APPENDIX 30

SPS0014 Conservation Management Plan

Conybeare Morrison

Barangaroo Sewage Pumping Station SPS0014
Conservation Management Plan

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
10101

Conybeare Morrison

Barangaroo Sewage Pumping Station SPS0014
Conservation Management Plan

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
10101

Revision	Date	Description	By	Chk	App
01	Oct 10	Draft Report	BV/VO	VO	

EXECUTIVE SUMMARY

Sewage Pumping Station 14 (SPS 14) is one of 14 remaining above-ground sewage pumping stations built by the Department of Public Works by 1905 for the Water Drainage and Sewerage Board. The above-ground superstructure was built in the Federation Queen Anne style using high quality materials that disguise the function of the building in a domestic idiom. SPS 14 has been found to be of Local heritage significance.

Sydney Water owns and operates SPS 14, but plans to decommission it when new infrastructure is completed to take over this function. Sydney Water has listed SPS 14 on its Section 170 Register under the *NSW Heritage Act, 1977*. SPS 14 lies on the site proposed to be developed into the Barangaroo Headland Park. This proposal includes the restoration of the profile of the northern headland of Millers Point. SPS 14 is the only heritage item on the flat open deck of the former Darling Harbour Wharf No. 3. The above-ground superstructure of SPS 14 has been determined to be relocated within the Barangaroo Headland Park for a new use.

This Conservation Management Plan provides advice on the heritage significance and management of SPS 14 to guide any relocation of the building and its long-term management by the Barangaroo Delivery Authority.

This page has been left blank intentionally

CONTENTS

Appendies

1.0 Introduction

1.1 Context

This Conservation Management Plan (CMP) for the Sewage Pumping Station SPS 14 was commissioned by the Barangaroo Delivery Authority (Barangaroo DA) on 5 October 2010. The report is to accompany the Development Application for the Barangaroo Headland Park Main Works which will be submitted by the Barangaroo Delivery Authority.

1.2 Objectives

The main objective of this report is to provide guidelines for the conservation, re-use, interpretation and management of the Sewage Pumping Station SPS 14, to ensure that the heritage values of the item are maintained and, where appropriate, enhanced.

The Sewage Pumping Station SPS 14 is currently included on the following heritage listings:

- Sydney Water S170 Register
- Sydney Ports S170 Register
- Sydney LEP 2005.

1.3 Site Identification

The Sewage Pumping Station identified as SPS 14 by Sydney Water, is located within the open deck of the former Darling Harbour Wharf No. 3, at the northern end of the designated Barangaroo Headland Park (previously known as Millers Point).

Fig. 1.1: Sewage Pump Station SPS 14 is circled in the centre of this aerial photograph of Millers Point. (Source: Nearmap)

The address of SPS 14 has been variously identified by Sydney Water as 'Crescent Road', 'Towns Place' and 'Dalgety road', Millers Point, as more of Millers Point was cut back during the Twentieth Century for the construction of docks, losing several streets in the process.

1.4 Methodology and Structure

This Conservation Management Plan has been prepared in accordance with guidelines outlined in the *Australia ICOMOS Charter for Places of Cultural Significance 1999*, known as *The Burra Charter,* the *Guidelines on Conservation Management Documents* published by the Heritage Branch of NSW Department of Planning, and *The Conservation Plan* (sixth edition) 2004 by James Semple Kerr.

The Burra Charter provides definitions for terms used in heritage conservation and proposes conservation processes and principles for the conservation of an item. The *NSW Heritage Manual* explains and promotes the standardisation of heritage investigation, assessment and management practices in NSW. The key methodology of both documents is to identify the nature of any heritage significance as a basis for making decisions which will affect the future of the place. *The Conservation Plan* provides guidance on substance, structure and methodology for the writing of effective site-specific conservation plans.

The initial sections of the CMP provide an analysis of the site and the building, based on documentary and physical evidence. This analysis includes a historical summary of the place and the item, together with a descriptive analysis of the building's components and elements.

A grading of significant elements and spaces has been provided to identify their differing levels of contribution to the significance of SPS 14.

The later sections address various management issues, and the role and objectives of the relevant heritage authorities. They provide a framework for the formulation of conservation policies and implementation guidelines.

1.5 Terminology

The terminology used in this report, where referring to conservation processes and practices, adopts the definitions as presented in Article 1 of *The Burra Charter*, and is as follows:

Place means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.
Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the *place* itself, its *fabric, setting, use, associations, meanings, records, related places* and *related objects*. Places may have a range of values for different individuals or groups.
Fabric means all the physical material of the *place* including components, fixtures, contents, and objects.
Conservation means all the processes of looking after a *place* so as to retain its *cultural significance*.
Maintenance means the continuous protective care of the *fabric* and *setting* of a *place*, and is to be distinguished from repair. Repair involves *restoration* or *reconstruction*.
Preservation means maintaining the *fabric* of a *place* in its existing state and retarding deterioration.
Restoration means returning the existing *fabric* of a *place* to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.
Reconstruction means returning a *place* to a known earlier state and is distinguished from *restoration* by the introduction of new material into the *fabric*.

Adaptation means modifying a *place* to suit the existing *use* or a proposed use.
Use means the functions of a *place*, as well as the activities and practices that may occur at the place.
Compatible use means a *use* which respects the *cultural significance* of a *place*. Such a use involves no, or minimal, impact on cultural significance.
Setting means the area around a *place*, which may include the visual catchment.
Related place means a *place* that contributes to the *cultural significance* of another place.
Related object means an object that contributes to the *cultural significance* of a *place* but is not at the place.
Associations mean the special connections that exist between people and a *place*.
Meanings denote what a *place* signifies, indicates, evokes or expresses.
Interpretation means all the ways of presenting the *cultural significance* of a *place*.

1.6 Author Identification, Acknowledgements and Limitations

This report was prepared by Verena Ong and Brad Vale, Senior Heritage Specialists, and reviewed by Judith Rintoul, Heritage Associate Director, of Conybeare Morrison International.

Due to the tight time frame for the completion of this report (1.5 weeks), documentary research was performed via desktop and from secondary sources. Physical evidence was based on a site visit in August 2010 carried out by the authors and an inspection of the Sewage Pumping Station carried out by Verena Ong and Judith Rintoul on 4th March 2010 (undertaken for the preparation of another report[1]). That inspection was limited to visual observation of the ground level exterior and interior only, and no access was available to the lower level (the pits) of the station.

The report incorporated findings and recommendations made in the report *Barangaroo Sewage Pumping Station SPS14 Conservation Options – Heritage Impact Statement,* prepared by Conybeare Morrison International in June 2010 for the Barangaroo Delivery Authority. The options and recommended relocation methodology of the SPS superstructure in that report was by Heritage Engineer, Hari Gohil of Shreeji Consultants P/L.

The report generally addresses the designated Headland Park and Northern Cove site only and does not address the Central Public Domain or the area of the site further to the south.

1.7 Documentary and Photographic Sources

In preparing this report, secondary source and research material was used. It included reports for the subject site and subject item, historic plans and images — refer to the 'References' section.

All contemporary photographs taken for the purposes of this report were by Conybeare Morrison International unless stated otherwise.

The original and later modification drawings of the SPS 14 are from the repository of Sydney Water.

[1] *Barangaroo Sewage Pumping Station SPS Conservation Options – Heritage Impact Statement,* by Conybeare Morrison & Associates, June 2010.

This page has been left blank deliberately.

2.0 Documentary Evidence

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.

2.1 Formation of the Barangaroo Site

Barangaroo is part of the Sydney Basin, and consists of a rocky outcrop of quartz-rich sandstone that was prominent in Sydney Harbour. This was known in the Nineteenth Century as Millers Point. 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 slowly eroded through several phases of geological 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 the 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 the Wangal and Gadigal clans.

2.2 Aboriginal Occupation: Pre and Post-European Contacts

The State Heritage Inventory "Millers Point and Dawes Point Village Precinct" summarises the aboriginal occupation as follows:[2]

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.

[2] State Heritage Register item number: 01682.

2.3 Colonial Period: 1788 –1854

The first Europeans to settle in Australia found Farm Cove to be the most suitable site initially serving as a port, potential farm and penal settlement. The drowned valleys were useful harbours for jetties and wharves; a creek provided fresh water. The prominent hills were soon occupied by the settlement. The military used the hills for defence works, signaling points; and 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 was 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 Dawes Point 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, recognising 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 the people living in the area.

Fig. 2.1: 1788 plan with Millers Point on the left. (Source: McCormick, p36)

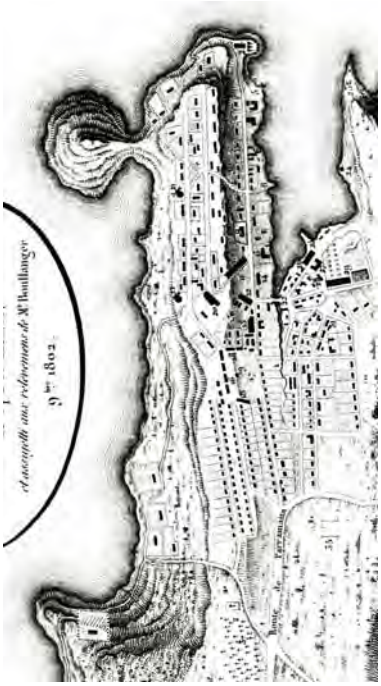


Fig. 2.2: 1802 plan with a stylised outline of Millers Point but indicating the nature of the steep topography.
(Source: McCormick, p96)

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"
(Source: Evans, inside cover frontispiece)

Fig. 2.4: 1822 plan indicating a shoal of rocks around Millers Point.
(Source: McCormick, p267)

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.
(Source: McCormick, p197)

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.

(Source: McCormick, p207)

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

(Source: Evans, p21, Plate 12)

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) (Source: Kelly & Crocker, p18)

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. (Source: Kelly & Crocker, p21)

2.4 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 industrialised nexus for the preparation and export of bulk primary produce, and was recognised as 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 that the port workers 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 garden suburbs designed to be free of the pollution and disease associated with Millers Point. A centrally located gas works on Millers Point intensified the areas's industrial quality.

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. (Source: State Library of NSW)

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 descending on the left.
(Source: State Library of NSW)

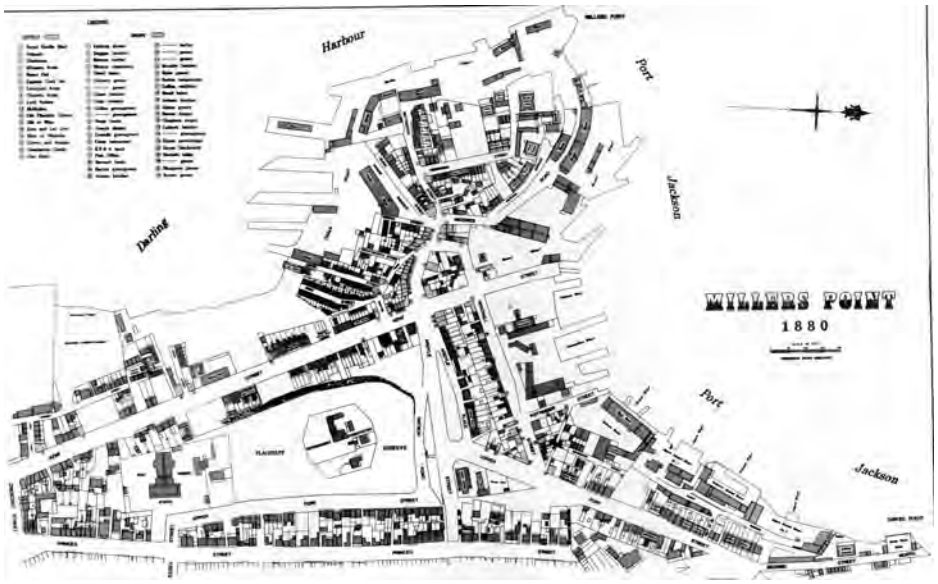


Fig. 2.12: 1880 map of Millers Point indicating the extent of land infill and the development of finger wharves. (Source: Fitzgerald & Keating, p56)

2.5 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 maritime infrastructure was mostly demolished. A consistent development of finger wharves developed in 1900–1910 to increase the efficiency of trade with large steamships and to minimise the potential for disease carried by vermin.

To achieve this renewed port, massive excavation and filling of the sloping land of Millers Point was undertaken to achieve roads on level contours to service 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 distinctive form of the isolated knoll of 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 workers 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. The southern approach to the bridge made a bold visual barrier and provided a contrasting sense of scale.

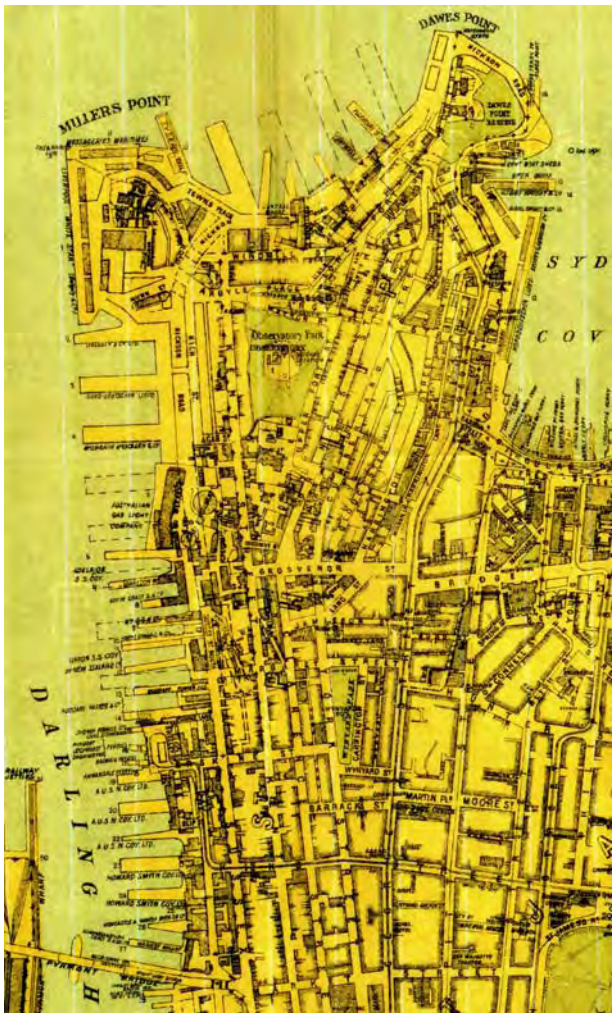


Fig. 2.13: c1913 map shows the extent of finger wharf development and the rectangular infill of Millers Point. (Source: State Library of NSW)

Fig. 2.14: c1904 image of Millers Point looking towards the south west. (Source: State Library of NSW)

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. (Source: Fitzgerald & Keating, p106)

2.6 Reclamation Period: 1961 – 1988

Postwar technological change brought the opportunity to increase the efficiency of the docks by replacing the finger wharves with large open docks suitable for shipping containers and roll-on roll-off transfer of cargoes. Approximately half of the 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 in 1977 from the former foot of Millers Point northern cliff to a site further east facing Walsh Bay. Soldiers Point was subsumed into the expanded docks; and only one inlet remained. Portal framed warehouses were constructed around SPS 14. SPS 14 remained in use and was protected by bollards from the impacts of nearby vehicles.

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. (Source: Fitzgerald & Keating, P106)

2.7 Period of New Uses: 1989 to the Present

The shift to a containerisation function 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 the dock. Infrastructure expanded at other ports in Botany Bay and Port Kembla during this period, as the limitations 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 framed storage sheds were removed in preparation for redevelopment and large outdoor events such as World Youth Day.

2.8 Development of SPS 14

In the early decades of the colony at Sydney, sewage was commonly deposited into streams, causing particularly foul smells during dry weather, and also spreading disease. Capital works begun by the commissioners for the Sydney City Council in the 1850s sought to improve this situation by piping sewage directly into Sydney Harbour. A series of sub-ground sewers lined with brick were constructed down Pitt, Castlereagh, Elizabeth, Phillip and Macquarie Streets, leading to an outfall at Bennelong Point. The Rocks was served by sewers constructed along Argyle Street as far as Gloucester Street, along Lower George street, Harrington Street and Gloucester Street, leading to the Queens Wharf Sewer in circular Quay, near the mouth of the Tank Stream. Millers Point was not served by these sewers, but the Argyle Street sewer was the closest. Sydney Harbour was becoming noticeably fouled within several years and outbreaks of typhoid provoked agitation in the community for a solution.

The NSW Colonial Government set up the Sewage and Health Board in 1873 to prepare a scheme for works to intercept sewage draining into Sydney Harbour, and divert it further away. The Board developed several plans for the city, including a scheme for the northern slopes of the city whereby a new sewer main would fall from the ridge of the city centre to an outfall at Bondi. This scheme was constructed by the Department of Public Works in the 1880s and transferred to the Board of Water Supply and Sewerage in December 1889.

The Bondi Outfall Sewer, as finished in 1889, could not serve the nearby areas at a lower level than the main pipe runs. In order to provide sewerage services to low lying areas of the city, the Government began to construct a series of pumping stations around the Harbour foreshore to pump sewage up through rising mains to a point at which it could gravity fall to the Bondi Outfall. The first such pumping station operated at Double Bay from 1898. A comprehensive network of pumping stations from Rushcutters Bay to Balmain and Annandale was completed by the Department of Public Works by 1905 and transferred to the Board.

SPS 14 was originally powered by electricity from a central controlling station at Ultimo. The switchboard at Ultimo had a panel for each pumping station, containing the ammeter, automatic circuit breaker, well indicator and motor starter. When a rising level of sewage in a station's well activated a float located in a vertical pipe in that well, a switch would be activated sending a signal to the controlling station that the well was full. The attendant then started the pumping motors using a switch. When the low water level was reached in the well, another signal was automatically sent to the controlling station, and the attendant would stop the pumping motor. The attendant at the controlling station could manage the operation of 18 pumping stations remotely. The only regular daily visit to each of these pumping stations was undertaken by the men who inspected and oiled the machinery.

The early pumps were the plunger type, but sand and foreign material in sewers had an abrasive effect on the pumps causing frequent breakdowns. Locally designed centrifugal pumps were installed in each of the pumping station in 1910. These were more effective because their rotating impeller blades had replaceable mild steel shoes. The pumping stations built after 1905 were constructed by the Board itself. Over the first half of the twentieth Century, the sewers constructed in the 1850s to drain into Sydney Harbour came to be used exclusively for storm water.

