandstone cutting, generally along Merriman Street, and extend down to a new naturalistic shoreline based on its original footprint and profile before European settlement. (Fig. 2.18)

[2] Barangaroo Briefing Paper, Context Landscape Design.

[3] For more detail historical outline of the Barangaroo site, refer to "Heritage Impact Statement Addendum , Barangaroo Concept Plan – Modifications to Headland Parks and Northern Cove Sydney", prepared by Conybeare Morrison & Associates, Aug 2009.

Fig.2.18: Proposed plan of Barangaroo Headland Park. (Source: Barangaroo Delivery Authority)

Currently, the Barangaroo site is cleared of most of its former warehouse structures leaving a generally vacant concrete platform, with the exception of the Passenger Terminal Wharf at the southern end. On the designated Headland Park site, the remaining structures which are still in use or are heritage items include:

- the MWS&DB Sewage Pumping Station (SPS 0014)
- the relocated Moore's Wharf (Port Safety Facility) at the north-east corner of the site;
- the sandstone seawall at the north-west corner of the wharf platform;
- the Port Operations and Communication Centre (or Harbour Control Tower);
- Munn Reserve;
- Dalgety's Bond Store.

Other contiguous boundary conditions or structures consist of (from the north):

- On-grade entry from Towns Place;
- Clyne Reserve connecting to Merriman Street;
- Merriman Street, lined with 2 storey terrace houses. Merriman Street is approximately 18 metres above the existing concrete platform of the site;
- Munn Street Terraces (also facing Bettington Street);
- Palisade Hotel;
- Argyle Place intersection with Dalgety Road;
- Hungry Mile (previously Hickson Road) with a backdrop of sandstone cutting surmounted with High Street, and a row of mature trees along the west side of the street.

Fig. 2.19: Site plan listing items of heritage significance. (Courtesy: Context Landscape Design[4])

More than two centuries of development at Millers Point has removed all remnant vegetation from the site. The plantings of eucalypts and casuarinas trees in Clyne Reserve and Munn Street Reserve demonstrate efforts to reconstruct the forest type on small sites. A row of substantial Hills Weeping Fig *(Ficus microcarpa hillii)* has given an avenue effect to Hickson Road.

4 Context: Barangaroo Briefing Paper, p.47

3.0 The Affected Heritage Items

3.1 Sewage Pumping Station (SPS0014)

The Sewage Pumping Station SP0014 is a low level sewage pumping station located within the former container terminal constructed c.1900 by the Department of Public Works. The utility has a concrete substructure housing machinery and sewage chambers, set under a brick, stone and terracotta tiled building. The Sewage Pumping Station has a domestic scale and was designed in the Federation Queen Anne style. The building has a gambrel roof originally covered in slates, now covered in terracotta tiles. Typical construction detailing of the period includes timber louvred gable vents and exposed eaves with timber sarking boards; fixed sash timber windows, red-brown tuck-pointed brickwork laid in English bond with a splayed brick plinth and engaged brick piers capped with sandstone; and rock faced sandstone sills and lintels. Internally, the ceiling is lined with tongue and grooved boarding and walls are rendered and lined to simulate ashlar coursing. The substructure is divided into a machinery well comprising two vertical spindle centrifugal pumps, each directly coupled to electric motors. Two sewage wells and an inlet well are located nearby. Alterations include the replacement of double timber doors with a metal roller shutter and simplification works to the sash windows, replacement of roofing slates with tiles, and replacement of the original timber sash windows. The original plunger pumps plus DC current were replaced before 1915. Most of the mechanical and electrical components were upgraded during the 1970's.

SP0014 was one of an original group of twenty low level sewage pumping stations constructed at the end of the 19th century to serve Sydney. The Bondi Ocean Outfall Sewer (ten years earlier) was a major advance in the protection of the public health of Sydney by stopping the discharge of sewage into the Harbour. The system was built in response to the outbreaks of Enteric Fever (Typhoid) which plagued Sydney from the 1870s to 1890s. SPS0014 is currently still in use. There are two catchments draining to SPS0014: the Walsh Bay catchment which is the lower level catchment, and the High Street catchment within Millers Point.

Fig. 3.1: SPS0014 front elevation.

Fig. 3.2: SPS0014 view from south-east.

3.2 Sandstone Sea Wall

A 120m long retaining wall of sandstone blocks protects the north-western edge of the East Darling Harbour roll-on, roll-off dock. It was built in 1913 from locally quarried stone at a time when the Sydney Harbour Trust was working to design and install a uniform system of wharves to accommodate the larger cargo ships trading with Sydney than had been the case in the nineteenth century. Moore's Wharf at the north end of Millers Point was incorporated into the major new wharf 1A and 1B which was created for Dalgety and finished in 1913. Prior to 1913, the outline of the Point was a natural headland. The construction of the new sandstone seawall squared off the western edge of Millers Point. The final reshaping of the shoreline south of the sandstone wall and across the north face of Millers Point occurred in the 1960s.

Prior to 1900 the wharf area consisted of privately-owned timber wharves. Most had been built in the 1830's and 40's and were derelict by 1900. Remnants of these wharves and their trading functions may remain evident in the fill behind the 1913 sandstone wall.

Fig 3.3: View of sandstone seawall at north-west corner of site.

Fig. 3.4: Sandstone seawall with existing site stormwater pipes penetrating through.

3.3 Dalgety's Bond Stores

The former Dalgety's Bond Stores are the remaining two of three warehouse components, known as Dalgety's Bond Stores, Blocks A and C. Block A is a sandstone structure of irregular plan with a gable roof. Block C is a brick building almost rectangular in plan with a sawtooth south-light roof concealed behind a parapet. The two buildings adjoin. To the north, facing Munn Street Reserve at the Argyle Street Bridge, Blocks A and C are 2 and 1 storeys in height respectively. To the south and west, however, the steep fall of the site allows for three more storeys below which address the Hungry Mile (Hickson Road). The refurbished interiors retain original structural fabric including heavy posts, beams and roof trusses to Block A, and the remarkable trussed girders and roof trusses in Block C.

The Bond Stores illustrate two distinct phases in warehouse construction – Bond Store A incorporates a timber structure, and Bond Store B uses steel. The original detailing, both internally and externally, is largely intact. The Bond Stores contain a significant hydraulic pump and lift structure. The Bale Lifts and Overhead Crane were fabricated by Babcock & Wilcox.

Fig. 3.5: Dalgety's Bond Store viewed from proposed Headland Park site.

Fig. 3.6: Dalgety's Bond Store from Munn Street Reserve.

3.4 Munn Street Terraces

The Munn Street Terraces are a row of terraced dwellings with upper and ground level apartments that use the same Federation Arts and Crafts style as the adjacent Palisade Hotel. They are constructed of load-bearing face brickwork with sandstone trim to doors and windows (four pane), and timber-framed verandahs. Each dwelling has two bedrooms. The terraces were built in c1911 and demonstrate the development of housing for workers by the Sydney Harbour Trust following redevelopment after 1900. The row consists of four pairs of dwellings with the remains of another pair on the western edge providing evidence of the demolition of other terraces for the development of port facilities in the 1960s–70s.

Fig. 3.7: View of 18-20 Munn Street Terraces from south-west.

Fig. 3.8: Western wall of Munn Street Terraces with evidence of adjoining building since demolished.

3.5 Grafton Bond Stores and Sandstone Wall

The Grafton Bond Stores form a large load-bearing brick building straddling the cliffline above Hickson Road. It is four and five storeys facing Hickson Road, and three storeys facing Jenkins Street above the rock shelf. The Hickson Road façade has three bays with plain parapeted gables, one with eaves and two with stepped parapets, one of which curves around the Napoleon Street corner. The lowest storey is of sandstone. The east side has three stepped gable parapets in the Anglo-Dutch style, with catheads at the top. The heavy hardwood posts and girders, with joists, herringboning and timber flooring are visible within. It has been adapted with the addition of two masonry service sections to the east linked by a partly glazed access gallery. The walls are laid in English bond, of cream bricks with banding laid in red-orange bricks. The Grafton Bond Stores bear the date 1881 and were designed by William Wardell. They are a remnant of what was claimed to be the biggest Bond Store complex in Australia.

The sandstone wall adjacent to the Grafton Bond Stores is a substantial cutting of the natural sandstone, on which a cut stone wall has been constructed, increasing its scale and providing level access to properties at Kent Street. The sandstone wall once defined the natural harbour foreshore, but now forms an eastern boundary to the Hungry Mile (Hickson Road). On top of the cutting is a park reserve.

Fig. 3.9: Grafton Bond Stores.

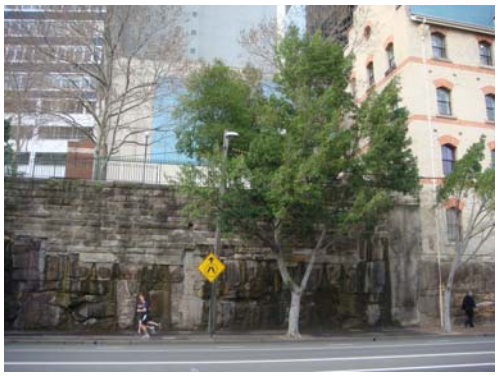

Fig. 3.10: Sandstone wall adjacent to Grafton Bond Stores.

3.6 Harbour Control Tower

The Harbour Control Tower is a reinforced concrete column with an internal lift and stair, topped by a stainless steel and glass observation deck and an operations area which is 87 metres above sea level overlooking Walsh Bay and Darling Harbour. The reinforced concrete base of the tower contains plant, pump rooms and emergency equipment storage. Foundations are embedded into rock with rock anchors penetrating 7.9 metres.

The new Tower had the advantage of providing surveillance of major wharfage areas and the entire port for the first time. All ships need to obtain radio clearance from the Harbour Control Tower before entering the port or leaving their berth, and also during their passage through the Harbour.