Between 1980 and 1982, amplification works were carried out to the station. The works included modifications to the substructure including the piping arrangement, steelwork and valve chamber. The modifications to the superstructure included the provision of two roller doors replacing the old door and window, a new crane on the steel beams, a safety chain to the top of each ladder, toe boards to all platforms, the relocation of toilet facilities from outside the pumping station to the inside, and a wash basin moved from the machinery well to a new location adjacent to the toilet facilities. (Refer to Appendix A, drawing SPS 14/1, File No. 37/10142.) The two pumps have recently been replaced and upgraded.

In 2008, the timber framed windows were modified with the installation of wired glazing for safety reasons in anticipation of the World Youth Day event that took place at Barangaroo.

SPS 14 is currently still in use. There are two catchments draining to SPS 14: the Walsh Bay Catchment which is the lower level catchment, and the High Street Catchment which is essentially located within Millers Point.[3]

2.9 Existing Documentation

A set of drawings exist titled 'SPS 14 Towns Place, Millers Point — Alterations to Existing Structure' that were prepared in 1980, apparently using the original construction drawings as a base. The drawings show a level of architectural detail that is not relevant to the alterations proposed at that time, and the hand drawing style is typical of the Federation period. These drawings demonstrate the original pumping structure and a number of architectural details that are no longer present. We have therefore assumed that these drawings were based on the original drawings. These drawings are considered a source of information to guide the reconstruction of missing elements including the original roof and window details.

Refer to Appendix A.

[3] Warren Smith & Partners, "Proposed Headland Park, Barangaroo – Feasibility Options for Sydney Water Sewerage Pumping Station SPS0014", March 2010.

3.0 Physical Evidence

3.1 Function

SPS 14 is a low-level sewage pumping station still in operation that was designed to pump sewage from Millers Point up to Argyle Street, to meet the Northern Main Branch, whence it would fall by gravity to the Bondi Treatment Works and Ocean Outfall. SPS 14 comprises a single storey superstructure located over an open rectangular machinery well (dry well) with pumping installations set approximately 7.5m below ground level, which is 4.75m below sea level. The above-ground superstructure is a small solid building approximately 6.53m by 5.51m in plan with 230mm brickwork having buttresses to ensure a load-bearing structure capable of supporting a crane used to lift heavy equipment in and out of the wells beneath. Adjoining the dry machinery well on its northern side, are two wet wells and beyond these, is an inlet chamber (penstock chamber) that is semi-circular in plan. Access to the pits could not be gained by the authors of this report because they were still in operation.

3.2 Description

SPS 14 is located within the open deck of the former Darling Harbour Wharf No. 3, surrounded by a protective steel mesh fence and guardrails. The nearest roads are Dalgety Road and Towns Place, Millers Point. Typical of the low-level sewage pumping station phase begun in 1890s, SPS 14 is located close to the Harbour foreshore. The site is flat and paved with bitumen. There are two sets of external access hatches at ground level on the northern side of the building that provide access to the original wet well and machinery well. Other more recent exposed pumping equipment and access panels are placed within the fencing on the easern and western sides of the building.

The superstructure is a well proportioned structure with Federation Queen Anne period architectural details. (See Fig 3.3) The face bricks are best quality machine-pressed red bricks laid in English bond. The high level of dimensional consistency of the bricks allowed for particularly slim mortar joints. (See Fig 3.12) A red pointing was applied to diminish the visibility of the mortar. The mortar joints in the upper part of the wall protected by the eaves are almost black, while the lower joints are a cleaner white colour where the pointing has weathered away. The black colour is likely to be air-borne industrial pollution that has been protected from rain.

Each opening has a sandstone lintel and each window has a sandstone sill. A further block of sandstone is located higher than the sills in the east and west facades to distribute the load of the steel beam that supports the crane. The buttresses have smooth-faced sandstone that articulates the Gothic Revival origins of the Arts and crafts movement. The other sandstone blocks have a rock face. No two blocks of sandstone are placed next to each other; the northern façade has an artful pattern of buttress caps and lintels touching at their corners only. (See Fig 3.2) The load-bearing walls support steel lifting beams set under the roof that can bear 2 tonnes. The front (north) facade has two more recent roller-shuttered door openings; the east and south facades each have two window openings while the west façade has one window; the northern window opening on the western façade has been bricked up, but the lintel remains. (See Fig 3.4) Several dark marks on the vertical centre line of the northern façade demonstrate the location of the original external crane that was fixed on a pedestal (since removed) between the two doorways. This crane was located above the two wet wells. A similar crane remains at SPS 3 at Booth Street, Annandale. The windows have fixed timber-framed glazing. The existing timber framing and the internal window architraves appear to be original.

The roof is framed with timber and shaped as a hipped roof with gablet vents facing east and west. The rafters are exposed under the eaves and support quadrant guttering. The eave soffits are lined with timber boards and painted white. The guttering and downpipes were replaced in 1980 to match the original profiles. While the downpipes are 'spiraltube', typical of the 1980s, the astragals that fix the downpipes to a timber block attached to the wall have a decorative trefoil that appears to be original. (See Fig 3.12) The eaves are penetrated by two metal vent pipes. The effective eave width, including the guttering, is approximately 400mm and is significant because it protects the walls laid with lime mortar and no cavity.

The interior walls of the superstructure are plastered and painted. From the fine texture of the wall, it is likely to be original, and as such, would consist of several layers of progressively fine renders. The interior architraves are original and are finished with profiles typical of domestic work in the Federation period. The ceiling is lined with timber boards and a timber cavetto-shaped cornice. (See Fig 3.6) An access panel makes the roof space accessible.

The machine pit immediately beneath the superstructure is constructed of concrete lining within excavated sandstone bedrock. The entrance landing and the pit has a metal floor. Access down to the pit is via a locked steel ladder and platform system. (See Fig 3.10) There is a toilet cubicle and wash basin at the left hand side of the door opening. Around the peripheral walls accessible from the metal floor are electrical meters and monitoring panels. (See Figs. 3.1 to 3.10, and Appendix A drawings.)

Fig. 3.1: View of SPS 14 from Dalgety Road.

Fig. 3.2: Front (north) elevation of SPS 14.

Fig. 3.3: View of SPS 14 from south-east

Fig. 3.4: View of SPS 14 from north-west.

Fig. 3.5: Interior view of superstructure towards west wall.

Fig. 3.6: Interior view of superstructure towards south wall.

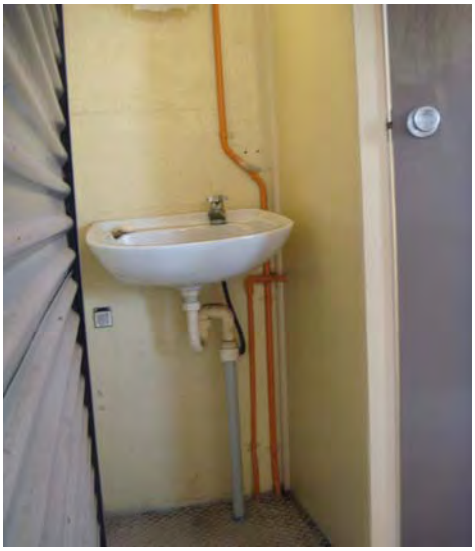


Fig. 3.7: Interior view towards east wall showing hand basin and toilet cubicle.

Fig. 3.8: View from entry door towards access point to pit.

Fig. 3.9: Steel ladder and platform to pit below.

Fig. 3.10: View down to SPS 14 pit from entry platform level.

Fig. 3.11: The mark behind the light fitting is likely to be the remains of the original external crane. The changes to the brickwork at the openings, and the identifying '14' signage painted on the top left

Fig. 3.12: Delaminating stone capping on a buttress.

Fig. 3.13: Cracked stone sill and damaged glass

Fig. 3.14: Cracks in brickwork joints, evidence of inappropriate re-pointing with cement.

Fig. 3.15: Missing mortar at brickwork joints.

Fig. 3.16: Service penetrations through brickwork and weeds at base of walls.

3.3 Alterations

A number of minor alterations have been made to the superstructure building over the last century. The most prominent change to the building is the replacement of slates with dark terra cotta roofing tiles in 1980. The terra cotta finials above the gablets where removed at this time and replaced with a conventional ridge capping. As stated above, one timber-framed window was removed from the west façade, and the opening bricked up to match the existing brickwork.

The Federation Queen Anne glazing bars have been removed from the top panel of all the remaining windows, leaving it as a single panel. This change may have occurred in 1980, and further change to install wired glazing in the windows took place in 2008 in preparation for World Youth Day event held at Barangaroo. There is new mortar around the bricks by the vertical edges of the two doorways, indicating that some remodelling has occurred, possibly widening the openings by a small amount. (See Fig 3.11) The actual doorway widths and nibs appear much the same as the original drawings.

3.4 Condition

Generally, the building structure appears to be in sound condition. Externally, the sandstone elements have weathered to varying degrees, the weathering buttress caps are the most affected and showing signs of delaminating. (See Fig 3.12) This spalling is commonly caused by water-borne salts being absorbed by the stone, and drawn to the exposed parts of the stone, where the water evaporates, leaving the salts behind. Some of the lime mortar has eroded at the lower levels of the wall. In several places, the gap has been replaced with cement, which may exacerbate the rise of salts through the wall. (See Fig 3.14)

The sill to the northern window on the east façade has a through crack. (See Fig 3.13) Cracks were observed at the base of the pier on the north elevation and above and below the north window on the east elevation. These cracks occur through the mortar joints in the brickwork. The brickwork mortar joints have weathered and are missing in some areas. The cement mortar patching is likely to be harder than the bricks and force any nearby water-borne salts to be deposited in the outer layer of the bricks rather than the mortar, which would be better conservation practice. There are some cracks in the brickwork, and some brick edges apparently damaged by impacts. (Refer to Appendix C: Shreeji's report.) Two panes of window glass have been damaged by impacts, but these safety glass panes are not original glass. There are weeds growing from brickwork joints and base of walls. (See Figs. 3.11 to 3.16.)

Internally, the superstructure and pit appear to be well maintained. All painted surfaces are in good condition.

This page has been left blank intentionally.

4.0 Assessment of Heritage Significance

4.1 Analysis of Historical and Physical Evidence

The following historical outline for the Sewage Pumping Station SPS 14 is adopted from State Heritage Inventory No.2423582:

The Substation in Dalgety Road was constructed c.1900 by the Department of Public Works. Commissioned in 1904, SPS 14 was one of twenty low level sewage pumping stations to serve the newly installed Bondi Ocean Outfall Sewer which collectively ended the discharge of raw sewage into Sydney Harbour from the low lying areas around the city. Constructed as a conventional low level sewage pumping station, the single storey, simply proportioned small scale building with Queen Anne detailing was well constructed over a rectangular substructure divided into a dry machinery well with two wet wells and an adjacent semi-circular inlet chamber. (Source: SHI 2423582)

Between 1980 and 1982, amplification works were carried out to the station. The works included modifications to the substructure including the piping arrangement, steelwork and valve chamber. The modifications to the superstructure included the provision of two roller doors replacing the old door and window, new supporting steel beams, safety chain to the top of each ladder, toe boards to all platforms, relocation of toilet facilities from outside the pumping station to the inside, a wash basin moved from the machinery well to a new location adjacent to the toilet facilities. (Refer to Appendix A, drawing SPS 14/1, File No. 37/10142.) The two pumps have recently been replaced and upgraded.

In 2008, the timber framed windows were modified in anticipation of the World Youth Day event that took place at Barangaroo.

SPS 14 is currently still in use. There are two catchments draining to SPS 14: the Walsh Bay Catchment which is the lower level catchment, and the High Street Catchment which is essentially located within Millers Point.[4]

4.2 Stylistic Context

The superstructure of SPS 14 is a well proportioned small building designed in the Federation Queen Anne style and completed by the Department of Public Works by 1904. This style had been popular for a decade for houses in Australia. By the turn of the Twentieth Century, similar Federation Queen Anne and Federation Arts and Crafts styles were commonly used by NSW government agencies in the construction of a wide range of small non-residential buildings, such as schools, shelters at tram stops and railway stations. The use of a domestic style for the early pumping stations gave these utilities a familiar and calm appearance, which may have attracted less public attention than a more overt industrial approach.

The Federation Queen Anne style used Arts and Crafts principles of honest expression of construction, use of 'natural' or simple materials, and a celebration of the work of each craft, and then added some stylistic flourishes. In this situation, the original multi-paned toplights of the windows make the building distinct from being in the Arts and Crafts style. Typical Arts and Crafts elements of the building common to both styles include red face bricks laid in English bond, the rock-faced sandstone elements, the trefoils on the astragals around the downpipes, the hipped roof with gablet vents and the exposed rafters.

[4] Warren Smith & Partners, "Proposed Headland Park, Barangaroo – Feasibility Options for Sydney Water Sewerage Pumping Station SPS0014", March 2010.

4.3 Comparative Analysis

SPS 14 is one of the original 19 sewage pumping stations that were built by the Department of Public Works by 1905 for the Board of Water Supply and Sewerage. Of these, SPS 1 in William Henry Street is likely to be the most significant because it was the controlling station, and as such is the largest and most complex of the group. Two sewage pumping stations are listed on the State Heritage register, namely SPS 1 and SPS 3 at Booth Street, Annandale. SPS 3 retains its original external crane and its timber gates, giving it a higher level of significance than other very similar sewage pumping stations.[5] Otherwise, SPS 3 is very similar to SPS 14 at Millers Point in terms of function, scale and architectural detailing.

Fourteen of the original 19 sewage pumping stations are listed on the State Heritage Inventory as items on the Sydney Water Section 170 Register. These items are managed in a similar manner to local heritage items. Of the five that are not listed, four were constructed as underground stations and have perhaps not attracted the interest of the writers of heritage studies, and the fifth one built in John Street, Pyrmont appears to have been demolished.

The remaining 14 above-ground sewage pumping stations from the first group by the Department of Public Works are a remarkable set of similar small public utility buildings constructed to a very high standard. SPS 14 is a representative member of this group. It was controlled from SPS 1 and has the same function and much the same scale, materials and architectural detailing as the other thirteen above-ground sewage pumping stations. Interestingly, SPS 18 at Rushcutters Bay is the only pumping station in this group to retain its slate roof and terra cotta finials.

4.4 Basis of Cultural Significance Assessment

This assessment of heritage significance is based on the methodology and guidelines set down by the Heritage Branch of the Department of Planning, and based on the standard values (criteria) that may arise from the history, construction and use of the building and its site, in addition to any levels of community esteem held by recognisable groups towards the site.

'Heritage significance', 'cultural significance' and 'cultural value' are all terms that may be used to describe the value or importance of an item in our society. This value may be inherent in the fabric of the item, its setting and its relationship to other items, the response that the item raises among those people who value it now, and in the historical records that enable us to understand it in its context. An assessment about what is significant about a place or an item is not necessarily static; significance may increase with deeper historical research, or as items become more rare or endangered, or are found to illustrate aspects of the past that are seen with new value.

Determining cultural value is the basis of all planning for places of historical value. Determination of significance permits informed decisions for future planning that ensures that the expressions of significance are retained, enhanced, or al least minimally impacted upon. A clear understanding of the nature and degree of significance will determine the parameters for flexibility of future planning and development.

[5] SPS 14 used to have a similar external crane made of wrought steel between its two doorways, but only a mark on the external wall remains.

The historical analysis of a place or item provides the most important context for assessing heritage significance. This significance is developed by applying standard evaluation criteria in the NSW Heritage Manual that are compatible with the criteria used by the Australian Heritage Commission (now Australian Heritage Council) and with those values embodied in *The Burra Charter*.

4.4.1 Methodology for Assessing Significance

The evaluation criteria for the assessment of cultural significance have been developed following the NSW Heritage Council *Guidelines for Assessing Heritage Significance* (2001). State heritage significance, in relation to a place, building, work, relic, movable object or precinct, means significance to the state in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic vale of the item (s4A[1], *NSW Heritage Act, 1977*). An item will be considered to be of State (or Local) heritage significance if, in the opinion of the Heritage Council of NSW, it meets one or more of the following criteria relevant to the State or local area:

NATURE SIGNIFICANCE CRITIA	
Criterion (A)	An item is important in the course, or pattern, of NSW's cultural or natural history (Historical value);
Criterion (B)	An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (Historical value);
Criterion (C)	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or Technical/Research achievement in NSW (Aesthetic value);
Criterion (D)	An item has strong or special association with a particular community or cultural group in NSW (Social value);
Criterion (E)	An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (Technological / Research value);
Criterion (F)	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (Rarity);
Criteria (G)	An item is important in demonstrating the principal characteristics of a class of NSW's Cultural or natural places; or Cultural or natural environments. (Representativeness)
COMPARATIVE DEGREES OF SIGNIFICANCE CRITERIA	
State	Of significance to the State of New South Wales
Local	Of significance to the Local Government area

Criterion A **An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);**

SPS 14 is one of a set of utility buildings constructed to provide sewerage services to low-lying Harbourside suburbs in the period 1890–1905. These pumping stations and the associated Bondi Ocean Outfall sewer demonstrate the efforts of NSW Governments to eliminate pollution and disease in their population — most notably typhoid. While some equipment has been updated, SPS has operated for over a century. SPS 14 satisfies this criterion at a Local level.

Criterion B **An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);**

SPS 14 is connected with the Department of Public Works and Metropolitan Board of Water Supply and Sewerage that contained many eminent persons of the period. However, the connection is not sufficiently close to satisfy this criterion at a local level.

Criterion C **An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or Technical/Research achievement in NSW (or the local history);**

The original elements of SPS 14 consist of high quality materials to meet the functional requirements of a sewage pumping station with the superstructure built in the Federation Queen Anne style. The red bricks, sandstone, fine joinery and deliberate domestic idiom of the superstructure were selected as an elegant disguise for the function of the building. SPS 14 satisfies this criterion at a Local level.

Criterion D **An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;**

SPS 14 does not satisfy this criterion at a Local level.

Criterion E **An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the natural or cultural history of the local area);**

The original pits, pipes, lifting beam and any original equipment in the pumping station have technical and research value at a Local level. The centralised control of SPS 14 from SPS 1 at Ultimo is an aspect of this significance. The superstructure demonstrates typical Federation construction techniques and has some capacity to demonstrate how an industrial building in a domestic idiom was constructed. However, if the superstructure is relocated as approved, it would not satisfy this criterion at a Local level.

Criterion F **An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);**

SPS 14 does not satisfy this criterion at a Local level.

Criterion G **An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or Cultural or natural environments. (Representativeness)**

SPS 14 is part of the first group of sewage pumping stations built in Sydney after trial structures had been built and tested. SPS 14 is one of 14 above-ground pumping stations built by the Department of Public Works using high quality materials in the Federation Queen Anne style. SPS 14 satisfies this criterion at a Local level.

The 14 similar above-ground sewage pumping stations built by the Department of Public Works in the Federation period are representative of other groups of similar buildings constructed by the NSW Government in which one representative building was constructed in each required locality. Other comparative groups of similar government buildings constructed in the Federation period include railway stations, court houses, police stations, primary schools and hospitals.

4.5 Identified Historical Themes

The Heritage Council adopted a set of State Historical Themes on 4 October 2001 that follow and develop the Australian National Historical Themes. SPS 14 provides evidence for, and contributes to the following State themes.

NSW State Historical Theme	Contribution of SPS 14 to this Historical Theme
Technology	SPS 14 was an early Government utility to be operated with electricity, which from the Tramway Powerhouse at Ultimo and was controlled from SPS 1 Ultimo. The switchboard at Ultimo had a panel for each pumping station, enabling the attendant to manage the operation of 18 pumping stations remotely. The early pumps were the plunger type, but sand and foreign material in sewers had an abrasive effect on the pumps causing breakdowns. Centrifugal pumps were designed locally and were installed in each of the pumping stations in 1910. These were locally designed and more effective because the rotating impeller blades had replaceable mild steel shoes.
Towns, Suburbs and Villages	Millers Point was developed as a mixed port and residential area long before SPS 14 was constructed to remove sewage from the area. Prior to this, privies and short sewers leading to Sydney Harbour were used. Millers Point was known in the late Nineteenth Century as a dirty polluted area. The construction of SPS 14 occurred in the same period as the redevelopment of Millers Point with new efficient docks, excavation, roads, housing and other social infrastructure by the Maritime Services Board to minimise opportunities for diseases such as bubonic plague and typhoid.

Utilities	The Sewage and Health Board in 1873 prepared a scheme to intercept sewage draining into Sydney Harbour, and to divert it further away. The eventual scheme for the northern slopes of the city has a sewer main gravity falling from the ridge of the city centre to an outfall at Bondi. This was constructed by the Department of Public Works in the 1880s and was transferred to the Board of Water Supply and Sewerage in December 1889. In order to provide sewerage services to low lying areas of the city, the Government began constructing a series of pumping stations around the Harbour foreshore to pump sewage to a point at which it could gravity fall to the Bondi Outfall. The first such pumping station operated at Double Bay from 1898. A comprehensive network of pumping stations from Rushcutters Bay to Balmain and Annandale was completed by the Department of Public Works by 1905 and transferred to the Board.
Labour	SPS was designed with sensors and signals enabling it to be managed remotely from the controlling Ultimo Sewage Pumping Station 1, minimising the amount of full-time labour needed to operate the stations. The high quality construction reflects the skilled labour force of the period.

4.6 Grading of Significance

Grading reflects the contribution the element makes to overall significance of the item (or the degree to which the significance of the item would be diminished if the component were removed or altered). The southern campus of the University of Western Sydney has been assessed to determine a relative grading of significance into five levels. This process examines a number of factors, including:

- Original design quality
- Degree of intactness and general condition
- Relative age and authenticity (original, replaced)
- Extent of subsequent alterations
- Association with important people or events
- Ability to demonstrate a rare quality, craft or construction process

In accordance with the NSW Heritage Office Guidelines for Assessing Heritage Significance, the standard NSW HO five-grade system has been modified to assess individual contribution of each element to the overall significance of the item. The following five grades of significance have been defined:

Grading	Justification	Status
Exceptional	Rare or outstanding elements directly contributing to an item's local or state significance	Fulfils criteria for local or state listing
High	High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance.	Fulfils criteria for local or state listing.
Moderate	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	Fulfils criteria for local or state listing.
Little	Alterations detract from significance. Difficult to interpret.	Does not fulfil criteria for local or state listing.
Intrusive	Damaging to the item's heritage significance.	Does not fulfil criteria for local or state listing.

In accordance with *The Conservation Plan* by Dr James Sample Kerr, the significance of the various elements of SPS 14 has been assessed identifying components that contribute to the heritage significance of the building in the following categories:

- Exceptional
- High
- Moderate
- Little
- Intrusive

4.8 Exceptional Significance

This category includes rare and outstanding items of local or state significance with a high degree of intactness and would warrant inclusion on the NSW State Heritage Register.

- There is no fabric in this category.

4.9 High Significance

This category comprises items of state or local significance, retaining a high degree of original fabric. The item will demonstrate a key element of its significance and may include alterations that do not detract from the significance of the place. Fabric and spaces in this category includes:

- Gambrel roof with timber-louvered gablets.
- Exposed rafters to eaves.
- English bond red brickwork, mortar and lime pointing.
- Stone lintels, buttress cappings and sills.
- Timber-framed windows, including interior architraves.

- Original metal astragals and timber fixing plates.
- Any original or early identifying signage.
- Remnant evidence of former crane.
- The upper superstructure of SPS 14.
- The underground substructure of SPS 14 with steps.

4.10 Moderate Significance

Elements in this category have little significance value in themselves, but contribute to the overall significance of the item, and may fulfill criteria for state or local listing. Altered or modified elements may be included. Fabric and spaces in this category include:

- The copper gutters and downpipes to be replaced with similar profiles if required.
- Vent pipes.
- The roller shutters.
- The toilet and wash basin.
- Steel ladder and platform system.

4.11 Little Significance

This category comprises alterations and additions with marginal heritage value:

- External pits and grates.
- The new submersible pumps, electrical meters and monitoring panels.

4.12 Intrusive

This category comprises alterations and addition that detract from the heritage value of the place:

- Security perimeter fencing.

4.13 Statement of Significance

The State Heritage Inventory No. 2423582 for the Sewer Pumping Station SPS 14 provides the following Statement of Significance:

"The MWS & B Substation SPS 14 is physical evidence of the development of 'modern" services in the early twentieth century, being among the original group of twenty low level sewage pumping stations constructed to serve the Bondi Ocean Outfall Sewer. The wharf area has been redeveloped in recent years and the substation is significant as it is now the only remaining evidence of the early 20th century development. It is a representative example of a well proportioned, small scale Federation industrial building in the Queen Anne style. The building is significant as an operating station in continuous use since 1904 and is one of two of its type in this style remaining in the city."

The following updated statement of significance is suggested to replace the above statement when appropriate.

Sewage Pumping Station 14 has local heritage significance as part of the major infrastructure project begun in the 1890s to redirect sewage from Sydney Harbour to the Bondi Ocean Outfall Sewer. This work provides evidence for the resolve of the NSW Government to improve the amenity of Sydney Harbour and minimise the spread of disease such as typhoid.

The remaining original structure of SPS 14 demonstrates the technology and processes to raise sewage in the Federation period. The Federation Queen Anne superstructure represents the high quality of work achieved by the Department of Public Works in the period and its domestic idiom demonstrates a concern to disguise the function of the building. SPS 14 is representative of the group of 14 remaining pumping stations from the first group constructed in Sydney after trial structures had been completed.

Refer to Appendix B: State Heritage Inventory No. 2423582 “MWS & DB Pumping Station (SPS No. 14)”

This page has been left blank intentionally

5.0 Constraints, Opportunities & Requirements

This section outlines various major issues involved in the preparation of the conservation guidelines for the SPS 14. It takes into consideration matters arising from the statement of significance, the constraints that apply as a result of statutory and non-statutory heritage listings, and the opportunities arising from these constraints.

5.1 Issues Arising from the Statement of Significance

In considering the Statement of Significance, the following issues need to be addressed in the conservation guidelines:

- The physical location of SPS 14 is significant.

  The building should remain in its historical location where practicable. Relocation is generally only acceptable if this is the sole practicable means of ensuring the survival of the heritage item.

- The original features and detailing of the building, in particular the (above-ground) superstructure should be conserved as a good representative example of a well proportioned, small scale Federation industrial building in the Queen Anne style.

- The building should continue its usage as a sewage pumping station, if possible.

  Where this is not viable, adaptive reuse compatible with the heritage significance of the item should be considered. Adaptive reuse should involve minimal change to significant fabric, and all new work on a heritage item should be reversible.

5.2 Issues Arising from the Physical Condition

SPS 14 is in reasonably good condition and much of its original fabric remains. The physical condition and integrity of the structure do not compromise its conservation.

Where adaptive reuse or relocation is proposed, the significant fabric should be retained and properly protected to ensure minimal disturbance or damage is caused during the relocation process.

5.3 Implications of Heritage Listings

The SPS 14 is currently listed on the following heritage registers:

- Sydney Water Heritage and Conservation Register,
- Sydney Ports Heritage and Conservation Register,
- Sydney Local Environment Plan 2005.

5.3.1 Heritage and Conservation Register Listings

The Heritage and Conservation Register (also known as S170 Register) is a register of heritage assets owned, occupied or controlled by a NSW State Agency, prepared in accordance with Section 170 of the *NSW Heritage Act, 1977*. The register is a public document and must be reviewed and, if necessary, amended at least once a year. A copy of the register (and any amendments) must be provided to the Heritage Council. Any person can inspect (at no charge) a State agency's S170 register at its office.

Listing of a heritage asset on a S170 Register does not in itself create an obligation to obtain the Heritage Council's approval for works. The Heritage Council's approval will only be required for assets listed on the Stage Heritage Register, or subject to an interim heritage order under the Heritage Act.

A State agency should ensure that heritage asset transfer occurs in accordance with the notification provisions of section 170A of the *NSW Heritage Act, 1977*. This states that a minimum of 14 days written notice must be provided to the Heritage Council before an agency transfers any item on its S170 Register.

Process of de-listing an item from S170 Register
At a meeting with Sydney Water on 10/3/2010, Sydney Water advised that the primary heritage significance of SPS 14 was its continued usage at its current location, and they preferred that the station continue this usage. If SPS 14 was to be de-commissioned, Sydney Water would need to de-list the item from their S170 Register.

In accordance with the *NSW Heritage Act, 1977* and the management guidelines issued by NSW Heritage Council "State Agency Heritage Guide" -

1) Upon de-commissioning of SPS 14, Sydney Water will formally transfer the de-commissioned sewage pumping station to the Barangaroo Delivery Authority. In accordance with S170 of the *NSW Heritage Act, 1977*, Sydney Water will give a minimum of 14 days written notice to the Heritage Council before the transfer of the item listed on their S170 Register.

2) Upon transfer, Sydney Water will de-list the item from its S170 Register, and the Barangaroo Delivery Authority will be required to update and include the former sewage pumping station on its S170 Register. The new item may be listed as either one or both (where the superstructure only is relocated) of the following:

   - an archaeological item (the buried section of the former SPS 14);
   - a heritage item (the superstructure of the former SPS 14 in its new location).

3) Barangaroo DA to notify the Heritage Branch of the new item(s) listed on its S170 Register.

The above process also applies to the transfer and de-listing of the item from Sydney Ports Heritage and Conservation Register.

5.3.2 Sydney Local Environment Plan 2005

The primary objectives of the Sydney LEP 2005 heritage provisions are to conserve the heritage of Central Sydney and to ensure any development does not adversely affect the heritage significance of a heritage item. Any changes to the item involving demolition, structural or non-structural alterations, erection of signage and subdivision, as well as development in the vicinity of a heritage item, require consent from Council.

The above, however, does not apply to projects submitted to the NSW Department of Planning for approval under Part 3A or Part 4 of the *Environmental Planning and Assessment Act, 1979*. Under State Environmental Planning Policy (Major Projects) 2005 and Part 3A (for development valued at over $5 million) of the *Environmental Planning and Assessment Act, 1979*, the Minister is the consent authority.

5.4 Part 3A Major Project Approval

The Barangaroo Headland Park concept plan which included the development of the SPS 14 site has been granted consent by the Minister for Planning on February 2007 under Part 3A of the *Environmental Planning and Assessment Act, 1979*.

5.4.1 Statement of Commitments

The approved modification to the Concept Plan included a Statement of Commitments[6] as amended by MG Planning Pty Ltd to address the modified proposals. Extracts from The Statement of Commitments relating to SPS 14 as follows:

48. A Heritage Impact Statement will be prepared for the sewage pumping station which is to guide its future treatment. The Heritage Impact Statement is to consider the following options:

- 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 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.

Timing:
At the stage of any relevant development or project application relating to the sewer pump station structure.

An assessment of the Statement of Commitment (SoC) options was carried out by Conybeare Morrison International in June 2010, and a summary of the impacts is as follows:[7]

[6] *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.

[7] *Barangaroo Sewage Pumping Station SPS 14 Conservation Options Heritage Impact Statement*, prepared by Conybeare Morrison & Associates, June 2010.

Option		Impact/mitigation
SoC 1	Remains in place but 'buried' as archaeological resource	Some negative impact in terms of loss of visibility, but mitigated by retention in its original location and the opportunity for interpretation.
SoC 2	Relocation within the Barangaroo Site	Some impact, if moved and stored temporarily in one piece. Potentially more impact will occur if moved in sections or dismantled and re-built. Mitigation by providing positive imagery in landscape for interpretation if located along the northern shore of the headland.
SoC 3	Relocation to a relevant location	The greater the distance away from the original site and context, the greater the impact on its significance. This is the least desirable option.

The report concluded that:

"The Pumping Station should be either retained in its current location as an archaeological resource, or relocated, preferably in the vicinity of its present location, and incorporated into the proposed landscape. While there will be some minor impact with either proposal, there will however be mitigation in terms of interpretation."[8]

5.5 NSW Heritage Branch Advice

While SPS 14 is not listed on the State Heritage Register, it is covered by the advice from the Heritage Branch of NSW Planning Department in the document *Headland Park 75W Modification – Heritage Branch Recommendation,* which have been referred to and commented upon in *the Statement of Heritage Impact Addendum – Barangaroo Concept Plan – Modification to Headland Park and Northern Cove Sydney* prepared by Conybeare Morrison (CM+). Relevant comments in response to the applicable provisions of the Heritage Branch document are as follows: [9]

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: The approach of this report is to facilitate and endorse the preparation of a future Interpretation Strategy. It is recommended that the Interpretation Strategy incorporates the existing design and landscape features that interpret the site, including the Pumping Station, Harbour Control Tower, sandstone seawall and the lost street pattern.

[8] Ibid.
[9] From *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, p24.

5. *Further study is to be undertaken that Investigates the following options for the MWS&DB Sewage Pumping Station* [SPS 14]:

- *retention of the Pumping Station in situ, albeit buried, as a future archaeological resource; or*
- *its relocation and adpative 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 number of options for the interpretation of the Pumping Station have been identified, including its relocation and incorporation into the proposed landscape and its use for interpretive purposes for visitors to the Headland Park. Alternatively, if the pumping station were left in situ, the developed design proposal for a Headland Park would see the structure 'buried' an estimated 6 metres below grade. It could then be regarded as an archaeological resource, suitable for interpretation.

10. *Photographic and archival recording of all affected heritage items, as identified in the specialist reports* (will need to be) *prepared as part of the Environmental Assessment for the project.*

Comment: This is endorsed as a recommendation of this report with the qualification that the whole site and immediate vicinity of the Pumping Station is included in the photographic recording.

5.6 Opportunities

The proposed conservation options for SPS 14 provide opportunities to enhance the Barangaroo Headland Park development and to inform the interpretative strategy. Interpretation within the Barangaroo Headland Park presents exciting opportunities to describe the maritime history of the city and the colourful history of Millers Point with its periodic transformations.

5.6.1 Relocation of the Superstructure of SPS 14

In considering the relocation and adaptive reuse of the SPS 14 superstructure, compatible re-use options include the following:

- Relocate the structure so that it sits on the proposed landscape at a similar level to its present level. Although of a later era to that of the proposed '1836' interpretation of the Headland, the building could be seen from a distance as an evocative small structure that is often seen in Australian landscape images. It also provides a reference point to the 1836 landscape when there were only a few isolated structures on the peninsular.[10]

[10] *Statement of Heritage Impact Addendum – Barangaroo Concept Plan – Modification to Headland Park and Northern Cove Sydney*.

- Relocate the structure to the edge or periphery of the new Headland Park, such as adjacent to the Moore's Wharf Building. It could be adaptively reused as:
  - a 'gatehouse' for information/historical display relating to the Headland Park,
  - a kiosk,
  - a toilet block,
  - as superstructure for any proposed new sewage pumping station at the edge of the Barangaroo Headland Park.

5.6.2 Proposed Use As A Toilet Block

Where it is proposed to reuse the SPS 14 superstructure as a toilet block, the following should be considered:

- Layout should avoid causing damage to significant fabric and elements, eg. window sills, architraves, timber ceiling, etc;
- Keep new partitions/walls clear of windows to enable ease of window cleaning and future maintenance;
- Window glazing may be replaced with translucent glass for modesty reasons;
- Reuse the existing roller doors for night time security of the building;
- Natural ventilation of the internal spaces could be provided through fixed upper window opening of the existing double-hung windows, air grilles on new doors to toilets, ventilation grilles at the top of new partition walls, or use of the existing roof vents;
- Supply of services to be through floor penetrations;
- Vent stacks to reuse the existing ones;
- Signage to be discreet.

5.6.3 Preferred Hydraulic Option

Based on the feasible hydraulic options submitted to Sydney Water by hydraulic engineers, Warren Smith & Partners, Sydney Water found that "*the redevelopment of the Millers Point Headland Park will require diversion / relocation / retirement (decommissioning) of SPS0014*"[11], and that the preferred option is Hydraulic Option 1 "*Gravity Sewer to SPS1129, Decommission SPS0014*". (See Appendix D.)

The proposed Hydraulic Option 1 will involve the following works:

- Construction of a new gravity sewer along the Hungry Mile (Hickson Road) and connect it to the SPS1129 south of the Headland Park;
- Transfer of flows by intercepting the existing sewers at the intersection of Towns Place and Dalgety Road;
- Disconnect and seal off redundant existing runs of Sydney Water infrastructure;
- Decommissioning of SPS 14;
- Removal of existing pumps and electrical equipment in the pumping station by Sydney Water;
- Relocation of the SPS superstructure;
- Retain and bury the SPS substructure in-situ under proposed Parkland landform.

It is envisaged that Sydney Water will remove the pumps and other electrical equipment for use in their maintenance of other sewage pumping stations. Archival recording should be carried out before, during, and after the removal of pumps and other equipment, and prior to

[11] Sydney Water Corporation, Case No. 119297, "Notice of Requirements for Section 73 Subdivider/Developer Compliance Certificate" for Development on Lot 5 DP876514 Hickson Road, Sydney, 20 April 2010.

the sub-structure being buried in-situ, in accordance with the guidelines published by the NSW Heritage Branch.

While the proposal is to bury the sub-structure/pit using cement-stabilised sand, consideration should be given to fill the pit with water in lieu of sand and reuse the pit as a water storage tank for the Barangaroo Headland Park site irrigation. Note that this may require a new cover and access lid at ground level.

Interpretation of the location of the buried in-situ substructure could be in the form of pavers or inset stone or other material as part of the landscaping.

This page has been left blank deliberately.