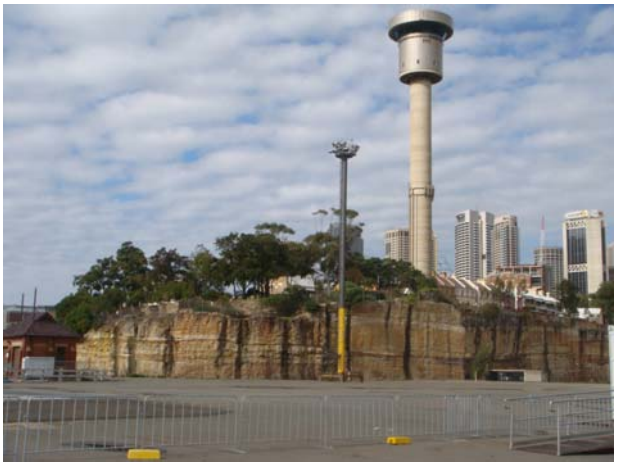

Fig. 3.11: The Harbour Control Tower, viewed from the north-west corner of site.

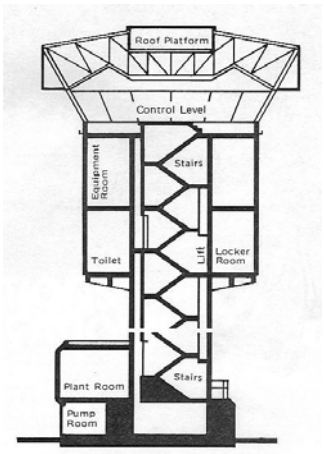

Fig. 3.12: Cross-sectional drawing of Tower.

3.7 Moore's Wharf Building

Moore's Wharf Building is a group of three-storey sandstone waterfront warehouses built by Captain Robert Towns in stages in the 1830's. They have hipped roofs clad in timber shingles with gables in each building holding a cathead for a crane. It was originally built on the northern extremity of Millers Point at a site known as Jones Wharf. It was relocated in 1978–81 to the western end of Walsh Bay overlooking the new wharf area. At that time it was fitted out for Customs and Delivery Officers and as amenities for port workers. The fourth segment of the building built in the 1840's by Captain Joseph Moore and his son Henry was not reconstructed because the stonework had deteriorated beyond repair.

Fig. 3:13: Moores Wharf Building viewed from south.

Fig. 3.14: Moores Wharf Building viewed from west.

4.0 Statement of Significance

4.1 Statement of Significance

The State Heritage Register listing sheet provides a Statement of Significance for the adjacent *Millers Point and Dawes Point Village Precinct,* which gives an overview of the historical development of the area and places the subject site in context: [5]

Millers Point & Dawes Point Village Precinct is of State Significance for its ability to demonstrate, in its physical forms, historical layering, documentary and archaeological records and social composition, the development of colonial and post-colonial settlement in Sydney and New South Wales.

The natural rocky terrain, despite much alteration, remains the dominant physical element in this significant urban cultural landscape in which land and water, nature and culture are intimately connected historically, socially, visually and functionally.

The close connections between the local Cadigal people and the place remain evident in the extensive archaeological resources, the historical records and the geographical place names of the area, as well as the continuing esteem of Sydney's Aboriginal communities for the place.

Much (but not all) of the colonial-era development was removed in the mass resumptions and demolitions following the bubonic plague outbreak of 1900, but remains substantially represented in the diverse archaeology of the place, its associated historical records, the local place name patterns, some of the remaining merchants villas and terraces, and the walking-scale, low-rise, village-like character of the place with its central 'green' in Argyle Place, and its vistas and glimpses of the harbour along its streets and over rooftops, the sounds of boats, ships and wharf work, and the smells of the sea and harbour waters.

The post-colonial phase is well represented by the early 20th century public housing built for waterside workers and their families, the technologically innovative warehousing, the landmark Harbour Bridge approaches on the heights, the parklands marking the edges of the precinct, and the connections to working on the wharves and docklands still evident in the street patterns, the mixing of houses, shops and pubs, and social and family histories of the local residents.

Millers Point & Dawes Point Village Precinct has evolved in response to both the physical characteristics of its peninsular location, and to the broader historical patterns and processes that have shaped the development of New South Wales since the 1780s, including the British invasion of the continent; cross-cultural relations; convictism; the defence of Sydney; the spread of maritime industries such as fishing and boat building; transporting and storing goods for export and import; immigration and emigration; astronomical and scientific achievements; small scale manufacturing; wind and gas generated energy production; the growth of controlled and market economies; contested waterfront work practises; the growth of trade unionism; the development of the state's oldest local government authority the City of Sydney; the development of public health, town planning and heritage conservation as roles for colonial and state government; the provision of religious and spiritual guidance; as inspiration for creative and artistic endeavour; and the evolution and regeneration of locally-distinctive and self-sustaining communities.

[5] Heritage Branch Website, State Heritage Register

The heritage items affected by the headland works are consistent with the above statement, though the Harbour Control Tower was a late arrival.

Early Colonial trade is represented by the Moore's Wharf Building. This warehouse was built in stages in 1836–37 by Captain Robert Towns, who commanded emigrant ships to Australia in the 1820's building up a fast fleet of clippers. He was the first to ship a full cargo of wool to England and entered the whaling industry and Pacific and China cargo trades in 1844. He later did much to open up North Queensland and the city of Townsville was named in his honour. Towns became a leading figure in Australian Maritime and Pastoral industries. The other warehouses that he built in the late Victorian period have been demolished. Moore's Wharf Store is built of sandstone quarried on site by William Long and James Wright. It was sold to Captain Joseph Moore and his son Henry who added a fourth segment at the western end of the store in the early 1840's to accommodate their expanding business as the colony's first P&O agents. During the Nineteenth Century, the store was the scene of many trading innovations. The first shipment of Australian gold to England was loaded from this building aboard the clipper *Phoenician* loaded in 1851. In 1852 the first P&O screw steamship *Chusan* arrived from England with the first mails brought under contract. The colony's first rail locomotive was unloaded here in 1855. For over 60 years Moore's wharf was one of the busiest on Millers Point and it was not until the early 1900's that Moore's Road was renamed Dalgety Road. In 1978 redevelopment plans at Darling Harbour necessitated the move of the building. The Maritime Services Board took the building apart stone by stone, and reconstructed it 50 metres west across the dock facing Walsh Bay. It was reopened in 1981 to house customs and delivery offices, and amenities for port workers.

Sewage Pumping Station 14 at Millers Point has historic, aesthetic and technical/research significance. It was one of an original group of twenty low-level sewage pumping stations constructed at the end of the Nineteenth Century to serve Sydney. The station pumped to the Bondi Ocean Outfall Sewer as a major advance in the protection of the public health by diverting sewage from the Harbour. They were built as a direct response to the outbreaks of Enteric Fever (Typhoid) which plagued Sydney from the 1870s to 1890s. SP0014 is a good example of a small- scale industrial building designed in the Federation Queen Anne style. The surviving fabric of SP0014 reflects the importance of Federation period public utilities, evident in the technical excellence and craftsmanship. The pumping station is technically significant for its continuous use for over a century. It has educational and interpretation potential to reveal information about engineering and architectural taste from a period when utilitarian buildings were given as much attention as public buildings.

The Merriman Street row of terrace houses and cottages has exceptional significance as an intact early-to-mid nineteenth-century row of worker dwellings built privately. They are part of the Millers Point Conservation Area and are listed as archaeological resources.

The Dalgety's Bond Stores Group of Buildings is significant as a townscape feature in an area of dramatic topography. Its different building forms and shapes display a progression of functional architectural style, reflecting the difficulties of building on this contorted terrain. The earliest Bond Store is a rare example of a mid-Victorian Bond Store built of load-bearing stone with a timber frame. The brick bond store is associated with the redevelopment of the area and civil works that followed the bubonic plague of 1901. It perpetuates the memory of Dalgety & Co, one of Australia's large mercantile companies, and demonstrates the maritime activities of Millers Point in the Victorian and Federation periods. The internal structure and remnant industrial machines have additional research significance.

While the cliffs beneath Merriman Street and Clyne Reserve are not individual heritage items, they demonstrate the development of Millers Point's port infrastructure on rocky terrain and contribute to the heritage significance of the conservation area. Clyne Reserve is a listed archaeological item for it s rare level potential to reveal information about early-to-mid nineteenth-century life in Millers Point.

The Munn Street Terraces are significant as a Federation Arts and Crafts group of housing units built by the Sydney Harbour Trust in 1911 to house maritime workers. The row of terraces was previously longer; some were demolished for Darling Harbour Port expansion in the 1960s. They are part of the Millers Point Conservation Area, an intact residential and maritime precinct containing residential buildings and civic spaces from the 1830's. The terraces demonstrate an adaptation of the landscape by a government authority for medium density housing.

The High Street Terrace Duplexes have historical significance as physical evidence of the major state government redevelopment of the district in the years following the 1901 bubonic plague. They have aesthetic significance as a consistent Federation Arts and Crafts residential streetscape.

by individuals or family enterprises and relocated to tis current location from the west side of Circular Quay and the rise of trading corporations is represented by the Grafton Bond Stores. The decay and redundancy of the nineteenth-century wharves and the need for large-scale port renewal at the beginning of the Twentieth Century is demonstrated by the sandstone sea wall, the waterside workers' housing in Munn Street and the expanded Dalgety's Bond Store.

This page has been left blank deliberately.

5.0 Planning Constraints and Opportunities

5.1 Heritage Listing

The heritage items addressed in this report are heritage listed with a number of statutory authorities and are covered by the heritage provisions and requirements under the relevant planning instruments. These authorities include the Council of the City of Sydney, State Government agencies as owners of items, and the Heritage Branch of NSW Department of Planning.

The following table provides a summary of the applicable listings of each of the heritage items addressed in this report.

Item on the site	**Heritage Listings**
MWS & DB Substation (Sewage Pumping station SPS 0014)	Sydney LEP 2005 Sydney Water Section 170 Register Sydney Ports Section 170 Register
Sandstone seawall (at NW of site)	Sydney Ports Section 170 Register
Harbour Control Tower	Sydney Ports Section 170 Register
Dalgety's Bond Stores	State Heritage Register # 00526 Sydney LEP 2005 Sydney Ports Section 170 Register
Munn Street Terraces	State Heritage Register Sydney LEP 2005 NSW Housing Section 170 Register
Grafton Bond Store (Sandstone Wall)	State Heritage Register # 01431 Sydney LEP 1992 Sydney Ports Section 170 Register
Moores Wharf Building (north of site)	Sydney Ports Section 170 Register
Items in the Vicinity of the site	**Heritage Listings**
Millers Point Conservation Area; Millers Point & Dawes Point Village Precinct	State Heritage Register NSW Housing Department Section 170 Register Sydney LEP 2005

Consultations with Sydney Water indicated that if the Sewage Pumping Station (SPS0014) were to be de-commissioned, Sydney Water would transfer the item to the Barangaroo Delivery Authority and de-list this item from their Section 170 (S170) Register.[6]

Ownership transfer of a heritage item listed on a State agency S170 Register (eg. Sydney Waters, Sydney Ports Corporation) should occur in accordance with the notification provisions of Section 170A of the Heritage Act 1977. This states that a minimum of 14 days written notice must be provided to the Heritage Council before the transfer. Upon transfer of ownership, the new owner (ie. Barangaroo DA) should include the new item in its s170 Register as soon as possible, and notify the Heritage Council of the updates.