6.0 Conservation Policies & Guidelines

6.1 Introduction — General Policies

The following general conservation policies are made as a guide to the care of the building, so as to enable the quality and significance of the place to be retained and interpreted.

The Statement of Heritage Significance should be accepted as the basis for the future conservation of SPS 14.

The conservation of SPS 14 is to be carried out in accordance with the principles of the Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (*Burra Charter*) 1999, recognising that relocation of a building is acceptable as a last resort.

The future uses of SPS 14 should be consistent with the conservation of the heritage significance of the building and its function.

The assessment of heritage significance should be modified, if necessary, if new information comes to light during research, demolition, relocation, adaptation or conservation work. The conservation policies should be reviewed at periodic intervals.

The treatment of existing component spaces, fabric, contents and the function of the building should be in accordance with their assessed level of significance as set out in the following table.

Level of Significance	**Acceptable Action**
Exceptional Significance	**Preservation, restoration or reconstruction.** Note that there are no elements of SPS14 which are of Exceptional Significance.
High Significance	**Preservation, restoration or reconstruction.** Adaptation in accordance with the Burra Charter guidelines may be acceptable provided the changes are compatible with retaining the overall significance of the place.
Moderate Significance	**Preservation, restoration, reconstruction or adaptation.** May be acceptable to ensure the continuing use and security of the building provided that no adverse effect is created to more significant fabric.
Little Significance	More radical adaptation may be acceptable to ensure the continuing use and security of the building.
Intrusive	**Modification or removal** is recommended to reduce the adverse effects of intrusive items.

Refer to Section 4.6 and following, for the significance of the building elements.

6.2 Policy Recommendations

The recommended policies are set out in italics. They are preceded by a description of the specific policy area.

The policies are addressed in the following order:

- Basis of Approach
- Conservation Advice
- Guidelines for Management
- Future Use and Development of the Place
- Maintenance and Repair
- Removal of Significant Fabric
- Exterior of the Building
- Interior of the Building
- Services
- Setting and Curtilage
- Signage
- Archaeological monitoring
- Interpretation of Historic Themes
- Review of Conservation Management Plan.

6.2.1 Basis of Approach

The significance of SPS 14 is in part embodied in the intact fabric of the place. Works carried out on this item must therefore take into account its impact on the cultural significance of the place.

Policy 1.1

The future conservation and development of the place should be carried out in accordance with the principles of The Australian ICOMOS Charter for the Conservation of Places of Cultural Significance*.*

Policy 1.2

Only appropriately qualified professionals should be used in the development, adaptive reuse or relocation of SPS 14.

Policy 1.3

The Statement of Significance and schedule of significant spaces and fabric should be adopted as a basis for future decision making, planning and work on the place.

Policy 1.4

Before any major works are undertaken, review all available documentary and physical evidence in order to guide conservation works.

Policy 1.5

An adopted procedure for coordinated planning and decision making for the place should be established to ensure that decisions on development are made in the context of sound conservation practice.

6.2.2 Conservation Advice

The Conservation Management Plan is a guide for the future care and management of SPS 14. It will be required to be interpreted and implemented by persons with relevant conservation expertise.

Appropriate conservation advice will be necessary to ensure all development (including possible future changes, adaptation, alterations and additions, fitouts, services, installation etc.) is compatible with the significance of the item.

Policy 2.1

Relevant and experienced professional conservation advice should be provided for all conservation, adaptation, fitout and repair works proposed for the building.

Policy 2.2

A comprehensive collection of all relevant archival material should be collected and maintained by the authority responsible for the conservation of the place. This should include, but not be limited to, the following:

- *Copies of all archival plans, specifications and reports.*
- *Copies of all photographic and archival records of the place.*
- *A copy of this plan.*

6.2.3 Guidelines for Management

The effectiveness of this Conservation Management Plan depends on its implementation. An effective management structure is required to ensure that the policies are implemented. This document should be made available to all relevant officers or decision-makers.

Policy 3.1

There shall be an ongoing commitment to make adequate financial resources available for the engagement of appropriate professionals to provide experienced conservation advice when required.

Policy 3.2

There shall be an ongoing commitment to make adequate financial resources available for the development and implementation of a planned maintenance programme.

Policy 3.3

The authority should maintain a register of qualified heritage tradespeople with proven expertise in high quality conservation work.

Policy 3.4(a)

The Barangaroo Delivery Authority or its successor agency should list SPS 14 on its section 170 register under The NSW Heritage Act 1977,*upon transfer of the asset from Sydney Water to the Barangaroo Delivery Authority.*

Policy 3.4(b)

Upon relocation of the SPS 14 superstructure, two items will be listed:

1) the substructure (underground pumping utility) will be listed as an archaeological item;
2) the superstructure (above ground building) will be listed as a building in its final location.

Policy 3.5
The Barangaroo Delivery Authority should undertake detailed photographic archival records before, during and after relocation or adaptation.

Policy 3.6
The superstructure of SPS 14 should be managed by the Barangaroo Delivery Authority and any successor agencies in accordance with best accepted Conservation practice.

Policy 3.7
The remaining substructure utility elements of SPS 14 should be managed by the Barangaroo Delivery Authority or its successor agency in accordance with best accepted conservation practice as an archaeological item.

Policy 3.8
The relocated above-ground superstructure of SPS 14 may be leased or rented to another entity if the function of that leasing or rental is compatible with the conservation of the place. Adaptation or new fitout should be undertaken under the direction of a qualified Heritage Architect.

6.2.4 Future Use and Development of the Place

Where new works or relocation are proposed, an overall approach that respects the development of Millers Point and Sydney's Sewerage development is required. If alterations, additions, adaptive reuse or refurbishment is proposed, professional heritage advice and guidance is required. This type of work, by its nature, requires a comprehensive understanding of the levels of significance of the original building, and a sensitive approach to design. Given the development approval to relocate the superstructure of SPS 14, policies 4.1 to 4.8 are recommended based on the superstructure being relocated.

Policy 4.1
Conserve the historical significance of SPS 14 before, during and after any relocation process.

Policy 4.2
A suitable site should be found within the low-lying suburbs around Sydney Harbour and Botany Bay that have been served by similar Federation period sewage pumping stations that directed effluent towards the Bondi Treatment Works.

Policy 4.3
A site nearby the existing (original) site of SPS 14 is preferred to enhance the interpretation of the building.

Policy 4.4
A site at a similar height above sea level to the existing (original) placement of SPS 14 would enhance the interpretation of the building's function.

Policy 4.5
A strategy should be devised to guide the relocation of the building according to conservation principles. Consideration is to be given to the different methods of relocating the building, site security during the process, and whether an intermediary storage location will be required.

Policy 4.6
Future uses for SPS 14 building should allow public access to at least the exterior of the building, which is the common circumstance for similar Federation period pumping stations. Public access to the interior is desirable for interpretation purposes, but not essential.

Policy 4.7
A function associated with light industry and the pumping of water would be an ideal use for the relocated SPS 14 building, however, such a use is unlikely on the Barangaroo Headland.

Policy 4.8
Sympathetic adaptive reuse that retains the original building fabric without damage could include use as a kiosk, public amenities (floor service penetrations only) information booth, interpretation display, ticket sales.

6.2.5 Maintenance and Repair

Maintenance is the single most important process in the long term conservation of a place. This requires regular inspections and prompt follow-up repair to minimise impact upon heritage fabric. One of the most important aspects of maintenance is ensuring that water is not allowed to enter the building by rising, falling or lateral damp penetration.

Policy 5.1
Establish a Maintenance Plan tailored to the requirements of SPS 14.

Policy 5.2
Ensure a cyclic inspection program is adhered to and recorded.

Policy 5.3
Seek to maintain the integrity of original fabric and detailing rather than introduce new materials.

6.2.6 Removal of Significant Fabric

Whenever the issue of removing original and significant fabric from its original location is raised, this needs to be carefully considered in the context of the reasons for removal and the impact upon the significant element and its setting.

Policy 6.1
Surviving building fabric nominated in this Conservation Management Plan as being of exceptional significance or high significance shall not be removed, altered or in any other manner degraded.

Policy 6.2
Intact built elements that date from the Federation period have a High level of heritage significance. These include the walls made of brickwork, sandstone and lime mortar, the wall openings and outer frames of the windows, internal architraves, timber ceiling lining and cornice and the timber roof structure. The steel joist lifting beams appear to be consistent with the original drawings and are likely to be original fabric. These steel beams should be retained in the relocated building for interpretation purposes. Refer to Section 4.9.

Policy 6.3
Surviving building fabric of moderate or low significance shall only be considered for removal or replacement where there is no appropriate alternative. Such an evaluation should involve appropriate input from professionals experienced in the relevant area of expertise. Refer to Sections 4.10 and 4.11.

Policy 6.4
Built elements that date from the post-war period are of Low heritage significance, and may be retained where their presence assists in the interpretation of the building, and where they do not obstruct the visibility or reconstruction of more significant elements.

Policy 6.5
Where significant fabric is removed, relocated or altered, a thorough recording of the original form and detail shall be made including its location within the structure. The resulting records shall be lodged with the Conservation Management Plan for future reference and review.

Policy 6.6
Building fabric which is identified in this plan as insignificant or intrusive may be removed, altered or adapted provided that such action allows the potential for recovery of significance and does not damage surrounding original fabric. Refer to Section 4.12.

6.2.7 Exterior of the Building

Policy 7.1
The maximum quantity of original superstructure building fabric is to be retained in the relocation process.

Policy 7.2
Missing elements from the original design for the building superstructure should be reconstructed as part of the building relocation process.

Guidelines
- The multi-paned top-lights should be reconstructed in the existing window frames, according to the original drawings. The window detail should match that of the Booth Street Annandale SPS 3.
- The missing window in the west façade should be reconstructed to original detail.
- The original slate roof with terra cotta finials should be restored according to the original drawings. The roof cladding detail should match that of Rushcutters Bay SPS 18.

Policy 7.3
A suitable new foundation is to be prepared for the relocated SPS 14 superstructure.

Guidelines
- A reinforced concrete footing designed by a structural engineer is to be prepared to support the relocated building.
- The new footing is to include a termite barrier in order to protect the timber-framed roof and joinery.
- Careful consideration should be given to the design of any visible part of the new footing. If the footing is to be visible as a plinth, the vertical planes should be clad with rock-faced sandstone.

Policy 7.4
Significant building fabric from the superstructure should be repaired after the building has been relocated as necessary.

Guidelines
- Cement used to re-point the masonry should be removed.
- The masonry should be re-pointed with lime mortar.
- All painted timber is to be conserved. Flaking paint is to be removed, the timber primed and painted suitable for an exposed site.

Policy 7.5
Consideration is to be given to relocating SPS 14 superstructure as a single element to conserve the original lime mortar.

Policy 7.6
Limited adaptation which does not affect the character or significance of the place as a whole may be permitted provided SPS 14 superstructure remains as the dominant form.

Guidelines
- Ensure the scale of any new or adjacent work does not dominate or compete with SPS 14
- Ensure that any new or adjacent work respects the scale, form and proportions of elements of SPS 14.

6.2.8 Interior of the Building

Opportunity to adapt SPS 14 to a new use requires policies which will examine the suitability of the proposed new use.

Policy 8.1
The policies set out in this document should be applied irrespective of the use to which the buildings are put.

Policy 8.2
Adaptation of the internal spaces of the relocated superstructure of SPS 14 is an acceptable option to ensure the ongoing conservation of the place.

Policy 8.3
Adaptation or new uses for the substructure of SPS 14 should ensure that its original layout and former use remain evident. Alternatively, the whole substructure of SPS 14 may be buried under suitable sand fill, as an archaeological item.

Policy 8.4
Proposed adaptation or changes which would have a strong adverse effect on the character of the building are unacceptable.

Guidelines
- Fabric identified as being High significance must not be damaged in a fit-out. No chasing or penetrations through the masonry walls is permitted. No cutting into timber architraves is permitted. Minor penetrations may be permitted through the timber ceiling lining on the

grounds that the roof space may be required for future services and the lining material can be readily replaced to match the original.

- Internal partitions, equipment and stores are permitted in the building, provided that they are reversible.
- Original joinery should remain intact and unaffected by any proposed adaptation.
- New penetrations or openings through the original masonry walls are not recommended.
- New penetrations through the restored roof are not acceptable.

6.2.9 Services

The design of any new services for SPS 14 should reuse original vents where possible.

Policy 9.1

New services should be designed to limit impact upon significant fabric.

Policy 9.2

No new visible external services should be considered.

Guidelines

- Regular inspection of all rainwater goods and stormwater disposal systems should be undertaken to ensure effective ongoing weather protection of SPS 14.

6.2.10 Setting and Curtilage

Policy 10.1

The curtilage of SPS 14 superstructure must be protected in its new site.

Guidelines

- SPS 14 was designed as a free-standing building, and should remain so. No external enclosed space additions should be permitted to SPS 14.
- A curtilage of 2.5m of open space around the masonry walls of SPS 14 should be recognised.
- Sewage pumping stations of the Federation period were small structures commonly given a modest amount of open space around them.
- If an additional structure is required in close vicinity to SPS 14 to support a necessary function in the relocated building, a pavilion may be permitted within 5 metres of SPS 14 provided that it has a smaller volume and lower height than SPS 14, and does not come within 2.5 metre of SPS 14.
- SPS 14 should not be relocated within 5m of an existing building. New buildings larger than SPS 14 must be kept more than 5m away from SPS 14.
- Deep excavation must be kept 7m away from the machine and wet wells of SPS 14.

6.2.11 Signage

Signage is an important architectural feature which should not detract from the overall architectural character of SPS 14.

Policy 11.1

Original identifying signage of the name "SP14" should be retained in its original form. Recent signage may be removed.

Policy 11.2
New signage should be restrained in design and of a high standard of materials and graphics.

Policy 11.3
The fixing of any proposed new signage should have minimal impact upon significant fabric.

Policy 11.4
Proposed new signage should be carefully placed to avoid obscuring the architectural features of SPS 14

6.2.12 Archaeological Monitoring

SPS 14 is located in an archaeologically sensitive area. Despite substantial site disturbance, indigenous and non-indigenous remnants may be uncovered during relocation works for SPS 14.

Policy 12.1
Notify the Barangaroo Delivery Authority if any potential archaeological remnants are uncovered.

Policy 12.2
Investigate, record and interpret where appropriate, the archaeological evidence of the early development of the site.

Policy 12.3
Original machinery and any fixed infrastructure left in its original site should be entered on the Section 170 Register of the Barangaroo Delivery Authority.

Guidelines
- Existing machinery that is part of the functioning SPS 14 may be relocated if required for continued use elsewhere. Fixed infrastructure should be managed as an archaeological item on the Section 170 Register of the Barangaroo Delivery Authority.

6.2.13 Interpretation of Historic Themes

Policy 13.1
A detailed interpretation strategy of the Pump Station SPS 14, both for the substructure and the superstructure should be prepared as part of the overall site interpretation.

Guidelines
Recommended interpretation strategies could include the following:
- Framed archival photographs of its existing location and a framed copy of the original drawings to be displayed within the superstructure.
- Retention of the external signage on the superstructure to reflect its original use and number.
- An interpretation of the substructure within the paving over its buried location. This could be an engraved plaque or concrete panel.
- A sculptural interpretation of the pipe work and pumps required within a Sewage Pumping Station.

6.2.14 Review of Conservation Management Plan

Policy 14.1

This Conservation Management Plan adopted for SPS 14 should be reviewed once in every seven year period or following a proposal for major change within or adjacent to SPS 14.

7.0 Implementing the Plan

SPS 14 is planned to be decommissioned following the completion of new sewage infrastructure that will pick up the existing sewer lines connected to it. The decommissioning of SPS 14 is necessary to enable the reconstruction of the headland at the northern end of Barangaroo as part of the designated Barangaroo Headland Park. The proposal is to relocate the superstructure of SPS 14 within the Barangaroo Headland Park site.

7.1 Relocation and Adaptive Reuse within the Barangaroo Site

The relocation and adaptive reuse of the superstructure of SPS 14 is considered acceptable given that the pit and wells (ie. the substructure) are to be retained in situ as archaeological items. While the relocation of the superstructure will have some impact on its significance, it will still be in the vicinity of its original location and able to be interpreted.

In considering relocation, one option is to move the superstructure so that it sits on the proposed foreshore at a similar level to present. Although of a later era to that of the proposed '1836' interpretation of the Headland, the building could be seen from a distance as an evocative small structure that is often seen in Australian landscape images. It could also provide a reference point to the 1836 landscape when there were only a few isolated structures on the peninsular.[12] At the time of writing it is proposed to re-locate SPS 14 to the periphery of the new Headland Park, adjacent to the Moores Wharf Building. There, it could then be adaptively reused as a 'gatehouse' for information/historical display relating to the Headland Park, a kiosk, or, public toilets for the Barangaroo Headland Park.

Methodology of Relocation – Two Options: Method (A) dismantling or Method (B) shifting whole. Prior to commencement of relocation, prepare an archival recording in accordance with Guidelines issued by NSW Heritage Council.

Method (A)
Superstructure: Record and label each and every element and carefully take down the existing superstructure element by element. The internal partitions may be discarded after recording. If the slate roof is to be restored as recommended, the existing tiles may be disposed of. Rebuild the station based on the architectural records with compatible mortar with supervision by a heritage architect or engineer.
Sub-structure: The substructure of concrete will need to be capped and covered. Equipment that is not original and can be reused elsewhere by Sydney Water may be removed. The covered substructure would be become an archaeological resource for future investigation.

Methodology:
1) Lift the roof structure as a whole to preserve as much as possible of the existing fabric, and store safely and securely.
2) Record, number and label existing elements and note labelling on a detailed drawing.
3) Take down the existing brickwork unit by unit, clean the bricks prior to numbering and store safely.
4) Excavate around the existing pit structure and remove in sections.
5) Build new foundations and base, place existing retained base structure, 'stitch' it together in accordance with structural drawings and reconstruct the masonry in original sequence.

[12] *Statement of Heritage Impact Addendum – Barangaroo Concept Plan – Modification to Headland Park and Northern Cove Sydney*.

6) Restore the roof structure and make good. (Shreeji)

Temporary Storage:
Store all removed components and elements on dry and hard standing. Protect them from weather by covering over with a waterproof and well-secured tarpaulin or other suitable cover. Secure the compound around the temporary storage area with steel mesh fencing and guardrails (reuse existing security mesh fencing and guardrails if possible) until the components require relocation to the new permanent location. (Shreeji)

Method (B)
Ensure sufficient clear access space has been allowed for around the SPS superstructure to enable excavation and the lifting procedures to be carried out. Allow for a minimum distance of 4m for excavation purpose and on at least two sides (preferably the north and east sides) a minimum of 10m for the lifting procedures.

Lift the existing structure as a whole unit following bracing to structural detail and transport it to the relocation position. It will be economically prohibitive to lift the structure from under the base of the station, but the superstructure could be lifted on part of the base of the pit. The depth of the pit to be retained can be reviewed and decided upon on site. (Shreeji) A new concrete cover with access hatch may be required if it is proposed to be reused for water storage.

Methodology:
1) Excavate around the existing structure to relieve the ground skin friction to structural advice. The depth will depend upon the pit structure to be retained.
2) Remove the existing roof tiles and part of the ceilings in the lifting cable locations.
3) Insert steel lifting beams through the pit walls. The beams can be welded on site to manage the lengths.
4) Cut the existing concrete pit walls below the lifting points.
5) Install timber bracing frames in the door openings.
6) Lift the structure out.
7) Place it on a transporter to be relocated on a prepared base and foundations.
8) Remove lifting beams and make good concrete, ceiling and roof. (Shreeji)

Temporary Storage:
Store the whole superstructure on a dry, hard and level standing until its relocation to the new permanent location. Protect the superstructure either by covering over with a well-secured waterproof tarpaulin or temporary clad the roof in metal sheet roofing to provide a watertight protection to the interiors. Store the existing roof tiles on pallets inside the pump house superstructure. Secure the compound around the temporary storage area with steel mesh fencing and guard rails (reuse existing security fencing and guardrails if possible). (Shreeji)

Comments on Relocation Method (A):
- The process of dismantling and reassembling the station will need to be strictly controlled and monitored.
- The process of relocating the superstructure will be labour and time intensive.
- It is likely that some of the elements may be damaged and require replacement in the process.
- The relocation of the pit will require specialist trades and equipment.
- Part of the original fabric, mortar and render will be lost in the process.

- The relocated structure will require a new foundation and base.
- The budget estimate for Method (A) is $145,000 + GST. (Shreeji)
- This estimate excludes adaptive reuse of the existing pit or relocated superstructure.

Comments on Relocation Method (B):

- This option requires specialist equipment and trades.
- All the original fabric and material will be preserved and retained.
- It will be structurally advantageous to retain part of the pit structure to act as spreader beams in lifting the super structure. Part of the retained pit can be used as interpretation of the pit if adequate depth is retained. The retained section could be used for interpretation or a basement.
- The relocated structure will require new foundations and base.
- The budget estimate for Method (B) is $130,000 + GST. (Shreeji)
- This estimate excludes adaptive reuse of the existing pit or relocated superstructure.

Considerations:

Based on these comments, it is considered that relocation Method (B) will be more suitable in this instance as more original fabric and material can be conserved, with part of the pit retained in-situ for future interpretation and use. The cost estimate for Method (B) is lower than for Method (A).

8.0 References

Aird, WV. *The Water Supply, Sewerage and Drainage of Sydne*y, Halstead Press Pty Ltd, Kingsgrove, NSW

Beasley, Margo. *The Sweat of Their Brows — 100Years of the Sydney Water Board 1888–1988*, published by the Water Board, Sydney Illawarra, Blue Mountains, Sydney 1988

Conybeare Morrison International P/L, June 2010 *Barangaroo Sewage Pumping Station SPS 14 Conservation Options Heritage Impact Statement*.

Conybeare Morrison International, *Statement of Heritage Impact Addendum – Barangaroo Concept Plan – Modification to Headland Park and Northern Cove Sydney*, prepared by for the Barangaroo Delivery Authority, August 2009.

Minister for Planning *Instrument of Approval – Barangaroo Concept Plan Major Project 06_0162 MOD 3 Schedule 3 Proponent's Statement of Commitments,* 11 November 2009.

Plans of Sewage Pumping Station 14 by the Metropolitan Water Sewerage and Drainage Board, Sydney, dated 1980 but incorporating material from original construction drawings.

Shreeji Consultants P/L, *SPS 14, Barangaroo – Proposed Relocation Feasibility Report – Structural*.

State Heritage Register, instituted by the *NSW Heritage Act, 1977*.

Sources of Historical Illustrations:

Coleman, J. *In & Around The Rocks – The Early Years*, published by View Productions Pty Ltd, Sydney, 2001.

Evans, Susanna. *Historic Sydney as seen by its Early Artists*, published by Doubleday Australia P/T, Lane Cove, Sydney, 1983.

Fitzgerald S. & Keating, C. *Millers Point: The Urban Village*, published by Hale & Iremonger P/L, Sydney, 1991.

Karskens, Grace. *Inside The Rocks – The Archaeology of a Neighbourhood*, published by Hale and Iremonger, Sydney, 1999.

Kelly, M. & Crocker, R. *Sydney Takes Shape*, published by Doak Press in association with The Macleay Museum, University of Sydney, 1978.

McCormick, Tim. *First Views of Australia 1788-1825 – A History of Early Sydney*, published by David Ell Press in association with Longueville Publications, Chippendale, Sydney, 1987.

This page has been left blank deliberately.

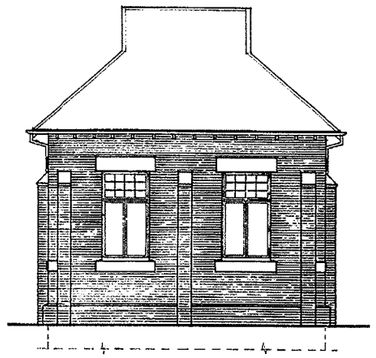
Appendices

This page has been left blank intentionally

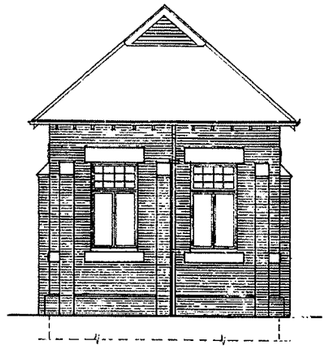
Appendix A

SPS14 Architectural Drawings

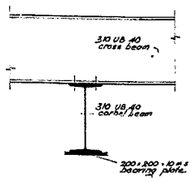
This page has been left blank intentionally



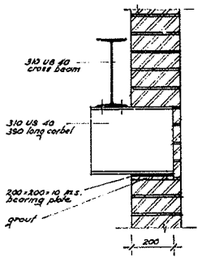
ELEVATION - "2"

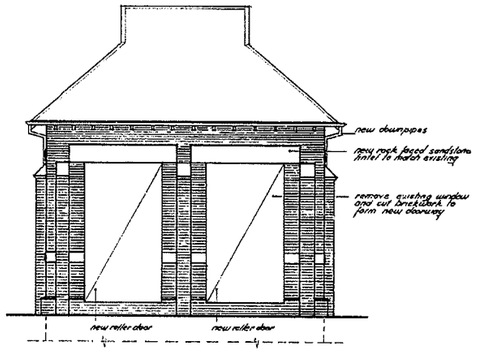


ELEVATION - "4"

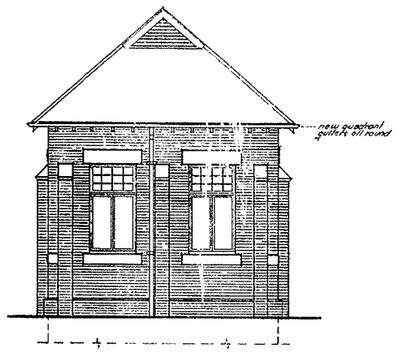


DETAIL - "D"

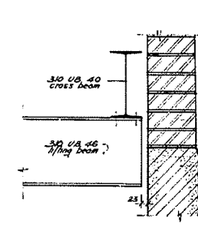




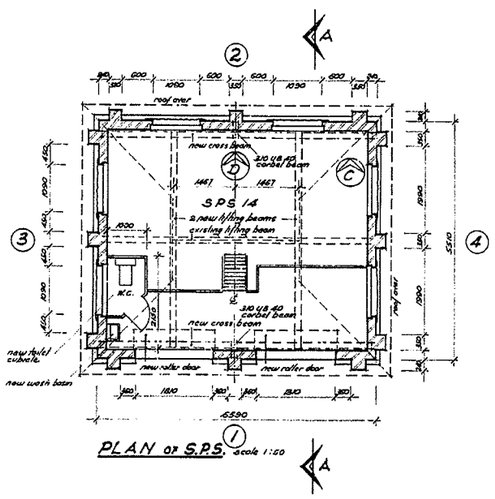
ELEVATION - "1"



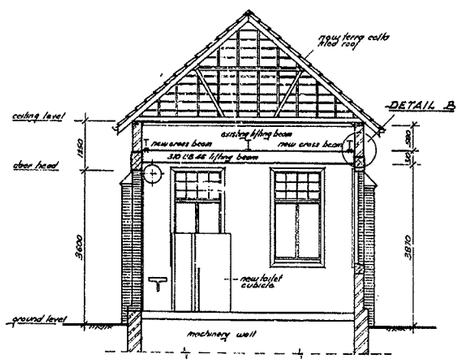
ELEVATION - "3"



DETAIL - "B" scale 1:10

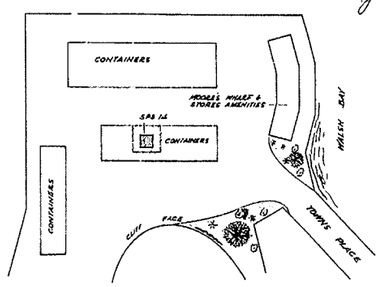


PLAN OF S.P.S. scale 1:50

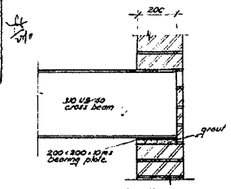


SECTION - "AA"

WORK AS EXECUTED
COMPLETED 28-6-82
ASS'T ENGINEER P. BOLIER
OVERSEER R. TAPENNER
CONTRACTOR D.C.
for District Engineer
SYDNEY DISTRICT



LOCATION PLAN n.t.s.



DETAIL - "C"

NOTE
New loading beams are details on Design Branch dwg. SPS 1A/1

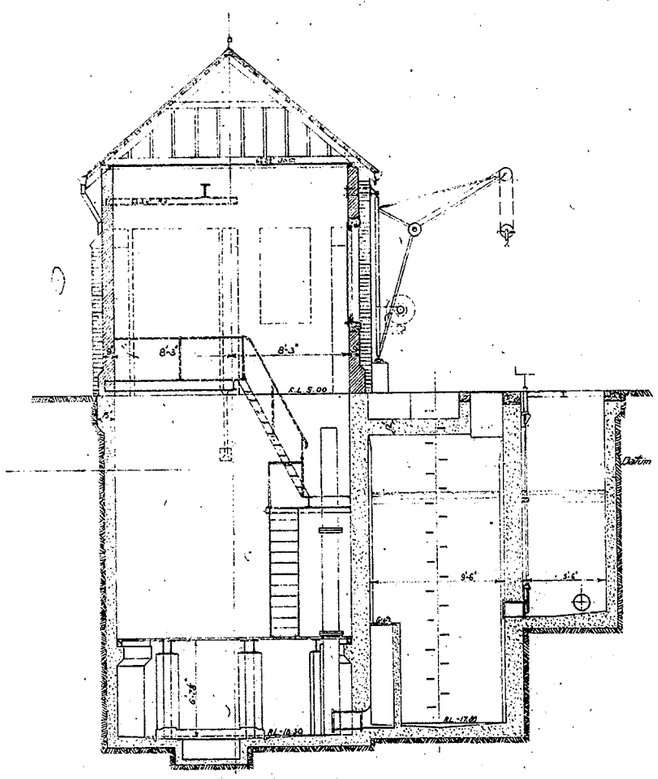
METROPOLITAN WATER SEWERAGE AND DRAINAGE BOARD
SYDNEY, N.S.W. A1

S.P.S. 14 TOWNS PLACE
MILLERS POINT - ALTERATIONS
TO EXISTING STRUCTURE

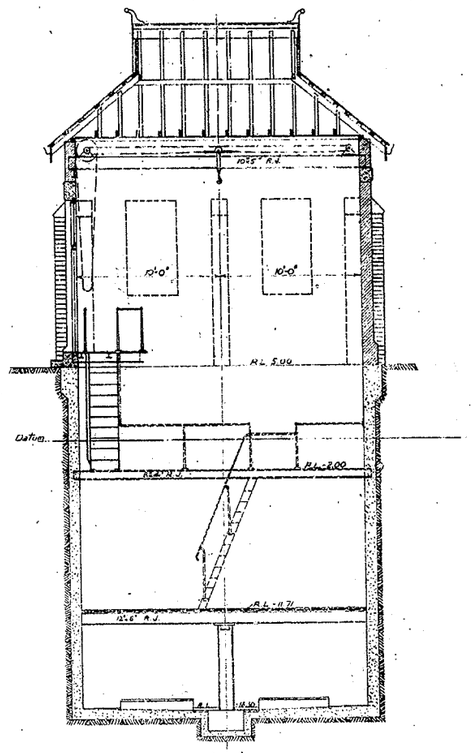
CONTRACT OR JOB No. | FILE No. 37/10142 | SCALES as shown
DESIGNED | DRAWN | CHECKED | ISSUE A
ACTING Senior Architect | 11/6/10 Chief Engineer Operations
RECOMMENDED | APPROVED
SENIOR DESIGNING ENGR | Chief Engineer (Design)

1429
SPS 14
13

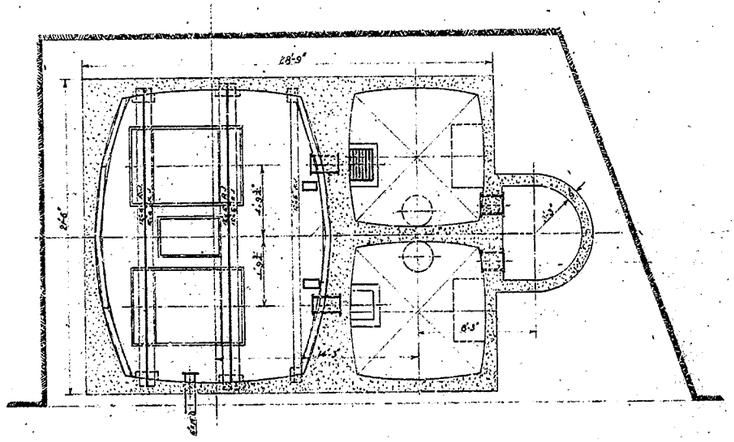
DATE OF NEGATIVE	LETTER	DETAIL OF AMENDMENT	MADE BY	DATE
11-11-82				



SECTIONAL ELEVATION



END ELEVATION



PLAN

DEPUTY CHIEF ENGINEER

M.I.Mech.C.E.
CHIEF ENGINEER

REVISED	
METROPOLITAN WATER, SEWERAGE & DRAINAGE BOARD, SYDNEY, N.S.W.	
L.L. PUMPING STATION No 14 DALGETY Rd - MILLERS PT GENERAL ARRANGEMENT	
CONTRACT No.	SHEET No.
SCALE 1/8" = 1'-0"	DRG. No. 23366
DRAFTSMAN	DRAWING NUMBER
TRACER	CHIEF CIVIL ENGR.
CHECKED	DESIGNING ENGINEER
EXAMINED BY	CHIEF DIVIS'L ENGR.

DIMENSIONS IN MILLIMETRES

REPORT ANY ALTERATIONS AND CHECK FOR LATEST ISSUE WITH ELECTRICAL SUB-BRANCH DRAFTSMAN HEAD OFFICE

WALSH BAY

Nº 3 TRANSIT SHED

MOORE'S WHARF & STORES AMENITIES

CONTAINER STORAGE AREA A

(SEE DETAIL A).

S.P.S. 14

CONTAINER STORAGE AREA

NEW UNDERGROUND SUPPLY
2 x ϕ100 GALV. STEEL PIPES.
1 x ϕ75 GALV. STEEL PIPES.

NEW M.W.S.&D.B. A.T.C. SERVICE (SEE NOTE 2.)

NEW M.S.B. ϕ450 R.C. PIPE (SEE NOTE 7)

A.T.C. PIT T2.

I.L. 2.010

M.W.S.&D.B. POLE & PIT

1 METRE WIDE EASEMENT REQUIRED OVER M.W.S.&D.B. CABLES

NEW M.S.B. A.T.C. SERVICE (SEE NOTE 7)

CLIFF FACE

TOWNS PLACE

CONTAINER STORAGE AREA

DALGETY RD TO BE CLOSED

SCALE 1:500

N

WALSH BAY

HARBOUR

DARLING

S.P.S. 14

DALGETY RD.

TOWNS PL.

HICKSON RD.

WINDMILL ST.

ARGYLE PL.

HICKSON RD.

LOCALITY PLAN
UBD REF. MAP 1 - E2

SEE NOTE 6

M.S.B. PROTECTION POSTS & RAIL

S.P.S. 14

SEE NOTE 3

EXISTING DRAIN

NEW A.T.C. PIT.

NEW M.W.S.&D.B. A.T.C. SERVICE.

ϕ75

ϕ100

1 METRE WIDE EASEMENT REQUIRED OVER M.W.S.&D.B. CABLES.

SEE NOTE 3

EXISTING M.W.S.&D.B. POLE

DETAIL A
SCALE 1:100

M.S.B. FINISHED SURFACE LEVEL

75mm ASPHALTED CONCRETE

300mm ROADBASE

EXISTING SURFACE LEVEL

SEE NOTE 5

ϕ75 GALV. STEEL PIPE

SAND

2 x ϕ100 GALV. STEEL PIPE

100
800
380
300
450

SECTION A-A
SCALE 1:20

NOTES

1. ALL PIPES TO BE MEDIUM GRADE GALVANISED STEEL PIPE TO AS 1074.
2. NEW M.W.S.&D.B. A.T.C. SERVICE TO BE INSTALLED BY TELECOM.
3. CABLE PITS TO HAVE EXTRA HEAVY DUTY GATIC COVERS WITH 750 x 600 CLEAR OPENING. MAXIMUM DEPTH OF PIT TO BE 1000. STEP IRONS TO BE PROVIDED AND PIT TO BE DRAINED.
4. CONDUITS TO BE BELLMOUTHED AT ENTRY TO PITS.
5. CABLE TRENCH TO BE FILLED WITH SELECTED NON-COHESIVE MATERIAL.
6. EXACT POSITION FOR ENTRY OF PIPES TO S.P.S. 14 TO BE DETERMINED ON SITE BY FIELD ENGINEER.
7. MARITIME SERVICES BOARD'S ϕ450 R.C. PIPE & ATC SERVICE TO RUN BELOW M.W.S.&D.B. PIPES.