[6] Refer to *Barangaroo Sewage Pumping Station SPS 14 Conservation Options and Heritage Impact Statement*, prepared by Conybeare Morrison & Associates, June 2010, for Barangaroo DA for Early Works application.

5.2 *NSW Heritage Act 1977*

Items of State heritage significance are protected by listing on the State Heritage Register. A search of the Register has revealed a listing of items that have been identified in Section 6.2 above, including listed items in the vicinity of the proposed development, which also require assessment in terms of impact.

NSW Heritage Branch Advice

The Heritage Branch has provided advice in the document *Headland Park 75W Modification – Heritage Branch Recommendations*. This Heritage Impact Statement responds to the relevant Heritage Branch recommendations as they apply at this stage of the project:

4. An Interpretation Strategy is to be prepared for the Barangaroo site, which includes recommendations on site interpretation of:

- *the historic use of the site;*
- *any historic landforms of the site;*
- *any individual demolished, dismantled or buried heritage items;*
- *historic/significant buildings retained within the precinct; and*
- *the public domain areas of the precinct.*

Comment: This report intends to facilitate the implementation of an Interpretation Strategy by identifying design and landscape features of heritage significance that interpret the site, including the Sewage Pumping Station, the Harbour Control Tower, the Sandstone Seawall, and the lost early 1900's street pattern. The preparation of an Interpretation Strategy before the detailed landscape design is completed would allow for the best result incorporating as many of the recommendations in the Interpretation Strategy as possible. Refer to Section 7.0.

5. Further study is to be undertaken that Investigates the following options for the MWS&DB Sewage Pumping Station:

- *retention of the Pumping Station in situ, albeit buried, as a future archaeological resource; or*
- *its relocation and adaptive reuse within the Barangaroo site (including a recommended methodology for this course of action); or*
- *its relocation to a relevant location (Including a recommended methodology for this course of action); and*
- *recommendations for its interpretation, both within the Barangaroo site and elsewhere, should the study conclude that this is the most appropriate option.*

Comment: A study assessing each of the suggested conservation options and their heritage impacts had been undertaken and a Statement of Heritage Impact report with the preferred option has been prepared and submitted to Department of Planning as part of the Early Works application. The preferred option, developed in consultation with a Hydraulic engineer and a Heritage Structural Engineer, proposed the retention in-situ of the pumping station substructure as a future archaeological resource following the de-commissioning of the station and the relocation of the pumping station superstructure to a new location within the site for adaptive reuse and interpretation. The report recommended a methodology for the relocation of the superstructure in one piece. The new location of the pumping structure is proposed as part of the Main Works, and is assessed in Section 7.0 of this report.

10. Photographic and archival recording of all affected heritage items, as identified in the specialist reports prepared as part of the Environmental Assessment for the project.

Comment: This is covered by Statement of Commitments 62 under “Archival Recording”, and applies to all affected heritage items, and should be undertaken prior to commencement of any works on the site including any demolition or excavation works.

5.3 Statement of Commitments

The approved Concept Plan includes a Statement of Commitments by the Barangaroo Delivery Authority. The applicable *Heritage* provisions are appended (see Appendix B).

5.4 Opportunities

The proposed Barangaroo Headland Park presents opportunities to enhance the precinct and reconstruct the headland to a form resembling its natural appearance in 1836. The headland park would be used as a waterfront public park adjacent to the central business district. The landscape change may be seen as rehabilitating the site after two centuries of increasing use as an industrial port. The main objective of the work is to enhance the natural heritage value of Sydney Harbour. There is opportunity to expand the habitat of ridge-top forest ecosystems and foreshore rock pool ecosystems in Sydney Harbour.

There is now an opportunity to improve the setting of a number of heritage items constructed before the dramatic redevelopment of the Millers Point port facilities in the 1960s. The setting of Moore’s Wharf Building could be enhanced by adjusting the foreshore to a distinct wharf environment. The relocation of SPS 014 to a site close to the water’s edge at much the same level as its existing level could in a sense restore its setting to a site close to water, as distinct from being over powered by much larger later buildings and vast expanses of open dockside as was the case in the late Twentieth Century. The relocation of the building provides opportunity to reconstruct the slate roof, the original design of the timber sash windows, and to reconstruct timber doors that interpret the original design while being a suitable structure to house a public toilet. The infill works for new headland would provide a more gentle gradation of topographical change for heritage properties along Munn and Merriman Streets than the existing cliff cut in the 1960s. This could allow for a topography that is more similar to the topography at the time of construction for these buildings than the current topography.

Permanent interpretation within the Barangaroo Headland Park presents opportunities to describe the maritime trading history of the city and the colourful history of Millers Point. During construction phase, there is the opportunity to inform the community of the project visions by a temporary display of suitable images and visions on hoardings and barricades around the construction zone;

This page has been left blank deliberately.

6.0 Description of Proposed Works

The development proposal comprises the redevelopment of the northern part of the Barangaroo site for a new public park and the creation of a new harbour inlet intervention — the Northern Cove. An earlier application for Early Works that was submitted to Department of Planning included site security matters, demolition works, environmental and heritage protection, modification to existing services including the construction of a new gravity sewer along the Hungry Mile prior to the de-commissioning of the existing Sewage Pumping Station, sandstone extraction and the receipt of fill from Stage 1.

The proposed Barangaroo Headland Park project includes all works required to construct the following:

- the final landform of the park and the cove,
- an underground car park with up to 300 spaces,
- a space above the carpark for future use as a cultural facility.

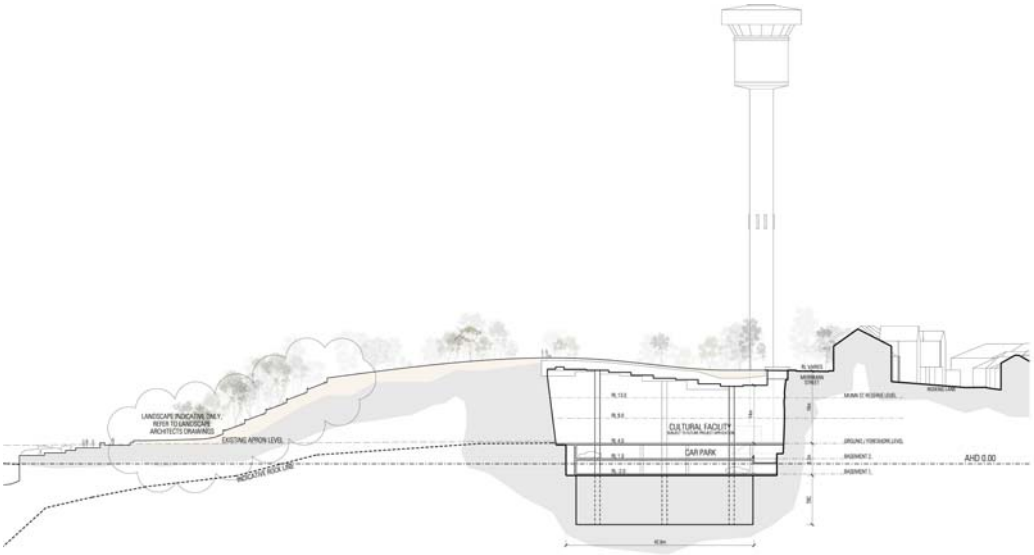

Fig. 6.1: East-West sectional drawing of proposed reconstructed landform, cultural centre and carpark. (Source: Barangaroo Delivery Authority)

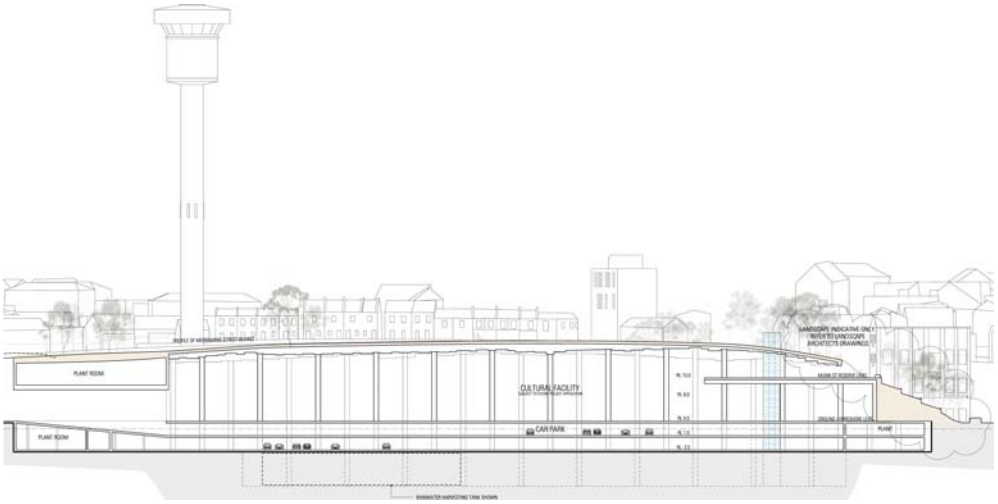

Fig. 6.2: North-south sectional drawing of proposed landform, cultural centre and carpark. (Source: Barangaroo Delivery Authority)

The proposed construction will include the following, summarised as:

1. Excavation, filling and land formation
    - creation of the final landform and naturalistic shoreline. As part of the shoreline works, the existing heritage listed sandstone seawall (western side) will be dismantled down to 4m below the high tide mark and retrieved sandstone blocks reused on site and incorporated in the Headland Park works.

2. Public Domain infrastructure:
    - construction of the underground car park and public connections
    - construction of a new access entry connecting from Towns Place to the new underground car park,
    - construction of a series of pedestrian pathways connecting the Headland Park to Merriman Street, Argyle Place and the Hungry Mile (Hickson Road) to the south
    - construction of a public jetty on the southern shore of the Northern Cove;
    - installation of drainage infrastructure
    - installation of utility services
    - new public lighting
    - installation of security system (CCTV, etc)

3. Architecture:
    - construction of a space for future cultural or community use, comprising a space of approximately 75,000m³ above the carpark in an efficient footprint. A future works application may be required to resolve the landform contour design and may increase the cultural space to approximately 100,000 m³.
    - installation of the relocated Sewage Pumping Station superstructure on the northern shore of the Headland Park adjacent to Moore's Wharf for future adaptive reuse as a public toilet block.
    - public amenities to cater for every day patronage.

4. Landscape architecture:
    - laying of fill, soil and drainage pipes to support revegetation
    - Shoreline works for a rocky shoreline with tidal pools, and a shoreline promenade offset from
    - Paths, steps and low-height retaining walls to enhance public access
    - Planting of indigenous trees, with the species selection modelled on nearby harbour headlands, including eucalypts, casuarinas and Port Jackson fig trees
    - establishment of vegetation with a mix of young and mature stock consisting of ground covers, shrubs and trees.

5. Waterfront and maritime design and engineering.
    - Shoreline retaining works to adapt existing caissons and construct new reinforced concrete structures, the Northern Cove, and another smaller cove to the north-east of the headland.

A more detailed works description is available in the report accompanying the Main Works application. The drawings of the proposed Headland Park and Northern Cove Main Works are appended with the application.

7.0 Impact Assessment of the Proposed Works

The Barangaroo Headland Park will transform the northern end of the Millers Point with the reconstruction of the naturalistic profile and form of the north-west corner of Millers Point. A space for a future use (as a cultural facility and car park that will be the subject of a separate development application) would be constructed under the headland park.

7.1 Identification of Heritage Impacts

The basis of assessing heritage impact is to review and analyse the proposal, and assess the impact that the proposed works will have on the identified heritage significance of the item or conservation area. This assessment will attempt to identify heritage impacts both positive and negative, then evaluate those impacts, and then if necessary, recommend methods to mitigate those impacts.

7.1.1 Moore's Wharf Building

The headland works would have no physical impact on the Moore's Wharf Building if adequate protective measures are used during nearby excavation. The restoration of the 1836 shoreline requires excavation west of the existing building that would reduce the existing area of in-filled land and create a small inlet. The western side of this inlet would have a naturalistic cove form, and the eastern side, offset from the Moore's Wharf Building, would have a rectilinear seawall made from reinforced concrete. The existing pavement on the west side of the building would be retained. These changes to the setting of the building would reinforce the dockside maritime trade that brought the original building into being. As such, these works would have a positive impact.

7.1.2 Shoreline and Seawall

The reconstruction of the 1836 shoreline at the Barangaroo Headland Park would require the area of existing roll-on roll-off port hardstand to be reduced. The 1913 sandstone seawall would be removed and the stones reused on the site along the altered shoreline. The stones would be used as retaining elements near the shoreline in a more random arrangement, set on top of the reinforced caissons. The existing hardstand land behind the sea wall was formed by the Sydney Harbour Trust (later Maritime Services Board) over a period of time between 1910 and 1970, and may contain archaeological relics and works.

7.1.3 Sewage Pumping Station 14

The sewage pumping station would be decommissioned and the superstructure relocated, as part of the Early Works Program. This application proposes that the final place for the relocated building be close to the foreshore at the northern end of the Headland Park, in the vicinity of Moore's Wharf. The building would be adapted as a public toilet and set at a similar height above sea level to its original height.

7.1.4 Merriman Street Cliff

Although not a listed item, the sandstone cutting along Merriman Street is a marker for the observer to appreciate the extent of previous maritime use and topographical transformation. The sandstone bedrock cliff along the western edge of Merriman Street, Munn Street and Clyne Reserve was exposed during port works 1910–1970. The proposed headland and the space for a future use within would be constructed up to the level of Merriman Street, leaving a 6m space to expose the existing cutting face. The works would make this cliff face less visually prominent.

7.1.5 Clyne Reserve and Dalgety Terrace

The cliff-top context of the Dalgety terrace would remain, with the reconstructed headland rising from a point north of Clyne Reserve. A new roadway would rise around Clyne Reserve in an anti-clockwise direction, retaining the exposure of the sandstone bedrock cliff under the northern end of Clyne Reserve. The headland is intended to be integrated sensitively with Clyne Reserve towards the west, so the sandstone bedrock cliff exposed in the 1960s to the west of the reserve would become largely obscured. A pedestrian bridge would link Clyne Reserve to the new headland over the access road to the proposed carpark.

7.1.6 Munn Street Reserve and Munn Street Terraces

The works would leave Munn Street seemingly less cut off on the edge of a cliff by filling some of the bulk that was removed in the 1960s that truncated Munn Street. A new bridge would give a sense of continuity at a similar level from Munn Street to the new headland park. The bridge would pass over the proposed entry plaza to the space for a future use. The design brief for the proposed cultural facility requires that its entry be integrated with the Munn Street Reserve. The urban character of abrupt large-scale civil works for port facilities at Millers Point would be diminished and become more subtle. There would be no physical impact on the Munn Street Terraces, but the headland works would diminish the abrupt industrial port context of the terraces that is connected to their original function to house port workers.

7.1.7 Merriman Street Terraces

The context of the Merriman Street Terraces would be changed by the filling-in of the East Darling Harbour dockland. The abrupt cliff-top context of Merriman Street would be softened in distant views by the apparent continuation of land at the level of Merriman Street. A 6m wide space would be retained, exposing the Merriman Street cliff that faces west in views from the proposed area for a future use. While the reconstructed headland would bring the north-west corner of Millers Point close to its form and appearance in 1788, this naturalistic context is quite different to the early context of Merriman Street when there were rows of houses on both sides of the street at the southern end. The works would have minimal physical impact on the Merriman Street Terraces. The width of Merriman Street is be conserved. The views to the harbour from the terraces would be diminished by the apex of the proposed new Headland Park and the roof over the space for a future use.

7.1.8 Dalgety's Bond Stores

The urban context of these buildings would be changed by extending the Munn Street Reserve to provide an entry to the proposed space for a future use, making for a less obvious industrial port identity. The proposed infill of the reconstructed headland would be kept approximately 2m offset from the sandstone façade of Dalgety's Block A. The infill would fall from approximately 6m or 2 storeys in height at the northern end of base of the cliff where Block A is built against the cliff; the fill would fall to existing ground line close to the southern end of the brick Dalgety's Block C. Views from the lower levels of Block A towards the west would be diminished.

7.1.9 Harbour Control Tower (Port Operations and Communication Centre)

The tower is not proposed to be demolished as part of this Main Works application for the Barangaroo Headland Park. As such, the works covered by this application would have no physical impact on the tower; however, its setting would be changed extensively by the removal of the remaining industrial port facilities at East Darling Harbour that justified the construction of the tower. The reconstruction of the naturalistic headland would contrast with

the working life of the tower. Any changes to the Harbour Control Tower would be part of a future application.

7.1.10 Grafton Bond Stores and Sandstone Wall

The Barangaroo Headland Park main works would have no physical or visual impact on the Grafton Bond Stores and Sandstone Wall.

7.1.11 The Road Pattern

The headland works have the potential to extend the alignment of Munn Street into the proposed space for a future use. This could be used to interpret the westward alignment of Munn Street that existed in the 1870s until c1900, when Munn Street was redirected towards the south to wrap around Dalgety's Bond Stores.

7.2 Evaluation of Heritage impacts

7.2.1 Moore's Wharf Building

The proposed seawall and new inlet for the harbour on the west side of the Moore's Wharf Building would be a positive impact for the setting of the building by emphasising its original dockside origins. The building would occupy its own small peninsula on the site of Tyser's Wharf, a timber pier that was constructed prior to 1904. The reconstructed headland would remove the massively scaled port infrastructure, developed in the 1960s that dwarfed the Colonial scale of the Moore's Wharf Building in recent decades. The proposed setting of the building would be between the reconstructed headland and the Federation Walsh Bay piers of a compatible scale, having some positive impact on the Moore's Wharf Building. The relocation of the building in 1978–81 prevents its context from being truly restored. These positive impacts on the setting of the building may be seen in a narrow context as conjectural, but the works are necessary to fulfill the larger vision of reconstructing the headland and do not have a negative impact on the Moore's Wharf Building.

7.2.2 Shoreline and Seawall

The reconstruction of the 1836 shoreline to make the Barangaroo Headland Park is primarily motivated to improve the natural heritage of its site rather than improving the cultural heritage on its site. Nonetheless, there would be some positive impact on cultural heritage by reconstructing the 1836 shoreline. It would become easier for the public to understand the mid-to-late nineteenth-century maritime trading development of Millers Point when the shoreline of the former timber wharves is in place. The slope of the headland falling towards Darling Harbour could demonstrate why Sydney Cove was developed earlier as a port.

The rearrangement of the 1913 sandstone seawall into a naturalistic shoreline alignment would diminish the heritage significance of this local heritage item. The rearrangement would remove evidence for the placement of this seawall as part of the works of the Sydney Harbour Trust to redevelop the dilapidated timber wharves into a dock suitable for larger cargo ships. The stones would retain their function as retaining elements near the shoreline, a short distance from where they were originally placed. With interpretation, some of the heritage value of these stones could be retained if they are used to define the original alignment of the sea wall. Consideration should be given to retaining a small number of stones in their existing location as a means of identifying the 1913 shoreline. It should be noted that the multitude of stormwater pipes penetrating and chased into the sandstone has impacted the significance of the seawall (see Fig. 3.4). Exposing a different face of the stone blocks may disguise this impact.

7.2.3 Sewage Pumping Station 14

The relocation of SPS 14 further east to a site near the foreshore at a similar height above sea level where it would be used as a public toilet is the best relocation option available from a heritage point of view. The function is appropriate for the building, considering its scale and function as a sewage pumping station. This work also provides an opportunity for the reconstruction of missing elements. SPS 14 would be diminutive in scale adjacent to Moore's Wharf Building. Being on the edge of the reconstructed headland, SPS 14 would interrupt the proposed reconstructed naturalism of the headland park.

The relocation of the Federation brick and sandstone superstructure is the preferred option to mitigate the decommissioning. It would be relocated approximately 70m further east, in reasonable proximity to its original location. It would be relocated as a whole building, which is the preferred method of relocating it. The building would be adapted as public toilets adjacent to a foreshore path where it is likely to be highly visible and most used. The building is a suitable size and configuration for this new use. The metal roller shutter is not original and could be replaced or removed. The original position of the Pumping Station should be interpreted within the surface of the new Headland Park.