REFERENCE DRAWINGS

EE/X5740/3	NORTHERN DARLING HARBOUR RECONSTRUCTION - BERTH Nº3 LAYOUT OF ELECTRICAL SERVICES.
EE/X5740/4	NORTHERN DARLING HARBOUR RECONSTRUCTION - BERTH Nº3 LAYOUT OF DRAINAGE.
EE/ 5704/2	ELECTRICAL EQUIPMENT LAYOUT.

LETTER	DETAIL OF AMENDMENT	MADE BY	DATE	APPROVED BY
A	M.W.S.&D.B. A.T.C. SERVICE ADDED.	G.P.	22.2.80	

ASST. PRINCIPAL ENGR. ELEC. 21/11/79

PRINCIPAL ENGR. ELEC. 21/11/79

ITEM	DESCRIPTION	No. OFF
	METROPOLITAN WATER SEWERAGE AND DRAINAGE BOARD SYDNEY N.S.W.	

S.P.S. 14 MILLER'S POINT
DALGETY ROAD
SITE PLAN & POWER SUPPLY ARRANGEMENT

DESIGNED	DRAWN	CHECKED	EXAMINED	SCALE AS SHOWN
G. POU	K. CHAPLIN 13-11-79	Starsen 16-11-79	G.R. 16.11.79	A1
ENGINEER	CONTROLS ENGINEER	ELECTRONICS ENGINEER	DESIGN ENGINEER	ISSUE: A
19.11.79	—	—	20-4-79	DRAWING No. EE 5740/1

DO NOT SCALE

PAPER SIZE 566 x 801mm

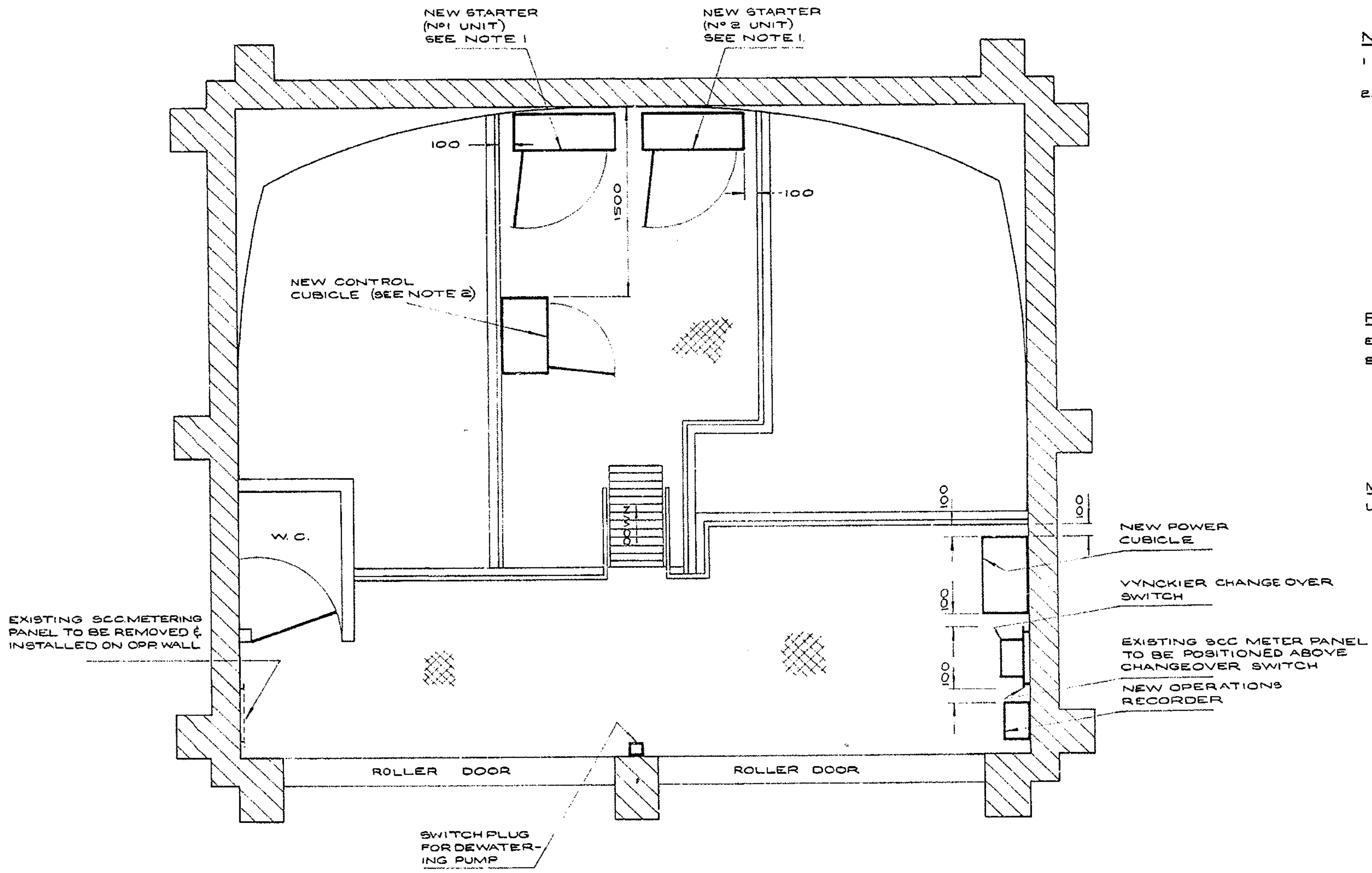
R² 83-106 B- 1494

PHOTO SECTION CROWN ST. 16

Date: 1-80

DIMENSIONS IN MILLIMETRES

REPORT ANY ALTERATIONS AND CHECK FOR LATEST ISSUE WITH ELECTRICAL SUBBRANCH DRAFTSMAN HEAD OFFICE



--- ACCESS TO DALGETY ROAD.

NOTES

1 SPACE BETWEEN STATION WALL & STARTERS TO BE SUITABLY PACKED TO FACILITATE MOUNTING

2 CONTROL CUBICLE TO BE MOUNTED ON FRAME TO SUIT (SEE DESIGN BCH. DRAWING S.P.S.14/1 GEN. ARRGT)

REFERENCE DRAWINGS

EE/5740/G - INTERCONNECTION WIRING DIAGRAM.

EE/5740/1 - SITE PLAN & POWER SUPPLY ARR'GT.

MAP REF

UBD MAP 1 - E2.

ITEM	DESCRIPTION	No. OFF

METROPOLITAN WATER SEWERAGE AND DRAINAGE BOARD
SYDNEY N.S.W.

S.P.S. 14 MILLERS POINT.

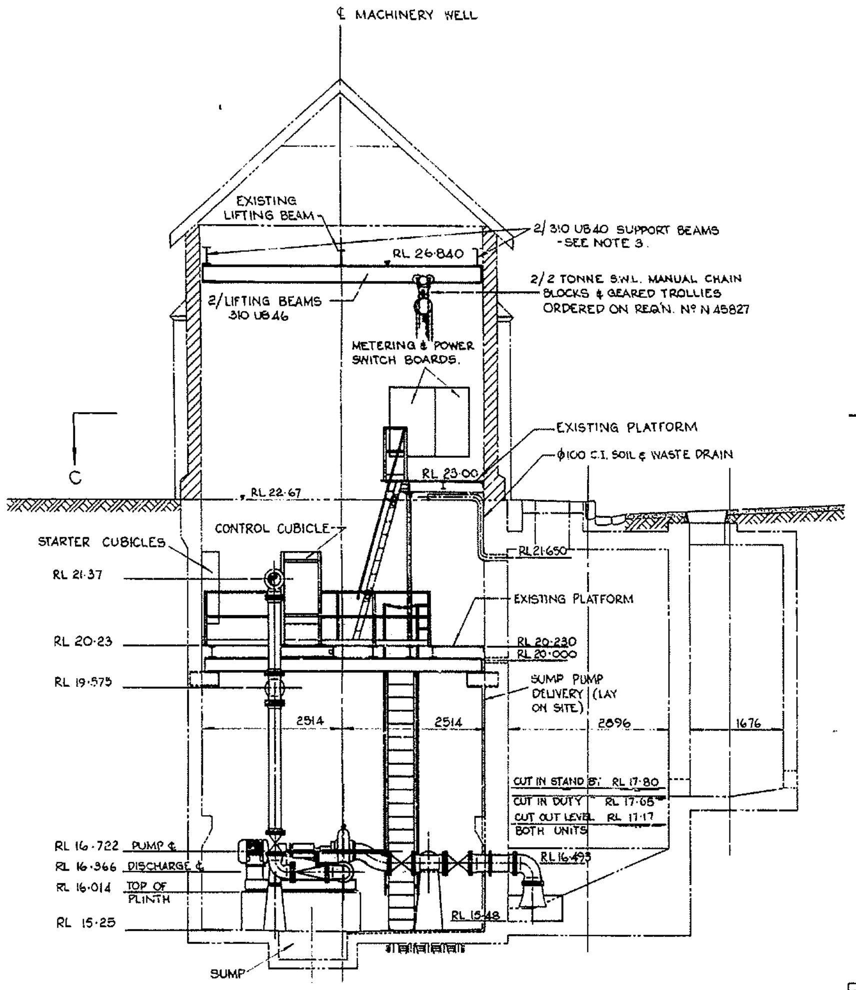
DALGETY ROAD

ELECTRICAL EQUIPM'T LAYOUT.

DESIGNED	DRAWN	CHECKED	EXAMINED	SCALE 1 20
G POUND	K Stephenson 4.12.79	13.12.79	10-1-80	A1
ENGINEER 16-1-90	CONTROLS ENGINEER —	ELECTRONICS ENGINEER —	DESIGN ENGINEER 17-1-80	ISSUE / DRAWING No E.E. 5740/2
18/1/80 ASST. PRINCIPAL ENGR ELEC.		21/1/80 PRINCIPAL ENGR ELEC.		

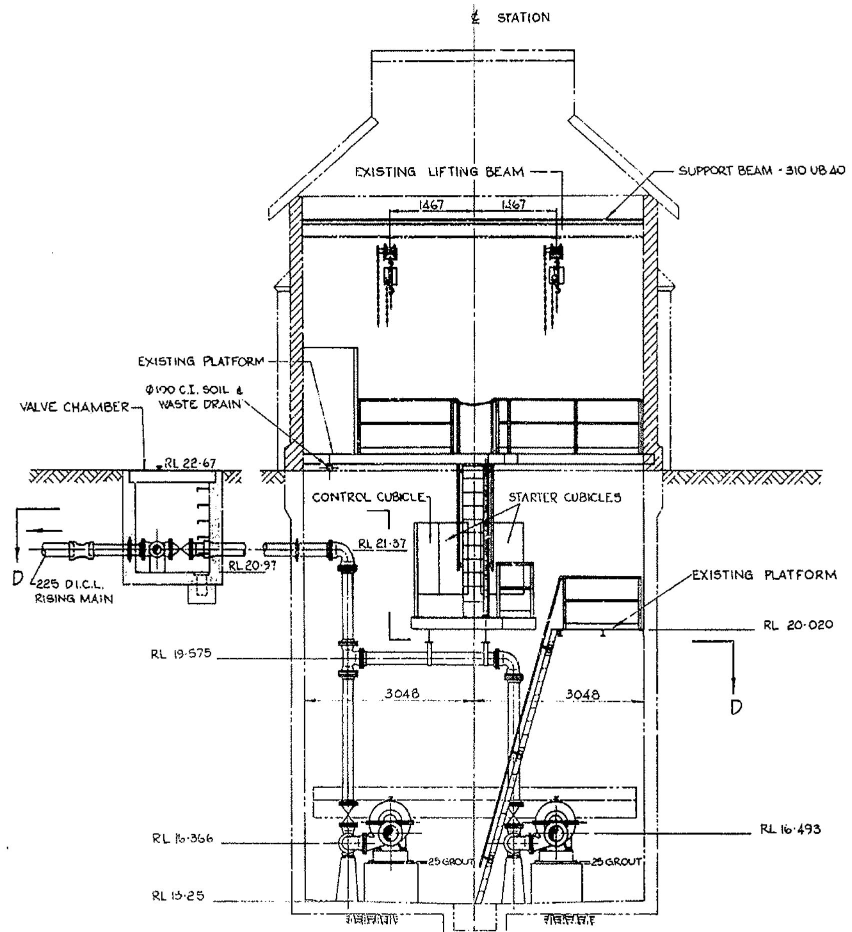
LETTER	DETAIL OF AMENDMENT	MADE BY	DATE	APPROVED BY

DO NOT SCALE

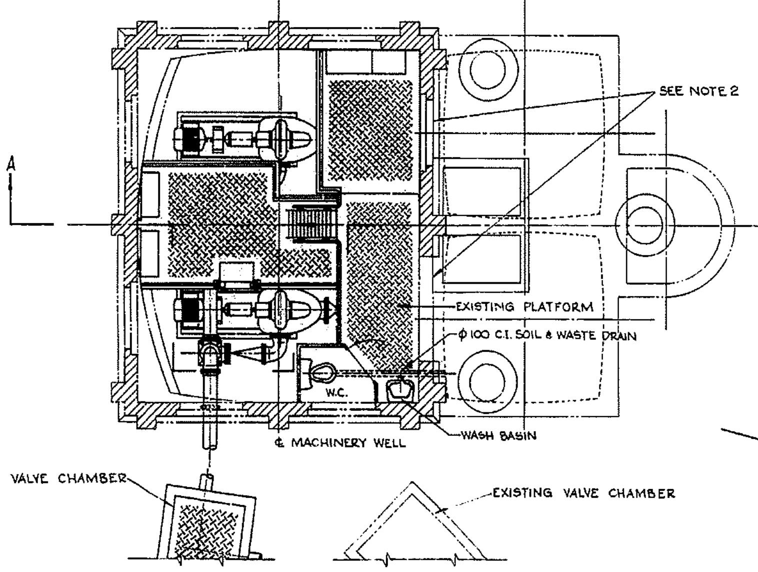


SECTION A-A

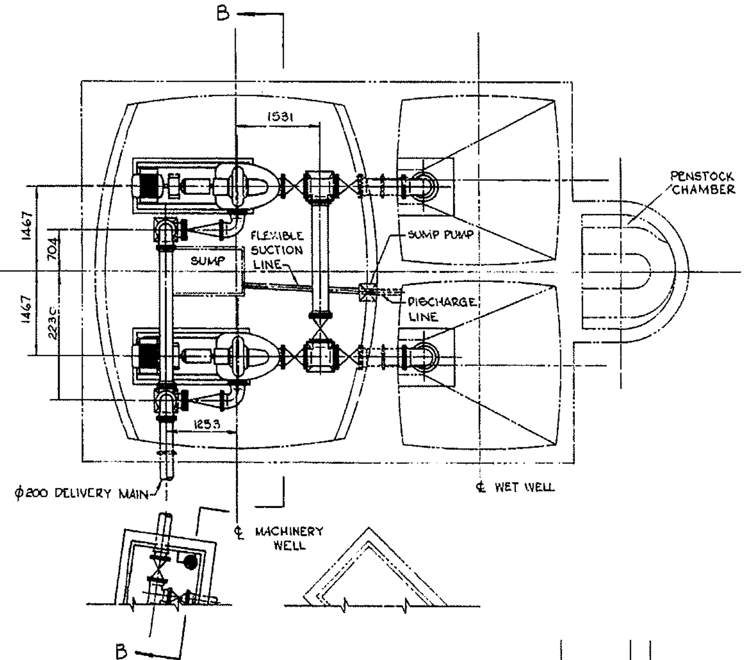
LEVELS REFER TO A PLANE 20m BELOW A.H.D.



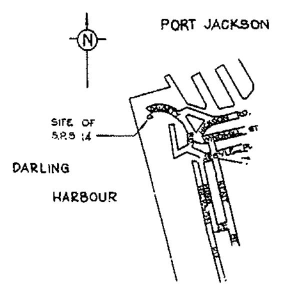
SECTION B-B



SECTION C-C



SECTION D-D



LOCATION PLAN

SCALE 1:12000

MECHANICAL DATA : CONTRACT 5911-S	
PUMP	MOTOR
MAKER: THOMPSONS-BYRON JACKSON	MAKER: SIMPSON POPE
TYPE: HORIZONTAL SPLIT CASE	TYPE: HORIZONTAL SQUIRREL CAGE
QUANTITY: 63 ℓ/s	(FRAME C225M DRIP PROOF)
HEAD: 32·7 m	kW: 37
% EFF.: 63·14	R.P.M.: 980
WEIGHT: PUMP 1050 kg ; BASEPLATE 275 kg ; MOTOR 380 kg.	
STARTER	
MAKER: JAMES WATT	
TYPE: 415V - SINGLE SPEED	
"KORNDORFFER" AUTO TRANSFORMER	

REFERENCE DRAWINGS

L.L. PUMPING STATION Nº 14 - MILLERS POINT AMPLIFICATION OF EXISTING STATION — SPS 14

MODIFICATION OF SUBSTRUCTURE 3
PIPE ARRANGEMENT 5
DETAILS OF STEELWORK 7
VALVE CHAMBER 9

NOTES

1. ALL LEVELS ARE IN METRES & REFER TO A PLANE 20m BELOW A.H.D., ALL DIMENSIONS ARE IN MILLIMETRES.
2. TWO ROLLER DOORS ~~ARE TO BE~~ PROVIDED AT THE FRONT OF THE STATION IN PLACE OF EXISTING DOORWAY & WINDOW RESPECTIVELY.
3. SUPPORT BEAMS ~~TO BE~~ PROVIDED ABOVE, & BOLTED TO, THE LIFTING BEAMS. EXISTING LIFTING BEAM TO REMAIN & BE BOLTED TO LIFTING BEAMS
4. SAFETY CHAIN ~~TO BE~~ PROVIDED AT THE TOP OF EACH LADDER
5. TOE BOARDS ~~TO BE~~ PROVIDED ON ALL PLATFORMS.
6. TOILET FACILITIES ~~TO BE~~ MOVED FROM OUTSIDE PUMPING STATION & INSTALLED WITHIN STATION AS SHOWN IN SECTION C-C.
7. EXISTING WASH BASIN ~~TO BE~~ MOVED FROM MACHINERY WELL (APPROX. RL 18·00) TO POSITION AS SHOWN IN SECTION C-C

WORK AS EXECUTED
COMPLETED 23.6.82
ASST ENGINEER P. DOLIER
OVERSEER B. TAFERNER
CONTRACTOR DAY LABOUR
DISTRICT ENGINEER
SOUTHERN DISTRICT

SCALE 1:50

METROPOLITAN WATER SEWERAGE AND DRAINAGE BOARD
SYDNEY, N.S.W.