7.2.4 Merriman Street Cliff

The proposed space between the sandstone bedrock cliff/cutting along the western edge of Merriman Street would retain evidence of the dramatic excavation for port works up to the 1960s. The space between the new headland park and Merriman Street would also signify the extent of landscape reinstatement in the Headland Park, without covering up the sandstone cutting. The exposure of the sandstone cutting can be read as a 'fissure' across the landscape, ensuring legibility between periods of cultural development over two centuries. This treatment would have a positive heritage impact by the subtle retention of industrial evidence while recreating the headland. The exposure of the sandstone wall is also consistent with Millers Point and the Rocks because the cliff is characteristic of Millers Point and reflects the nature of its development.

7.2.5 Clyne Reserve and Dalgety Terrace

The cliff-top context of the Dalgety Terrace would remain without any adverse heritage impact. The sandstone cutting around Clyne Reserve would be exposed adequately. The Reserve consists of a series of terraced platforms, and the new access road curving around Clyne Reserve at a lower level would form another terraced platform. This degree of exposure will ensure consistency and definition of the 'fissure' across the Headland Park site.

Clyne Reserve is an archaeological item for the evidence of trenches in the sandstone bedrock. The reserve is to be retained and linked to the headland park. No adverse heritage impacts are anticipated on Clyne Reserve. If it is possible to relocate the pedestrian bridge over the vehicular entry anti-clockwise around Clyne Reserve (further to the south-west), then this bridge could be used to interpret the original alignment of Clyne Street.

7.2.6 Munn Street Reserve and Munn Street Terraces

The works to extend Munn Street leading to the future entry plaza for the space for a future use would have some positive heritage impact by reactivating Munn Street. The reconstruction of the headland and infill of the 1960s void for the East Darling Harbour port would restore a sense of the landform of the Munn Street Terraces at the time of their construction.

The loss of an industrial port character around these terraces is part of long-term change. The impact of the headland works on the terraces would be minimal.

7.2.7 Merriman Street Terraces

The filling-in of the East Darling Harbour dockland and reconstruction of a headland containing a space for a future use would block views between these terraces and other vantage points around Sydney Harbour that have existed since the 1960s. This view is not old enough to have a high level of heritage significance, so its loss is considered to be a minor impact. Prior to the 1960s dockside clearing, westerly views from Merriman Street were blocked by warehouses. The southern portion of Merriman Street also contained one and two-storey housing in the latter half of the nineteenth century, limiting views to and from the southern section of the west side of Merriman Street.

The 6m wide space exposing the Merriman Street cliff facing west would be an adequate measure to balance the softening of the abrupt cliff-top context of Merriman Street. The works would have no physical impact and no significant adverse heritage impact on the Merriman Street Terraces.

7.2.8 Dalgety's Bond Stores

The change in urban context for these buildings with the reconstruction of the northern headland would not be a significant adverse heritage impact because there would be no physical impact and only a very minor blocking of views to the lowest level of Dalgety's Block A.

7.2.9 Harbour Control Tower

No works are proposed to the tower. The reconstructed headland over the former East Darling Harbour dock would change the setting of the tower by removing the dock that led to the construction of the tower. The tower is however, a very tall structure that can be interpreted clearly with a small amount of information. Considering the relative late arrival of the tower in the Millers Point maritime port context, the natural heritage advantages of reconstructing the headland, and the ease of interpreting the tower, the change to the setting of the tower would have a minor adverse heritage impact on the tower.

7.2.10 Grafton Bond Stores and its Sandstone Wall along Hickson Road

The Barangaroo Headland Park main works would have no physical or visual impact on the Grafton Bond Stores and its Sandstone Wall, and therefore no heritage impact.

7.2.11 High Street Duplexes

The High Street Duplexes constructed by the Sydney Harbour Trust would be unaffected physically or visually by the Barangaroo Headland Park. The westerly views of the duplexes at 2–36 High Street over Darling Harbour would remain at the completion of the wider Barangaroo development.

7.2.12 The Road Pattern

The headland works have the potential to extend the alignment of Munn Street into the proposed space for a future use. This could be used to interpret the westward alignment of Munn Street that existed in the 1870s until c1900, when Munn Street was redirected towards the south to wrap around Dalgety's Bond Stores.

7.3 Summary of Impacts

The following is a summary of impacts of the proposed main works on the affected heritage items.

Item	Proposal	Impact/mitigation
Clyne Reserve	Access road beneath park	Minor change to cliff context
Moore's Wharf Building	Provision of access to the new Headland Park	Positive impact in the interpretation of the former wharf pattern
Merriman Street terraces	Headland space for a future use would block views to west. Existing cliff remains exposed.	Minor impact, no mitigation required
MWS & DB Pumping station 14	relocation	Some negative impacts, but mitigated by retention in an appropriate vicinity with opportunity for interpretation and appropriate new use as public toilets
Sandstone seawall	Part demolition and relocation to nearby sites	Considerable adverse impact but function remains and potential mitigation with interpretation.
Harbour Control Tower	No proposed works	Minor impact on the setting of the tower
Munn Street Reserve	Munn Street is used as entry to space for a future use	Positive impact in the reactivation of the former street pattern
Cliff around Clyne Reserve and Merriman Street	Exposure along Merriman Street and partial exposure along Clyne Reserve	No significant impact
Dalgetys Bond Stores	Retaining wall and fill added to vicinity of lowest floor	Works would have no physical impact, but minor blocking of some views to a small part of the building.
Grafton Bond Stores and Sandstone Wall	No works	No impact
High Street Duplexes	No works	No impact

8.0 Conclusion and Recommendations

8.1 Conclusion

The reconstruction of the Millers Point headland to become the Barangaroo Headland Park would rehabilitate a prominent point in Sydney Harbour close to its original form, enhancing the natural heritage context of other headlands in the vicinity. The finished vegetated park would act as a foil to existing and proposed developed areas of Sydney's central business district.

The works would enhance the setting of Moore's Bond Stores by providing a more intimate port-side environment, quite different from the existing massive contrast in scale it experiences adjacent to the East Darling Harbour dock. Reconstructing the headland would enable the building to appear on a small peninsula on the site of the former Tyser's Wharf. The reactivation of Munn Street would be a positive heritage impact reflecting the nineteenth-century street pattern. The proposed interpretation works have the potential to enable the Barangaroo Headland Park project to exercise a positive heritage impact on most of the surrounding heritage items. Given that the decommissioning of Sewage Pumping Station 14 has been addressed in the Early Works program, the decision to relocate the superstructure to a nearby location at a similar level for use as public toilets is a positive impact. Interpretation and reconstructing missing original building elements could largely mitigate the adverse heritage impact consequent upon moving the building. Reconstructing the 1836 shoreline would open possibilities for interpretation of the nineteenth-century uses of the site.

The 1913 sandstone seawall would experience some adverse heritage impacts as part of these works. The arrangement of the seawall's sandstone blocks and their original location would be lost, however, their continued function as retaining elements a short distance from their original location provides opportunity for interpretation that would mitigate the impact of moving them. The existing condition of the sandstone seawall has been compromised due to the multiple stormwater pipe penetrations through the original sandstone fabric.

Heritage items that would not be subject to a significant change in their heritage 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.

8.2 Recommendations

The proposed retaining wall on the western side of Moore's Wharf building should be designed to protect and enhance the significance of this building. Consideration should be given to designing the retaining wall as a gentle curve offset from the building.

The applicant has committed to prepare a methodology for the relocation of Sewage Pumping Station 14. As part of this, detailed management policies should be developed to guide the relocation and adaptation of the sewage pumping station to retain all the original fabric of the enclosing building. Appropriate mitigation measures include reconstructing the slate roof and timber windows to the original design, and to design new doors that interpret the original timber access doors. The applicant has committed to undertaking an archival recording of the building.

The pathways across the reconstructed headland have potential to interpret the street layout in the latter half of the Nineteenth Century if several of the pathways on the top of the hill can be relocated slightly.

The applicant has committed to prepare an Interpretation Plan for the whole Barangaroo site. The preliminary Heritage Interpretation Strategy should address the heritage value of the sandstone blocks in the seawall to be relocated. An implemented Interpretation Plan should demonstrate how, when and why these sandstone blocks were originally laid.

The exposure of the sandstone cutting west of Merriman Street has potential to provide natural light, ventilation and an outlook for the proposed space for a future use and carpark within the headland park, as well as being an interpretation device for the site's past as a major port. There is also potential to provide a dramatic night time effect, with light emanating from the 'fissure'.

There is the potential to interpret the lost street pattern in the new pedestrian access points at Munn Street, Bettington Street and Clyne Reserve. In addition to the Munn Street Reserve providing a reactivated point of access to the space for a future use, the former loop road could be interpreted in part in the proposed pedestrian bridge and entrance plaza.

A fencing plan should be considered to guide public safety fencing in conservation areas, naturalistic spaces and adjacent to contemporary buildings. A fencing plan would demonstrate how safety concerns could be addressed with the least adverse heritage impacts.

Consideration should also be given to the design of a creative hoarding during the construction process. This is an opportunity to inform the public about the significance of the site and the works.

A signage strategy should be undertaken to guide and limit the installation of signs on land, buildings and foreshore circumstances.

Recommended Conservation Policies:

The recommended conservation policies are -

1. Prepare a detailed interpretation strategy for heritage items proposed to be affected by the works as part of the overall site interpretation
2. Proposed works should minimise damage and disturbance to significant original fabric of heritage items.
3. Prepare a Conservation Management Plan for heritage items proposed to be affected by the works to guide the future management and maintenance of the item.
4. Prepare construction works method statements for all heritage items in the vicinity of works that could be affected by construction works, including vibration. This would include restricting vehicular access to the Hungry Mile (Hickson Road) for all heavy vehicles.
5. A structural audit of all heritage items in proximity to the works should be completed before the commencement of construction works.
6. If in doubt, seek advice from a heritage architect and/or heritage engineer prior to commencing works.

APPENDICES

Appendix A: Statement of Commitments – Extracts of Heritage clauses

Subject	Commitments	Timing
	guidelines for the site that will refresh the offerings, yet ensure consistency of vision and connection between the office and residential blocks, while maintaining an appropriate mix and market positioning of the Barangaroo retail precinct. 38. The Retail Management Plan is to include the opportunity for ephemeral retailing events, such as markets and festivals, which are consistent with the overall retail image or brand of the precinct. 39. A Technical Working Group is to be established to prepare the Retail Management Plan. The membership of the Working Group is to be determined by the proponent team and the Barangaroo Taskforce (under its terms of reference dated 26 November 2006) or equivalent body. 41. The Terms of Reference of the Technical Working Group is to be consistent with the requirements for preparation of the Retail Management Plan specified elsewhere in this Statement of Commitments and endorsed by the Barangaroo Taskforce or equivalent body. 42. The Retail Management Plan is to be submitted by the Working Group to the Barangaroo Taskforce **or** equivalent body. The Barangaroo Taskforce or equivalent body will report to the IPCC on relevant matters as recommended by the proponent team and Working Group. The proponent team will report to the Barangaroo Delivery Authority Board on recommendations from the Working Group. 42A. Following endorsement, the Retail Management Plan is to be made publicly available in a manner to be determined by the Barangaroo Taskforce or equivalent body.	
Parking & Servicing	43. Off-street bicycle parking and shower facilities are to be provided within buildings in line with City of Sydney Council Code rates. 44. All on-site parking areas should conform to the requirements of AS2890.1:2004. 45. The following maximum car parking rates shall apply to future development within the site: Commercial Uses - 1 space / 600m² GFA Residential -1 bedroom unit – 1 space / 2 units 2 bedroom unit – 1.2 spaces / unit 3 bedroom unit – 2 spaces / unit Other Uses -City of Sydney Council rates Passenger Terminal - subject to a future traffic report based on demand estimates 46. All building servicing and loading facilities will be in line with City of Sydney Council code rates. 47. All service/delivery areas will conform to the requirements of AS2890.2: 2002 subject to driveways complying with the City of Sydney requirements.	At the stage of any relevant project application.
Heritage Sewer Pump Station	48. A Heritage Impact Statement will be prepared to for the sewage pumping station which is to guide its future treatment. The Heritage Impact Statement is to consider the following options:	At the stage of any relevant development or project application relating to the sewer pump station structure.

Subject	Commitments	Timing
	▪ retention of the Pumping Station in situ, albeit buried, as a future archaeological resource; or ▪ its relocation and adaptive reuse within the Barangaroo site (including a recommended methodology for this course of action); or ▪ its relocation to a relevant location (including a recommended methodology for this course of action); and ▪ recommendations for its interpretation both within the Barangaroo site and elsewhere, should the study conclude that this is the most appropriate course of action. The Heritage Impact Statement will be prepared in consultation with a heritage experienced engineer to ensure minimum alteration and damage to the fabric. Moving the whole structure in one piece should be investigated. 48A. If the Heritage Impact Statement recommends either relocation or demolition, archival recording of the structure will be undertaken. The archival recording will be prepared in accordance with the NSW Heritage Office Guidelines.	
Dalgety's Bond Store	49. A Conservation Management Plan (CMP) will be prepared by an appropriately experienced and qualified heritage practitioner for the Dalgety's Bond Store in accordance with the NSW Heritage Office Guidelines and in consultation with the NSW Heritage Office. Any proposal for major alterations and additions to the building site will be guided by the CMP.	At the stage of any development or project application relating to the Dalgety's Bond Store.
Views to Millers Point Conservation Area	50. Future development within the Barangaroo site is to retain views to Observatory Hill Park from public spaces on opposite foreshores; and to retain a panorama from Pyrmont Park around to the Harbour Bridge as seen from Observatory Hill Park, and as shown within the Concept Plan by the photomontage images included in the Heritage Impact Statement prepared by City Plan Heritage, amended by the Barangaroo Modification Report dated June 2008 prepared by MG Planning. 51. Future development within the Barangaroo site is to provide adequate view corridors over and between new built form to maintain the key attributes of views from Millers Point. The key attributes to be retained are: 1) views to significant tracts of the water, 2) the junction of Darling Harbour and the Harbour proper, 3) the opposite foreshores, 4) panoramic qualities of existing views, and 5) the most distinctive views to landmark structures, All the above are shown within the Concept Plan and illustrated by the photomontage images included in the Heritage Impact Statement prepared by City Plan Heritage.	To be demonstrated / assessed as part of any relevant development /project application. To be demonstrated / assessed as part of any relevant development application/ project application.
Grafton Bond Store (Sandstone Wall)	52. Future development within the Barangaroo site is to retain the ability to appreciate the Millers Point headland and the roofscape of terrace houses throughout Millers Point when viewed from public spaces on opposite foreshores. The detailed design of future development within Barangaroo should ensure a relationship between new built form and existing structures and design details within Millers Point Conservation Area. Consultation is to be undertaken with NSW Heritage as	To be demonstrated / assessed as part of any relevant development application / project application.

Subject	Commitments	Timing
	part of the detailed project Application Stage. 53. An appropriately experienced and qualified heritage practitioner will be engaged to prepare Advice and a Schedule of Conservation Works that will guide the conservation of the sandstone wall on the eastern side of Hickson Road as part of the construction of any proposed pedestrian bridge across Hickson Road. The Advice and Schedule of Conservation Works will inform the design of the proposed Hickson Road bridge and, in particular, how it meets the wall, and shall include conservation works to the palisade fence, sandstone piers and plinth, the cutting wall, the existing High Street steps (southern end), in-filled steps (northern end), and the substation at the southern end. Any new fence elements shall be sympathetic to the existing significant fence fabric.	At the stage of any development or project application relating to the construction of the proposed pedestrian bridge across Hickson Road.
Moreton's Hotel	54. A Conservation Management Strategy (CMS) will be prepared by an appropriately experienced and qualified heritage practitioner for the Moreton's Hotel in accordance with the NSW Heritage Office guidelines and in consultation with the NSW Heritage Office. The CMS will provide specific guidelines and conservation policies for the implementation and construction of any pedestrian walkway running through (with owner's consent) or alongside the Hotel, but will not address the whole Moreton's Hotel site.	At the stage of any development or project application relating to Moreton's Hotel.
Munn Street Terraces	55. A Heritage Impact Statement (HIS) will accompany any application for works to Munn Street or in the vicinity of the Munn Street Terraces. That HIS will include an assessment of how the development proposed satisfies the following Principles: ▪ The design of the building any structures proposed adjacent to the west of the Terraces will be sympathetic in bulk and scale and retain a reasonable level of amenities for the occupants of the Terraces. ▪ Works to Munn Street will retain and conserve the front verandas, other building elements of significance along the southern frontage and the remnant cross walls and floors from the demolished terraces attached to the western elevation. ▪ Works to Munn Street will retain and conserve significant landscape elements associated with the former street and the Terraces, such as the sandstone retaining walls and fences.	At the stage of any development application / project application relating works to Munn Street or in the vicinity of the Munn Street Terrace.
Moores Wharf Building	56. A Conservation Management Strategy (CMS) should be prepared for the Moores Wharf Building in accordance with the NSW Heritage Office Guidelines if a change of use or activity is proposed that requires substantial alteration to the place. The CMS will provide guidelines for the adaptive reuse of the building, which will be implemented in association with any development application for the building. The CMS will also suggest other appropriate uses in addition to the current use for Ports Security administration, particularly uses related to harbour activities.	At the stage of any development application / project application relating to the Moores Wharf building.
Sandstone Seawall	57. A Heritage Impact Statement will be prepared in relation to the proposed relocation and reuse of the sandstone seawall in the vicinity of the Headland Park.	At the stage of any development application / project application relating to the sandstone seawall.

Subject	Commitments	Timing
Palisade Fence and High Steps (High Street)	58. The proposed pedestrian bridges over Hickson Road will include conservation works to the palisade fence, sandstone piers and plinth, the cutting wall, the existing steps (southern end), in-filled steps (northern end), and the substation at the southern end. The conservation works will be implemented through preparation and adoption of a Schedule of Conservation Works. Any new fence elements will be sympathetic to the existing significant fence fabric. An appropriately experienced and qualified heritage practitioner will be engaged to provide advice on the construction of the pedestrian bridge, how it meets the wall, and the conservation of the wall.	At the stage of any development application / project application relating to the proposed bridges over Hickson Road.
Port Operations and Communications Centre (Harbour Control Tower)	59. A Heritage Impact Statement will be prepared to assess the significance of the Harbour Control Tower The Heritage Impact Statement will be undertaken using the State Heritage Register criteria for listing.	To be assessed at the stage of any development application / project application relating to the Harbour Control Tower.
Archaeology	60. All affected potential historical archaeological sites or 'relics' of Local and State significance are to be subject to professional Archaeological Assessment in accordance with Heritage Council guidelines. The Assessment must address both terrestrial and maritime archaeological resources and must be prepared by a practitioner (or practitioners) with both terrestrial and maritime experience. The Assessment must consider the desirability and staging of any proposed archaeological excavation and/or recording before construction works commence and also other mitigation strategies such as archaeological monitoring (or 'watching brief') during construction works. 60A. A Research Design including an Archaeological Excavation Methodology will be prepared in accordance with Heritage Council guidelines for each site which is to be impacted by the proposal. Those documents will be prepared for the approval of the Director of the Heritage Branch, Department of Planning. The archaeological Excavation Director will be a qualified archaeologist, and will meet the current Excavation Director Criteria for State significant sites as published by the NSW Heritage Council. 60B. After archaeological works are undertaken, a copy of the final excavation report(s) will be prepared and lodged with the Heritage Branch, Department of Planning, to the State Library of NSW and also to the Local Studies Library in the City of Sydney. The information within the final excavation report will be in accordance with Heritage Branch requirements. 60C. A repository for the relics salvaged from any historical archaeological excavations will be nominated by the Barangaroo Delivery Authority.	To be assessed at the stage of any development application / project application involving surface disturbance.
Interpretation	61. An appropriately experienced and qualified heritage practitioner will be engaged to prepare an Interpretation Plan for the whole Barangaroo site in accordance with the NSW Heritage Office Heritage Interpretation Policy. The Plan will explore various cultural, social and environmental themes related to the site including, but not limited to: ▪ The natural landscape ▪ Aboriginal history ▪ Manipulation of the landscape ▪ Maritime industry, trade and commerce ▪ Labour, workers and social movements ▪ Archaeology	Prior to commencement of any works on the site including any demolition or excavation works. The final Interpretation Plan should be submitted for the approval of the Director of the Heritage Branch, Department of Planning, for approval within 6 months of the completion of the construction works.