L.L. PUMPING STATION Nº 14 - MILLERS POINT
AMPLIFICATION OF EXISTING STATION
GENERAL ARRANGEMENT

ITEM No.	W.O. 37134	AC. No. 2·2·12180	FILE No. 37/10142
DESIGNED A.H.E.	DRAWN A.H.E.	CHECKED 18/3/80	REG. No.
EXAMINED — Engineer	24/3/80 Engineer-in-Charge	ISSUE	DRAWING No. SPS 14
RECOMMENDED — Designing Engineer	APPROVED 21/3/80 R. McCann — A/Senior Designing Engineer		1

DATE OF NEGATIVE	LETTER	DETAIL OF AMENDMENT	APP'D. BY	DATE
12.5.80				

R- 82-167 B- 2372

Appendix B

SHI_SPS14

This page has been left blank intentionally

MWS & DB Pumping Station (SPS No.14)

Item

Name of Item: MWS & DB Pumping Station (SPS No.14)
Type of Item: Built
Group/Collection: Utilities - Sewerage
Category: Sewage Pump House/Pumping Station
Location: Lat:-33.8577821805619 Long:151.200039537283
Primary Address: 1A Dalgety Road, Millers Point, NSW 2000
Local Govt. Area: Sydney
Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
1A Dalgety Road	Millers Point	Sydney			Primary
61 Hickson Road	Millers Point	Sydney			Alternate

Statement of Significance

The MWS & DB Substation SPS 14 is physical evidence of the development of "modern" services in the early twentieth century, being among the original group of twenty low level sewage pumping stations constructed to serve the Bondi Ocean Outfall Sewer. The wharf area has been redeveloped in recent years and the substation is significant as it is now the only remaining evidence of the early 20th century development. It is a representative example of a well proportioned, small scale Federation industrial building in the Queen Anne style. The building is significant as an operating station in continuous use since 1904 and is one of two of its type in this style remaining in the city (the other is located in Sussex Street).
Date Significance Updated: 30 Dec 05
Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Designer/Maker: Department of Public Works
Builder/Maker: Department of Public Works
Construction Years: 1900 - 1900
Physical Description: The MWS & DB Substation SPS 14 is located within the open yard of Darling Harbour Wharf No.3. The Substation is a single storey, free standing red brick structure with hip roof featuring terracotta tiles and exposed timber rafters. The facades feature brick buttresses finished with sandstone coping and timber framed fixed sash windows with rock faced

	sandstone sills and lintels. Two steel roller shutters are located on the west facade. Steel downpipes and ventilation stacks are also visible on the facades. Internally the rendered walls are lined to simulate stone ashlar coursing. The ceiling is finished with timber boarding and timber cornice. The building sits on the bitumen tarmac of Wharf No. 3 and is surrounded by a steel mesh fence and guardrail. Category:Individual Building. Style:Federation Queen Anne. Storeys:1. Facade:Face brick & sandstone. Side/Rear Walls:Face brick & sandstone. Internal Walls:Face brick & render. Roof Cladding:Terracotta tile. Internal Structure:Load bearing walls & timber beams. Floor:Reinf. conc. slab. Roof:Timber framing. Ceilings:Timber boards. Stairs:Nil. Lifts:Nil.
Physical Condition and/or Archaeological Potential:	The building appears to be in very good condition, well maintained and secured..Intrusive Elements:Surrounding steel mesh fence and guard rail. **Date Condition Updated:** 06 Dec 05
Modifications and Dates:	c. 1900
Further Information:	High Significance: Overall building form, materials and detail. Internal layout and machinery. Medium Significance: Timber windows (not original).
	Heritage Inventory sheets are often not comprehensive, and should be regarded as a general guide only. Inventory sheets are based on information available, and often do not include the social history of sites and buildings. Inventory sheets are constantly updated by the City as further information becomes available. An inventory sheet with little information may simply indicate that there has been no building work done to the item recently: it does not mean that items are not significant. Further research is always recommended as part of preparation of development proposals for heritage items, and is necessary in preparation of Heritage Impact Assessments and Conservation Management Plans, so that the significance of heritage items can be fully assessed prior to submitting development applications.
Current Use:	Substation
Former Use:	Substation

History

Historical Notes:

The "Eora people" was the name given to the coastal Aborigines around Sydney. Central Sydney is therefore often referred to as "Eora Country". Within the City of Sydney local government area, the traditional owners are the Cadigal and Wangal bands of the Eora. There is no written record of the name of the language spoken and currently there are debates as whether the coastal peoples spoke a separate language "Eora" or whether this was actually a dialect of the Dharug language. Remnant bushland in places like Blackwattle Bay retain elements of traditional plant, bird and animal life, including fish and rock oysters.

With the invasion of the Sydney region, the Cadigal and Wangal people were decimated but there are descendants still living in Sydney today. All cities include many immigrants in their population. Aboriginal people from across the state have been attracted to suburbs such as Pyrmont, Balmain, Rozelle, Glebe and Redfern since the 1930s. Changes in government legislation in the 1960s provided freedom of movement enabling more Aboriginal people to choose to live in Sydney.

(Information sourced from Anita Heiss, "Aboriginal People and Place", Barani: Indigenous History of Sydney City http://www.cityofsydney.nsw.gov.au/barani)

The Substation in Dalgety Road was constructed c.1900 by the Department of Public Works. Commissioned in 1904, SPS 14 was one of twenty low

level sewage pumping stations to serve the newly installed Bondi Ocean Outfall Sewer which collectively ended the discharge of raw sewage into Sydney Harbour from the low lying areas around the city. Constructed as a conventional low level sewage pumping station, the single storey, simply proportioned small scale building with Queen Anne detailing was constructed over a rectangular substructure divided into a dry machinery well with two wet wells and an adjacent semi circular inlet chamber. The station is still in use and stands within the container wharfs at Darling Harbour surrounded by steel fence.

Assessment of Significance

SHR Criteria a) [Historical Significance]	Part of the development of "modern" services in the early twentieth century and part of the ongoing provision of services in the city. Has historic significance locally.
SHR Criteria c) [Aesthetic Significance]	Has aesthetic significance locally. Cultural:The substation is a small and well proportioned example of Federation style industrial building displaying Queen Anne detailing through structural expression in the facade and sandstone dressings.
SHR Criteria d) [Social Significance]	Significant for its part in the development of modern services for the city in the early twentieth century. Has social significance locally.The substation is a small and well proportioned example of Federation style industrial building displaying Queen Anne detailing through structural expression in the facade and sandstone dressings.
SHR Criteria f) [Rarity]	The wharf area has been redeveloped in recent years and the substation is now the only remaining evidence of the development of services in this part of the city in the early 20th century.
SHR Criteria g) [Representativeness]	Part of a network of industrial buildings providing sewage services to the city.
Assessment Criteria	Items are assessed against the **State Heritage Register (SHR) Criteria** to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Recommended Management

General: The form, scale, materials and detail of the structure should be retained and conserved. Surfaces never intended for painting, notably brick and sandstone should remain unpainted, while surfaces such as timber which were originally painted should continue to be painted in appropriate colours. Window and door openings should not be enlarged or filled in and replacements should be complementary to the style of the building.

Exterior: Significant fabric such as the brick facade and terracotta tiled gabled hip roof should be conserved. Significant features such as the brick buttresses and sandstone detailing should also be retained and conserved. Damaged sandstone should be properly treated as appropriate. The surrounding steel mesh fence and guard rail should be replaced by a design more complementary to the style of the building, or an alternate security system.

Interior: The joinery and timber lining should of the interior should be retained. Internal pits and surviving machinery and equipment should also be maintained and conserved.

The building should be retained and conserved. A Heritage Assessment and Heritage Impact Statement, or a Conservation Management Plan, should be prepared for the building prior to any major works being undertaken. There shall be no vertical additions to the building and no alterations to the façade of the building other than to reinstate original features. The principal room layout and planning configuration as well as significant internal original features including ceilings, cornices, joinery, flooring and

fireplaces should be retained and conserved. Any additions and alterations should be confined to the rear in areas of less significance, should not be visibly prominent and shall be in accordance with the relevant planning controls.

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Regional Environmental Plan	REP26_4				
Local Environmental Plan	CSH LEP 4		07 Apr 00	44	2972
Local Environmental Plan	Sydney LEP 2005	90	09 Dec 05	154	128

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Written	James A. Stephany, MWS & DB	1994	Thematic Heritage Survey & Comparative Analysis Water Board Pumping Stations	
Written	Anita Heiss		Aboriginal People and Place, Barani: Indigenous History of Sydney City	

Note: Internet links may be to web pages, documents or images.

(Click on Thumbnail for Full Size Image and Image Details)

Data Source

The information for this entry comes from the following source:

Name: Local Government

Database Number: 2423582

Every effort has been made to ensure that information contained in the State Heritage Inventory is correct. If you find any errors or omissions please send your comments to the **Database Manager**.

Appendix C

Modification Planning Approval 09 11 11

This page has been left blank intentionally

Modification of Major Project Approval

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

I, the Minister for Planning, modify under S.75W of the *Environmental Planning and Assessment Act 1979*, the Concept approval referred to in Schedule 1 in the manner set out in Schedule 2 and the Statement of Commitments set out in Schedule 3.

The Hon. Kristina Keneally MP
Minister for Planning

Date: 11 Nov. 2009.

MP06_0162 MOD 3

SCHEDULE 1

Concept approval for Barangaroo, East Darling Harbour (MP06_0162) granted by the Minister for Planning on 9 February 2007 comprising:

- A mixed use development involving a maximum of 388,300m^2 gross floor area (GFA), comprised of:
  - (a) a maximum of 97,075m^2 (or 25%) and a minimum of 58,245m^2 (or 15%) residential GFA;
  - (b) a maximum of 50,000m^2 GFA for tourist uses;
  - (c) a maximum of 39,000m^2 GFA for retail uses; and
  - (d) a minimum of 2,000m^2 GFA for community uses.
- Approximately 11 hectares of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions and including a 1.4km public foreshore promenade.
- A maximum of 8,500m^2 GFA for a passenger terminal and a maximum of 3,000m^2 GFA for active uses that support the public domain within the public recreation zone.
- Built form design principles, maximum building heights and GFA for each development block within the mixed use zone.
- Public domain landscape concept, including parks, streets and pedestrian connections.
- Alteration of the existing seawalls and creation of a partial new shoreline to the harbour.
- Retention of the existing Sydney Ports Corporation Port Safety Operations and Harbour Tower Control Operations including employee parking.

SCHEDULE 2

Part A – TERMS OF APPROVAL

Delete A1 and replace with:

A1 Development Description

Concept approval is granted only to the carrying out of the development solely within the Concept Plan area as described in the documents titled ***"East Darling Harbour State Significant Site Proposal, Concept Plan & Environmental Assessment (Volume 1 & 2)"*** prepared by JBA Urban Planning Consultants & SHFA (dated October 2006), amended by ***Barangaroo Part 3A Modification Report (Volume 1 & 2)*** *prepared by MG Planning Pty Ltd & SHFA (dated June 2008)* ***and amended by Barangaroo Part 3A Modification Report – Headland Park and Northern Cove*** *prepared by MG Planning Pty Ltd on behalf of Sydney Harbour Foreshore Authority and dated January 2009* including:

(1) A mixed use development involving a maximum of **489,500m²** gross floor area (GFA), comprised of:
   (a) a maximum of 97,075m² and a minimum of 58,245m² residential GFA;
   (b) a maximum of 50,000m² GFA for tourist uses;
   (c) a maximum of 39,000m² GFA for retail uses; and
   (d) a minimum of 2,000m² GFA for community uses.

(2) Approximately 11 hectares of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions and including a 1.4km public foreshore promenade.

(3) A maximum of 8,500m² GFA for a passenger terminal and a maximum of 3,000m² GFA for active uses that support the public domain within the public recreation zone.

(4) Built form design principles, maximum building heights and GFA for each development block within the mixed use zone.

(5) Public domain landscape concept, including parks, streets and pedestrian connections.

(6) Alteration of the existing seawalls and creation of a partial new shoreline to the harbour.

~~(7) Retention of the existing Sydney Ports Corporation Port Safety Operations and Harbour Tower Control Operations including employee parking until Sydney Ports confirms operations have been relocated.~~

Delete A2 and replace with:

A2 Development in Accordance with Plans and Documentation

(1) The following plans and documentation (including any appendices therein) are approved as part of the Concept Plan:
   (a) ***East Darling Harbour State Significant Site Proposal Concept Plan and Environmental Assessment (Volume 1) and Appendices (Volume 2)*** prepared by JBA Urban Planning Consultants Pty Ltd on behalf of Sydney Harbour Foreshore Authority and dated October 2006.

   Except as modified by
   (b) ***Barangaroo Part 3A Modification Report (Volume 1) and Appendices (Volume 2)*** *prepared by MG Planning Pty Ltd on behalf of Sydney Harbour Foreshore Authority and dated June 2008, and*
   (c) ***Barangaroo Part 3A Modification Report – Headland Park and Northern Cove*** *prepared by MG Planning Pty Ltd on behalf of Sydney Harbour Foreshore Authority and dated January 2009.*

(2) The following Preferred Project Report including a revised Statements of Commitment are approved:
   (a) ***Response to Department of Planning and Revised Statement of Commitments*** prepared by JBA Urban Planning Consultants Pty Ltd on behalf of Sydney Harbour Foreshore Authority and dated January 2007.

   Except as modified by
   (b) ***Preferred Project Report Barangaroo Part 3A Modification – Commercial Floor Space and Revised Statement of Commitments and Preferred Project Report Addendum*** *prepared by MG Planning Pty Ltd on behalf of Sydney Harbour Foreshore Authority and dated October 2008, and*
   (c) ***Preferred Project Report Barangaroo Part 3A Modification Report – Headland Park and Northern***

Cove *prepared by MG Planning Pty Ltd on behalf of the Barangaroo Development Authority and dated September 2009* ***and Preferred Project Report Addendum Map*** prepared by the *Barangaroo Development Authority dated September 2009 (Revision F).*

(3) In the event of any inconsistencies,
- (a) the revised Statement of Commitments in Schedule 3 of this approval prevails to the extent of any inconsistency in the plans and documentation identified in (1), and
- (b) the modifications of the Concept Plan approval identified in Part B & C Schedule 2 prevail over the documentation listed in (1), (2) and (3) (a) above.

Delete A4 and replace with:

A4 Determination of Future Applications

(1) The determination of future applications for development is to be generally consistent with the terms of approval of Concept Plan No. 06_0162 as described in Part A of Schedule 1, and subject to the modifications of approval set out in Parts A, B & C of Schedule 2, except as provided in (2) below.

Part B – MODIFICATIONS TO CONCEPT PLAN

Delete B1 and replace with:

B1. Public Domain – Northern Headland

(1) Noting the jury report recommendations on the competition winning design scheme, further detailed design plans for the northern headland are to be provided to the Department prior to or concurrently with the lodgement of the first project application for major public domain works. These are to be to the written satisfaction of the Director General.

(2) The plans identified in (1) above are to address the following requirements and objectives:
- (a) the reinstatement of a headland at the northern end of the site with a naturalised shape and form including a build up of height and a generous landscaped connection to physically link Clyne Reserve, to allow direct pedestrian access from Argyle Place and appreciation of the landform of the former headland;
- (b) encourage pedestrian permeability along the foreshore, with links to Hickson Road, Argyle Place, Towns Place and "Globe Street";
- (c) ensure adequate surveillance of the park to enhance security while limiting vehicular access into and through the park;
- (d) a welcoming aspect when approaching the northern headland from the south along "Globe Street" and Hickson Road, in landform, materials, accessibility and view lines;
- (e) public safety through the day and night considering surveillance, lighting, planting and materials; and
- (f) the impact on and the treatment of the Sewage Pumping Station.

(3) The above redesign may include provision of a public car park within the headland.

Delete B4 and replace with:

B4 Built Form

(1) Approval is given to a mixed use development involving a maximum of **489,500m²** gross floor area (GFA), comprised of:
- (a) a maximum of 97,075m² and a minimum of 58,245m² residential GFA;
- (b) a maximum of 50,000m² GFA for tourist uses;
- (c) a maximum of 39,000m² GFA for retail uses; and
- (d) a minimum of 2,000m² GFA for community uses.

(2) Despite (1) above future project applications are not to exceed the GFA, maximum residential GFA and building heights specifically identified in table (2)(a) below, except as provided for in C1(1).

(a) Development Blocks:

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7
GFA	11,800m^2	211,907m^2	85,568m^2	121,000m^2	41,225m^2	3,000m^2	15,000m^2
Residential GFA (Max)	-	20,000m^2	9,575m^2	25,000m^2	15,000m^2	-	14,000m^2
Height (Max AHD)	RL 62	RL 180	RL 112	RL 100	RL 34	RL 29	RL 35
Height above existing ground level	**60 m**	**178 m**	**110 m**	**98 m**	**32 m**	**27 m**	**33 m**

(3) The specific forms contained in *Section 13.0 - Built Form* of the EA are not approved as part of this approval. This is due to concern that appropriate street edges and forms are not provided to Hickson Road and "Globe Street" (see additional design principle below). Not approving indicative building forms also allows evolution of design excellence.

(4) Despite (3) above future project applications are to provide a comparison, and outline any variations from, the urban design principles outlined in Section 7.3.3 of the Barangaroo Part 3A Modification Report dated June 2008 and the objectives of the Performance Based Urban Design Controls set out in the Preferred Project Report Barangaroo Part 3A Modification dated October 2008.

(5) Despite (4) above future project applications are to demonstrate consistency with the Built Form Controls identified by modification B9.

(6) Future project applications for buildings within Blocks 2, 3, 4 and 5 may accommodate a redistribution of GFA (but not in excess of the total area for those blocks) resulting from the Built Form Controls identified in modification B9.

Add Modification B10 – Lightweight Bridge, floating Dock or Pontoon as follows

B10. Lightweight Bridge, Floating Dock or Pontoon

The construction of a lightweight bridge, floating dock or pontoon to facilitate pedestrian movement over the Northern Cove to continue the axis of Globe Street is to be investigated during the preparation of the further detailed design plans for the Northern Cove and these plans are to be provided to the Department prior to or concurrently with the lodgement of the first project application for major public domain works in the vicinity of the Northern Cove.