Subject	Commitments	Timing
	The plan will make recommendations for: ▪ Public Art ▪ Naming ▪ Interpretive Signage and Installations ▪ Display of Archaeological Deposits ▪ Built Form Strategies The plan will also include strategies for: ▪ Staged Implementation ▪ Ownership ▪ Identification of Responsible Stakeholders ▪ Future Maintenance ▪ any individual demolished, dismantled or buried heritage items; ▪ historic/significant buildings retained within the precinct; and ▪ the public domain areas of the precinct. 61A. After completion of the archaeological fieldwork, the findings of the archaeological work should be incorporated into the Interpretation Plan.	
Archival Recording	62. Photographic and archival recording of all affected heritage items, as identified in the specialist reports prepared as part of the Environmental Assessment for the project, will be undertaken prior to the commencement of any construction activity. Recording will be completed in accordance with the Guidelines Issued by the Heritage Council of NSW. Copies of these photographic recordings will be made available to the Heritage Branch, Department of Planning, to the State Library of NSW and also to the Local Studies Library in the City of Sydney.	Prior to commencement of any works on the site including any demolition or excavation works.
Supervision and Advice	63. Specialist consultants in heritage, landscape, interpretation, historical archaeology and maritime archaeology will be nominated for the Barangaroo project. The consultants will have appropriate qualifications and experience commensurate with the scope of works. The name and experience of the consultant/s will be submitted to the Director of the Heritage Branch, Department of Planning, for approval prior to commencement of works. The heritage consultant/s will advise on the detailed design resolution of new heritage related works, undertake site inductions, and inspect design and installation of services involving heritage items and fabric (to minimise impacts on significant fabric and views) and manage the implementation of the conditions of approval for the project. A report by the principal heritage consultant (illustrated by works' photographs) will be submitted to the Director of the Heritage Branch, Department of Planning, for approval, advice and comment within 6 months of the completion of the works which describes the work, any impacts/damage and corrective works carried out.	Prior to lodgement of any relevant applications and throughout works.
Notification of demolition of Section 170 Heritage Items	63A. The Director of the Heritage Branch, Department of Planning is to be notified in writing within 14 days of the demolition of any heritage item listed on a Section 170 Register by the relevant government agency responsible for that Register.	

Subject	Commitments	Timing
ESD	64. There is to be an environmental focus on strategies for Water, Energy, Micro-Climate, Environmental Quality / Amenity, Landscape, Transport, Waste and Materials for the development. Each building on site will achieve the primary benchmark of a "5 star" standard of Commercial: Green Star 5 star, and Residential: Green Star Residential score >60, and each development will be required to demonstrate how it satisfies each of the following Key Performance Indicators for each of the ESD focus areas referred to below.	ESD report to be lodged with each relevant development application / project application.
Water	65. There is to be a 35% reduction in Potable Water Consumption compared to a standard practice development and a 40% reduction in flow to sewer compared to a standard practice development.	To be demonstrated / assessed as part of each relevant development / project application.
Energy	66. There is to be a 35% reduction in Greenhouse Gas Emissions compared to a standard practice development. 20% of power is to be purchased from low impact, renewable sources or alternatively there should be a 20% reduction in GHG emissions through carbon offsets. The purchase of renewable energy should be at World Best Practice level.	To be demonstrated / assessed as part of each relevant development /project application.
Micro Climate	67. Key public open spaces (parks and squares) are to receive direct sunlight in mid-winter.	To be demonstrated / assessed as part of each relevant development / project application.
Landscape	68. Primarily non-invasive plant species are to be used on the site.	As above
Transport	69. Ensure that there is sufficient public transport to achieve points under the public transport credit for Green Star Rating Tools for commercial buildings and a future Green Star Tool for residential buildings.	As above
Waste	70. Centralised recycling areas are to be provided in all buildings and 100% of waste bins for public use are to allow for waste separation.	
Wind	71. Wind tunnel modelling and verification of proposed treatments will be carried out at the building design application stage due to the significant exposure of the site to the southerly and westerly winds. Any development proposal for the southern portion of the site should be subjected to a wind tunnel study, carried out in accordance with the procedures outlined in industry recognised guidelines such as the Australasian Wind Engineering Society Quality Assurance Manual.	Wind report to be lodged with each development application /project application
Geotechnical and Environmental Site Remediation	72. Further site investigations and assessments will be undertaken prior to a Remedial Action Plan (RAP) being prepared. The RAP may be prepared in stages that follow the progressive redevelopment of the site and development blocks. The RAP will address a range of known existing site conditions. 73. A Technical Working Group is to be established to oversee the preparation of the RAP. The membership of the Working Group is to be determined by the proponent team and the Barangaroo Taskforce (under its Terms of Reference dated 26 November 2006) or equivalent body. The Terms of Reference of the Technical Working Group are to be consistent with this Statement of Commitments and endorsed by the Barangaroo Taskforce or equivalent body. 74. The RAP is to be submitted by the Working Group to the Barangaroo Taskforce or equivalent body. The	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any development application /project application involving surface disturbance.

Appendix B: Director General's Requirements MP10_0047 & MP10_0048

Director General's Requirements

Section 75F of the *Environmental Planning and Assessment Act 1979*

Application number	MP10_0047 & MP10_0048
Project	MP10_0047 Barangaroo Headland Park & Northern Cove – Early Works MP10_0048 Barangaroo Headland Park & Northern Cove – Main Works
Location	Hickson Road, Barangaroo, Sydney
Proponent	Barangaroo Delivery Authority
Date issued	6 May 2010
Expiry date	If the environmental assessment is not exhibited within 2 years after this date, the applicant must consult further with the Director General in relation to the preparation of the environmental assessment.
Key issues	The Environmental Assessment (EA) must address the following key issues: **1. Relevant EPI's, policies and guidelines** • Planning provisions applying to the site, including permissibility and the provisions of all plans and policies including: o State Environmental Planning Policy (Major Development) 2005; o State Environmental Planning Policy 55 - Remediation of Land; o Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005; o Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005; o NSW State Plan, Sydney Metropolitan Strategy and the draft Sydney City Subregional Strategy; and o An outline of the nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification for any non-compliance. **2. Concept Plan** • The EA shall demonstrate consistency with the terms of approval of Concept Plan MP06_0162 (as amended) and justify any areas of inconsistency. **3. Urban Design and Public Domain (in relation to MP10_0048)** • A Public Domain Plan is to be prepared for the Headland Park and Northern Cove, which is to address: o all planning, accessibility and design issues related to the connectivity of the Headland Park to its surrounding environment, including integration of walking and cycling connections within and to the site; o event management and recreational capacity, including passive and active opportunities; o proposals and options to increase cultural experiences at the Headland Park; o measures to provide for diverse activation of the Headland Park while being sensitive to local community needs; o Crime Prevention Through Environmental Design (CPTED) safety strategies; o heritage conservation and adaptive reuse as part of the urban and landscape design, including management and interpretation; o sustainability program for the Headland Park at design, construction and operations stages; and o compliance with the Disability Discrimination Act. • An event plan of management is to be developed to support the proposal for events in the public domain, which will also need to inform traffic management. • Proposals and options to increase cultural experiences at the Headland Park are to be supported by a local and regional Cultural Needs Analysis.

4. Landscape Design

- The EA is to demonstrate that the final landform shape of the Headland Park has been determined by relevant design principles, rather than an engineering/fill driven outcome. Such principles may include:
  - finished levels on the eastern edge of Headland Park should align with, and not exceed, the levels of adjacent streets and public domain;
  - views over the Headland Park are to be maintained, particularly from adjacent streets and public open spaces;
  - level grade access into the Headland Park is to be maximised;
  - the gradient is to be designed to maximise accessibility and the gradient transition from central parkland to Headland Park is to provide accessible walking and cycle paths, and grading should create a variety of topographic experiences, including maximising useable passive recreation spaces;
  - any structures within the Headland Park (including a possible cultural facility) are to integrate with the landscape design of the public domain to maximise opportunities for activation of the surrounding parkland;
  - accessible paths to all public/cultural facilities within the Headland Park are to be provided from the central parkland (stage 2) area.
- Detailed documentation of the proposed grading and finished levels is to be provided with the Project Applications, including detailed spot levels and multiple sections through the site particularly relating to useable spaces and access points.

<u>Further in relation to MP10_0048</u>

- A detailed landscape design plan is to be prepared for the Headland Park and Northern Cove, incorporating, among other matters:
  - a hierarchy of spaces;
  - detailed levels, edge conditions and pedestrian pathways;
  - materials and plantings (including planting of non invasive plant species);
  - street furniture;
  - lighting;
  - public art;
  - a way finding strategy;
  - an Interpretation Strategy; and
  - signage.

5. Visual Impact and Views

- A visual impact assessment is to be provided of the proposed final design of the Headland Park, including any proposed buildings and structures, when viewed from key vantage points (including, but not limited to, from McMahons Point (Blues Point), Pyrmont, Balmain East, Walsh Bay and Millers Point). Photomontage images are to be prepared to demonstrate the impact of the proposed works.

6. Traffic Management and Accessibility Impacts

- Assess the likely impacts from the proposed works on surrounding areas and residents during the construction, demolition and excavation phases (including the impact on nearby intersections and the need/associated funding for upgrading or road improvement works (if required)), major arterial and local road networks, local public transport (including proposed light rail on Hickson Road), pedestrians and cyclists in the vicinity of the site.
- Assess the cumulative impacts associated with other construction activities on the Barangaroo site.
- Details of anticipated truck movements to and from the site.
- Details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements.
- Details of construction vehicle access, movements and queuing.

- Details of any proposed transportation of waste materials via the Harbour and proposed locations for handling materials.
- Navigation and safety impacts on other water based traffic and ferry commuter services from any barging of contaminated materials, including navigation in and around Darling Island, King Street Wharf, Johnstons Bay and White Bay.
- Impact of shoreline works (particularly the creation of the Northern Cove) on navigation in Sydney Harbour.

Further in relation to MP10_0048

- Justification for the headland car park, including quantum of parking spaces, and its relationship and function with the Barangaroo site, with regard to public transport usage and mode split assumptions.
- Likely traffic impacts on local street network and intersections.
- Pedestrian and cycle accessibility.
- Details on the use and management of the car parking area.
- Potential provision for a water taxi stop.
- Provision for taxis and coaches.
- Potential for integration with light rail along Hickson Road, as announced by the Government in the *Metropolitan Transport Plan*.
- Demonstrate how the entry and exit to the headland car park will not have a detrimental impact upon visual amenity and pedestrian safety.
- Traffic and accessibility impacts and transport management for major events or cultural activities (including pedestrian movements) held at the Headland Park and Northern Cove.

7. Remediation Action Plan (in relation to MP10_0047)

The Environmental Assessment must include a site wide Remediation Action Plan and a detailed Remediation Action Works Plan(s) for the relevant section(s) of the site. The Remediation Action Works Plan(s) must be prepared in accordance with the Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA 1997), the relevant components of other guidelines made or approved under section 105 of the Contaminated Land Management Act 1997 and also include:

- Characterisation of the nature and extent of contaminated material.
- A description of the overall remediation strategy for the site, including the:
  - objectives of the remediation strategy;
  - proposed staging of the strategy; and
  - relationship between the various stages of the strategy.
- Details of the proposed remediation process, including on-site and off-site treatment methodologies and the location, and transportation options, of any off-site treatment facility, and details of contingency processes.
- Details of the proposed remediation management measures, including justification of the remediation criteria to be applied to all or respective parts of the site and proposed disposal or re-use of materials and management of wastewater, including agreements for disposal of trade wastes, including treated water from the contaminated areas.
- Plans of any proposed containment cell(s) for contaminated material, including:
  - demonstration that the design and integrity of the cells would be consistent with best practice standards;
  - demonstration that any material incompatibilities between the cell(s) and material to be stored in the cell(s) have been identified;
  - management procedures to address incompatibility issues must be provided; and
  - demonstration that the cell(s) would adequately contain the materials to be stored without impacting on the surrounding environment.
- Site validation plan.
- Details of compliance with the Contaminated Land Management Act 1997 and remediation to address the current regulation on the site.
- Final landform following remediation and the suitability of fill material.

- On-going management and responsibility of the site following remediation.

The Remediation Action Works Plan(s) must clearly demonstrate that the site will be remediated to a standard commensurate with the final intended land use. The plans must be audited by an EPA Accredited Sites Auditor, and include a site audit statement detailing the findings of the audit.

Proposed remediation criteria must be developed consistently with National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM). Where contaminants are present on the site that are not listed under the NEPM, specific remediation criteria for those contaminants must be derived having regard to relevant NSW standards, national standards, then international standards and justification for the use of any criterion not currently endorsed by the NSW Department of Environment, Climate Change and Water.

The validation of the remediation of the Barangaroo site, including the containment at Headland Park will need to be subject of a Site Audit undertaken by a NSW EPA accredited site auditor.

8. Soil and Water

- Assess impacts on water quality of Sydney Harbour and proposed management, mitigation and monitoring measures.
- Erosion and sediment controls during remediation and excavation.
- Details of water quality monitoring program for Sydney Harbour, with a focus on turbidity and key contaminants.
- Assess the impacts of the proposal on surface and groundwater hydrology and quality.
- Assess the potential impacts on marine vegetation and aquatic ecology.
- Management measures for any barging of any excavated or contaminated material.
- Stormwater management and strategies during construction.
- Assess impacts on estuarine circulation, estuarine water quality and aquatic ecology of land formation works (including impacts on aquatic vegetation from direct smothering and any changes that may result from altered hydrological regimes of surrounding waters and bays). Any modification of estuarine foreshores (including the incorporation of measures to improve the habitat value of newly created waters (such as environmentally friendly seawalls) should consider *Environmentally Friendly Seawalls - A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries* (DECC, 2009).
- Assess the potential impacts on aquatic habitat from altered hydrological regimes, contaminated sediments and potential acid sulphate soils from dredging activities whilst constructing the Northern Cove.
- The discharge of stormwater or other water should be assessed by comparison to the relevant water quality objectives and environmental values for Sydney Harbour estuarine waters, see: http://www.environment.nsw.gov.au/ieo/index.htm for NSW Water Quality Objectives; and refer to related Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000): http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality.
- Consideration of the collection, treatment and management of contaminated surface and groundwater across the site. No contaminated or treated site waters (surface, collected groundwater, or contaminated construction waters) are permitted to enter Sydney Harbour and should be discharged under a trade waste agreement with Sydney Water.

9. Waste Management

- Provide details of the quantity and type of liquid and non-liquid waste generated, handled, processed or disposed of on-site. Waste must be classified according to the DECCW's Waste Classification Guidelines 2008.
- Provide details of the quantity, type and specifications for all output products proposed to be produced. The description should include the physical, chemical and biological characteristics

(including contaminant concentrations) of those output products as well as relevant accredited standards against which the products would comply.

- Provide details of intended (or potential) end uses for output products and the relevant product standards used against which those products would be assessed.
- Provide details of the layout, the treatment process and the environmental controls of the proposal.
- Provide details of liquid waste and non-liquid waste management, including:
  - the transportation, assessment and handling of waste arriving at or generated at the site;
  - any stockpiling of wastes or recovered materials at the site;
  - any waste processing related to the proposal, including reuse, recycling, reprocessing or treatment both on- and off-site;
  - the method for disposing of all wastes or recovered materials;
  - the emissions arising from the handling, storage, processing and reprocessing of waste; and
  - the proposed controls for managing the environmental impacts of these activities.
- Provide details of spoil disposal (if applicable) with particular attention to:
  - the quantity of spoil material likely to be generated;
  - proposed strategies for the handling, stockpiling, reuse/recycling and disposal of spoil;
  - the need to maximise reuse of spoil material in the construction industry;
  - identification of the history of spoil material and whether there is any likelihood of contaminated material, and if so, measures for the management of any contaminated material; and
  - designation of transportation routes for transport of spoil.
- Provide details of procedures for the assessment, handling, storage, transport and disposal of all hazardous and dangerous materials used, stored, processed or disposed of, in addition to the requirements for liquid and non-liquid wastes.
- Provide details of the type and quantity of any chemical substances to be used or stored and describe arrangements for their safe use and storage.
- In documenting or describing the composition of output products and/or wastes generated, reference should be made to DECCW's Waste Classification Guidelines 2008.

10. Air, Noise and Odour Impacts

- Identify potential air quality, noise and odour impacts and appropriate mitigation measures.
- An assessment of odour from the excavation, transport and storage of contaminated sediments.
- Details of an air quality monitoring program, including the identification of air quality criteria.
- In particular the following must be addressed:

Air and Odour

The Environmental Assessment must include an Air Quality Impact Assessment that is prepared strictly in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales 2005*, available at: http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf.

The Air Quality Impact Assessment must also make appropriate reference to the *Assessment and Management of Odour from Stationary Sources in NSW: Technical Framework 2006* and *Assessment and Management of Odour from Stationary Sources in NSW: Technical Notes 2006*, available at: http://www.environment.nsw.gov.au/air/odour.htm.

The key air quality issues for the proposal will depend on the methods used to manage and remediate the contaminated material. Potential matters that must be covered in the Air Quality Impact Assessment include, where applicable:

- the identification of the pollutants of concern, including individual toxic air pollutants, dust and

odours;
- the identification and assessment of all relevant fugitive and point source emissions;
- appropriate coverage of all aspects of the remediation, including the excavation, storage, transport and treatment of contaminated material; and
- proposed air quality management and monitoring procedures during remediation.

The Air Quality Impact Assessment must consider the requirements of the *Protection of the Environment Operations (Clean Air) Regulation 2002*.

Noise

The Environmental Assessment should include an assessment of noise and vibration impacts, prepared in consultation with DECCW. All feasible and reasonable noise impact mitigation measures should be implemented. The assessment should be prepared in accordance with the NSW government's *Interim Construction Noise Guideline*, *Industrial Noise Policy* and Application Notes, *Environmental Criteria for Road Traffic Noise* and *Assessing Vibration: A Technical Guide*, as appropriate, available at http://www.environment.nsw.gov.au/noise/.

11. Health Impacts

- Assessment of the health implications of the projects (including extraction of sediments, off-site transport and treatment as well as disposal of sediments), during and following remediation, including details of human exposure scenarios and demonstration that the projects will not have unacceptable acute or chronic health effects.

12. Climate Change and Sea Level Rise

- An assessment of the risks associated with sea level rise on the proposal as set out in the *draft NSW Coastal Planning Guideline: Adapting to Sea Level Rise*.

13. Heritage

- An assessment of the likely impacts of the proposal on heritage and archaeological items and proposed conservation – including the MWS&DB Sewage Pumping Station, existing sandstone seawall and Sydney Harbour Control Tower – and mitigation measures.

14. Environmental, Construction and Site Management Plan

The EA shall provide an Environmental and Construction Management Plan for the proposed works, and is to include:

- Community consultation, notification and complaints handling;
- Impacts of construction on adjoining development and proposed measures to mitigate construction impacts;
- Noise and vibration impacts on and off site;
- Air quality impacts on the neighbourhood;
- Odour impacts;
- Visual impacts, with particular regard to the Temporary Cruise Passenger Terminal;
- Water quality management for the site; and
- Waste and chemical management.

15. Infrastructure and Services Provision

- Detail the existing infrastructure and services on site and outline what infrastructure and services will be decommissioned.
- Outline proposed infrastructure and services, including sustainability infrastructure and wastewater treatment facility and identify possible impacts.
- Provide information on the required water and wastewater services and any augmentation that may be required for the proposed development.
- Detail measures to mitigate the impacts of the proposal on any remaining infrastructure items,

	including proposed relocation. • Provide an *Integrated Water Management Plan*, which should include any proposed alternative water supply, proposed end uses of potable and non-potable water, demonstration of water sensitive urban design and water conservation measures. **16. Temporary Structures** • Detail the proposed temporary structures on site, including sheds, compounds, hoardings and identify possible visual and amenity impacts. • Detail measures to mitigate the impacts of the temporary structures on roads, streets and public domain areas. **17. Staging** Details regarding the staging of the proposed development. **18. Ecologically Sustainable Development (ESD)** Identify how the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development including water sensitive urban design measures, water re-use, energy efficiency, energy minimisation/generation, recycling and waste disposal. **19. Consultation** Undertake an appropriate and justified level of consultation in accordance with the Department's Major Project Community Consultation Guidelines October 2007.
Deemed refusal period	60 days