SCHEDULE 3

Proponent's Statement of Commitments

Subject	Commitments	Timing
Design Excellence Strategy	1. A Design Excellence Strategy that clearly articulates a process to achieve quality in both the private built form and the detailed design of the public domain (streets, pedestrian connections, parks and squares) is to be prepared. 2. The Design Excellence Strategy may include the preparation of site specific design guidelines, articulate a process(es) for the conduct of design competitions for major developments and the design of public open spaces, and / or establish a competitive tender process for individual development site(s). 3. A Technical Working Group is to be established to prepare the Design Excellence Strategy. The membership of the Working Group is to be determined by the proponent team and the Barangaroo Taskforce or equivalent body (under its terms of reference dated 26 November 2006). 4. The Terms of Reference for the Technical Working Group is to be consistent with the requirements for preparation of the Design Excellence Strategy specified in this Statement of Commitments and are to be endorsed by the Barangaroo Taskforce or equivalent body. 5. The Design Excellence Strategy 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 will report to the Barangaroo Delivery Authority Board on recommendations from the Working Group. 6. Following endorsement, the Design Excellence Strategy is to be made publicly available in a manner to be determined by the Barangaroo Taskforce or equivalent body.	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application relating to buildings or to the establishment of the public domain, other than for demolition or early/site preparation work and remediation.
Provision and Financing of Social and Physical Infrastructure	7. The following Implementation Plans will be prepared for the site as a whole and / or for specific components or stages of the project: ▪ Public Domain Plan(s); ▪ Transport Management Plan & Access Plan; ▪ Community & Social Plan(s); and ▪ Utility Services Infrastructure Plan(s). 8. The Implementation Plans are to: ▪ Verify the scope and accurately cost all of the social and physical infrastructure needed to support the proposed development. ▪ Identify the relevant requirements for timing and staging of provision of that facility, service or physical infrastructure. ▪ Identify any relevant Government agency policy initiatives that will need to be in place to deliver specific outcomes. ▪ Provide details with respect to the funding mechanism(s) for delivery of the identified infrastructure. ▪ Provide sufficient detail to enable the proponent to enter into planning agreements with developers, relevant Government agencies, the City of Sydney	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application relating to buildings or to the establishment of the public domain, other than for demolition or early / site preparation work and remediation.

Subject	Commitments	Timing
	Council and / or the Minister for Planning if and as required, to collect contributions for the provision of infrastructure either through a cash contribution or works-in-kind or both.	
	9. Technical Working Groups are to be established to prepare the Implementation Plans. The membership of the Working Groups is to be determined by the proponent team and the Barangaroo Taskforce (under its terms of reference dated 26 November 2006) or equivalent body, and may include or consult with representatives from the Sydney Harbour Foreshore Authority, Department of Planning, City of Sydney Council, State Transit Authority, Sydney Ferries Corporation, Railcorp, Sydney Ports, NSW Maritime, Department of Housing, NSW Roads and Traffic Authority, Sydney Water and / or other infrastructure providers as is determined appropriate. 10. Terms of Reference for the Technical Working Groups are to be consistent with the requirements for preparation of the Implementation Plans specified elsewhere in this Statement of Commitments and are to be endorsed by 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 Groups. The proponent will report to the Barangaroo Delivery Authority Board on recommendations from the Working Groups. 11. The Implementation Plans may be updated throughout the development of the project. Following endorsement, the Implementation Plans are to be made publicly available in a manner to be determined by the Barangaroo Taskforce or equivalent body.	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application other than for demolition or early / site preparation work.
Public Domain Plan	12. The Public Domain Plan/Plans referred to at Commitment 7 is to include the following as generally described in the Concept Plan: ▪ An introductory explanation for the types, hierarchy, interrelationships of spaces, and the appropriateness of these spaces to the end users of the public domain. ▪ A new Headland Park. ▪ Waterfront parks and squares. ▪ A foreshore promenade. ▪ An informal sports playfield. ▪ A north-south pedestrian promenade street. ▪ An internal street system that 1) defines development blocks, 2) provides for the easy flow of people and vehicles, 3) acts as a comfortable stage for activity and human interaction, 4) creates a distinctive address for each new development building, and 5) creates a connection between Hickson Road and the harbour edge. ▪ On-street bicycle lanes to create a route utilising Napoleon Street, the Napoleon Street extension, and the proposed Globe Street. ▪ An off-street cycle route within the Headland Park to link between proposed Globe Street and Hickson Road (north). ▪ Shared use of the pedestrian promenade street by bicycles. 12A. Within the framework of the Public Domain Plan, a Headland Park Sub-Plan (HP Sub Plan) will be prepared for the Headland Park. The will address the following:	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application other than for demolition or early / site preparation work and remediation. To be prepared as part of future Project Application for the Headland Park

Subject	Commitments	Timing
	▪ all planning, accessibility and design issues related to the connectivity of the Headland Park to its surrounding environment; ▪ incorporate traffic and transport planning, event management and recreational capacity ▪ proposals and options to increase cultural experiences at the Headland Park ▪ measures to provide for diverse activation of the parklands while being sensitive to local community needs ▪ Crime Prevention Through Environmental Design (CPTED) safety strategies ▪ heritage conservation and adaptive reuse as part of the urban and landscape design, including management and interpretation (refer also SoC No. 60) ▪ Sustainability program for the Headland Park at design, construction and operations stages 12B. To inform the preparation of the HP Sub Plan for the Headland Park a Recreational Plan will be prepared which will consider the following: ▪ the desires of the general and local communities ▪ transport needs and connections ▪ activation of the parkland spaces ▪ cultural and recreational needs ▪ the park location and space capacity constraints including the relationship to the increasing population of the city and Barangaroo ▪ universal access ▪ operation times, events and management 13. The Public Domain Plan/Plans is to provide design details with respect to the following: ▪ Indicative levels in the parks, edge conditions of parks and pedestrian connections through parks. ▪ Materials and planting. ▪ Safe and convenient walking routes and facilities. ▪ Street furniture. ▪ Design standards for the road network (dimensions, materials, drainage), kerb parking and loading spaces, crossings, cycling and taxi facilities, including bicycle parking facilities). All extensions to the existing road network within the Barangaroo site are to comply with the geometric requirements of the RTA road design guide. ▪ The mix of parking/loading/other kerb controls. ▪ Design requirements/guidelines for integrated water management/water sensitive urban design consistent with the Integrated Water Management Plan referred to at Commitment 22. ▪ Design requirements and details relating to the recreational facilities as referred to at Commitment 18. ▪ Requirements for a public parking structure of up to 300 car spaces in the Headland Park area. 14. The Public Domain Plan is to incorporate a Public Art Strategy. 15. In addition to the general matters specified at Commitment 8, the Public Domain Plan is to address: ▪ The future ownership and maintenance of parks.	To be prepared as part of future Project Application for the Headland Park

Subject	Commitments	Timing
	▪ The feasibility, both conceptually and financially, of establishing the elevated Headland topography.	
The Transport Management and Access Plan.	16. The Transport Management & Access Plan (TMAP) referred to at Commitment 7 is to be prepared following: ▪ An assessment of the area wide traffic impacts of the development on the Sydney CBD road network using the RTA's PARAMICS traffic model (including the effects of changes to the bus service network). ▪ The preparation of the TMAP or equivalent to investigate the following: (a) a cohesive street network connecting land use components and local roads within and to CBD streets and regional roads; (b) the method by which traffic estimation figures are generated; (c) identification of public transport service opportunities and constraints with a view to encouraging a high level of travel by public transport, walking and cycling; (d) likely traffic impacts on local and regional intersections – including the key junctions for buses on Clarence at Market Street, York at Market Street, and Napoleon at Margaret Street; (e) identification of local and regional infrastructure improvements; (f) the timing of traffic and public transport infrastructure improvements so they are in line with the staged development of the Barangaroo site. The PARAMICS model is to be used in an iterative manner during the preparation of a TMAP or equivalent to test: (a) impact on traffic operation of changes to pedestrian movements and volume configurations; (b) different bus access strategies; and (c) variations in traffic generation estimates (depending on the relative attractiveness of pedestrian, rail, and bus access). The outcomes of the area wide traffic impact modeling are to form part of the consideration of the physical road transport infrastructure to be addressed in the preparation of the TMAP. 17. The Transport Management & Access Plan is to consider and address the following matters: ▪ Design and construction of a traffic signal controlled intersection at Sussex Street / Napoleon Street, to facilitate the main point of vehicular entry into the development site intersection (to RTA requirements). ▪ The feasibility of future specialist transport services to the site (including light rail, boutique tourist bus services, river metro route) and the need to protect possible future alignments for these services. This is to include a possible future light rail system with appropriate reservation of road space on Hickson Road. ▪ Off-site improvements that will facilitate pedestrian and cycle access between the site, Wynyard Railway Station, Millers Point, the Rocks, Circular Quay and Dawes Point. This is to include	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application other than for demolition or early / site preparation work and remediation.

Subject	Commitments	Timing
	consideration of pedestrian links to existing bus services and the potential for grade separated connections between the site / Hickson Road and Wynyard Station, which will meet pedestrian desire lines and provide physical linkages to the adjoining residential area of Millers Point, which will facilitate easy access to and regular use of services, facilities and public spaces at Barangaroo by existing local communities. Consideration of off-site pedestrian improvements is only where those improvements can be demonstrated to positively improve the amenities of the proposed development and its connections to surrounding developments. Consideration of more general public domain improvements for the benefit t of the wider CBD is not required. ▪ Options for the extension / amendment of bus services. Initial options include extensions to services from QVB, and east-west bus link (Erskine Street, Wynyard Street and Regimental Square) and services which currently terminate at Wynyard. This is to include consideration of the need for any off-site traffic works to provide for improved east –west bus movements relating to servicing of the site. ▪ Any options for extended bus services to the site will be subject to endorsement by the Ministry of Transport (MOT), State Transit Authority (STA) Services will be progressively provided in line with the staged development of Barangaroo. ▪ Bus stops and access, including the location of bus stops along Hickson Road, and any relocation of existing stops. ▪ Provision of off-road layover facilities for buses and for coach drop off and parking, including the need for on-street tourist coach parking facilities at the northern end of the site (in Hickson Road and Munn Street). ▪ Provision of passenger wharf facilities, including at least one public ferry wharf with appropriate landside facilities adjacent to the site. The role of this commuter / tourist / recreational wharf, and possible adjustments to ferry services is to be the subject of consultation with Sydney Ferries / MOT / NSW Maritime / Sydney Ports Corporation. ▪ Feasibility of creating a westward extension of Grosvenor Street to Kent Street and provision of two way vehicular access on Kent Street. ▪ Re-alignment and / or retention of Margaret Street along the southern boundary of the site and land use implications of such changes. ▪ Desirability of replacing existing all day (10 hour) on-street parking in Hickson Road by parallel shorter term parking	
Community & Social Access Plan	18. The Community & Social Plan/Plans referred to at Commitment 7 is to include the provision of the following facilities within the Barangaroo site: **Social** ▪ A multi-purpose facility designed to accommodate a range of community programs. The facility will have the capacity to accommodate an innovative mix of functions and tenancies, including complimentary commercial concessions, and with the potential to respond to changing social needs. ▪ A minimum of two long day-care and early learning centres. **Health** ▪ A range of outdoor spaces, linkages and facilities	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application other than for demolition or early / site preparation work and remediation.

Subject	Commitments	Timing
	designed to enable active recreation including walking / jogging, informal team sports, outdoor exercise, court games, and non-motorised water sports. ▪ A range of outdoor spaces, structures and / or buildings for relaxation, social interaction and passive recreation. **Cultural** ▪ Consideration of floor space for cultural industries and or cultural industries development. This may be achieved in conjunction with the development of community infrastructure. ▪ A flexible outdoor venue for city scale cultural events. **Recreation** ▪ A harbour foreshore walk / cycle path linking King Street Wharf with Millers Point. ▪ Active sports areas and associated toilet, change and shower facilities. ▪ A regional play space with an innovative, engaging mix of facilities and environmental features to function as a major destination for families. ▪ Public open spaces immediately adjacent to residential areas designed to allow a range of passive recreation activities attractive to residents and regional visitors. ▪ Well-designed pedestrian linkages allowing easy and safe access to recreational spaces and facilities from commercial and residential areas within East Darling Harbour and from Millers Point, Walsh Bay, Kent Street, and King St Wharf. 19. Design requirements and details relating to the facilities noted at Commitment 18, and in particular to the health and recreation facilities are to be incorporated into the Public Domain Plan.	
Utility Services Infrastructure Plan	20. The Utility Services Infrastructure Plan/Plans referred to at Commitment 7 is to include and provide details in relation to the following within the Barangaroo site: ▪ Infrastructure requirements for integrated water management, including stormwater treatment, as determined through the preparation of the Integrated Water Management Plan referred to at Commitment 22; ▪ Type, extent and location of utility services (power, gas, water, sewer, stormwater, communications) consistent with the ESD principles and other commitments incorporated within this Statement of Commitments; ▪ Coordinated response to infrastructure design and delivery on the site and consideration of infrastructure benefits to the adjoining precincts. 21. As part of the preparation of the Utility Services Infrastructure Plan: ▪ Further investigations are to be undertaken with respect to the existence of any services (such as pipes and cables) and structures within the Barangaroo site. Consultation with Railcorp is to be undertaken on this issue. ▪ Locations for electricity sub-stations and transformers are to be examined. No sub-stations or transformers are to be placed in above ground public domain areas, but instead installed underground or in-buildings.	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application other than for demolition or early / site preparation work and remediation.

Subject	Commitments	Timing
	▪ Appropriate investigations are to be undertaken to ensure that the impact on safety, integrity and operation of NSW rail network – through the development's effect on traction (electrical) power supply on the operation of current City underground rail network – is appropriate.	
Integrated Water Management Plan & Guidelines Potable Water Demand Management Wastewater Minimisation Stormwater Management	22. An Integrated Water Management Plan/Plans is to be prepared for future development. The Integrated Water Management Plan is to incorporate a Water Demand Management Plan, Wastewater Management Plan and Stormwater Management Plan. The public domain and infrastructure provision requirements identified in the Integrated Water Management Plan are to be incorporated into the Public Domain Plan and / or Utility Services Infrastructure Plan as relevant. 23. The Water Demand Management Plan/Plans is to include an investigation of possible schemes to reduce potable water demand through source substitution. A "fit-for-purpose" approach to alternative sources of water for substitution of potable mains water for non-potable use will be used to scope the Plan. In line with BASIX (and extending to commercial properties), water efficient appliances and fixtures are to be used for potable water demand management throughout the development. 24. The Wastewater Management Plan/Plans is to include an investigation of schemes to manage wastewater from the residential and commercial buildings as a resource, with wastewater treated and recycled as an alternate source of non potable water, especially with regard to public open space irrigation. 25. The Stormwater Management Plan/Plans is to include an investigation of the feasibility of on-site treatment of stormwater from external catchments at Millers Point, to national best practice standards. Where feasible, harvested stormwater is to be used to meet non-potable demand. Stormwater leaving the EDH site will be treated to national best practice standards as a minimum, specifically reducing average annual loads of total suspended solids by 80% and nutrients by 45%. In addition, litter and gross pollutants are to be removed from stormwater running into the harbour. Opportunities to integrate the design of Water Sensitive Urban Design (WSUD) elements (such as detention ponds) into the public domain, parks and built form are to be explored.	To be prepared prior to / concurrently with the preparation of the Public Domain Plan and Utility Services Infrastructure Plan, and submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application other than for demolition or early / site preparation work and remediation.
Housing Strategy	26. A Housing Strategy is to be prepared that: ▪ Identifies the preferred mix of housing opportunities defined by price, dwelling type and dwelling size. ▪ Incorporates intermediate housing tenure options. ▪ Sets a suitable intermediate housing component as a proportion of total housing provision. ▪ Includes a range of mechanisms to subsidies the development of the intermediate housing component. ▪ Retains land provided for intermediate housing in Government ownership with leases up to 99 years. 27. A Technical Working Group is to be established to prepare the Housing Strategy. 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.	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application for development within the Mixed Use Zone other than for demolition or early / site preparation work.

Subject	Commitments	Timing
	28. The Terms of Reference of the Technical Working Group is to be consistent with the requirements for preparation of the Housing Strategy specified in this Statement of Commitments and endorsed by the Barangaroo Taskforce or equivalent body. 29. The Housing Strategy 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. 30. Following endorsement, the Housing Strategy is to be made publicly available in a manner to be determined by the Barangaroo Taskforce **or** equivalent body.	
Marketing and Promotion Strategy	31. A Marketing and Promotion Strategy/Strategies is to be prepared to promote Barangaroo's and the broader Sydney region's development opportunities to international companies, investors and property brokers. The Strategy will cover the lifespan of the redevelopment and focus on attracting investment from outside the Sydney region and State. The Strategy will emphasise the unique attributes of the site such as the lifestyle and workforce skills available in this urban waterfront precinct. 32. A Technical Working Group is to be established to prepare the Marketing and Promotion Strategy. 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. 33. The Terms of Reference of the Technical Working Group is to be consistent with the requirements for preparation of the Retail Marketing and Promotion Strategy specified in this Statement of Commitments and endorsed by the Barangaroo Taskforce or equivalent body. 34. The Marketing & Promotion Strategy/Strategies is to be submitted by the Working Group to the Barangaroo Taskforce Delivery Authority. 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. 35. Following endorsement, the Marketing & Promotion Strategy is to be made publicly available in a manner to be determined by the Barangaroo Taskforce or equivalent body.	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application for development within the Mixed Use Zone other than for demolition or early / site preparation work and remediation.
Retail Management Plan	36. A Retail Management Plan is to be developed to guide and encourage the right mix of retail that will establish EDH as a distinctive retail precinct. The Plan will outline innovation management strategies, foster design leadership, and encourage originality and differentiation. 37. The Retail Management Plan is to be drafted to adapt to retail trends and changes over time by having in place a set of coordinated retail management	To be submitted to the Barangaroo Taskforce or equivalent body prior to the lodgement of any relevant project application for development within the Mixed Use Zone other than for demolition or early / site preparation work and remediation.

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.

Subject	Commitments	Timing
	Barangaroo Taskforce or equivalent body will report to the IPCC on relevant matters as recommended by the Working Group. The Project Team will report to the Barangaroo Delivery Authority Board on recommendations from the Working Group. 75. Following endorsement, the RAP is to be made publicly available in a manner to be determined by the Barangaroo Taskforce or equivalent body.	
Residential Amenities	76. Building Types: In terms of the classifications under the Residential Flat Design Code (RFDC) , generally the residential buildings on the Barangaroo site are to consist of Row Apartment, Courtyard Apartment, Slab (Block), Tower and Hybrid building types. 77. Building Heights, Floor Space Ratios and Setbacks: All building heights and setbacks are to comply with the development block envelope controls contained within the Concept Plan. 78. Building Separation: Building separations should have regard to separation distances set out in the RFDC. Where smaller separation distances are provided consistent with the Concept Plan urban design envelopes, the amenities, privacy and solar access to existing and proposed dwellings and the public domain need to be adequately considered. 79. Landscape Design: Generally, landscape spaces for future residents of Barangaroo will be in the form of roof terraces and balconies. All private landscape design should be consistent with the design principles set out on pp46-47 of the RFDC. Due to the frontage of the extensive new harbour-side park, the proposed street tree planting and the adjacency to the city centre, there is no requirement for deep soil planting within blocks. 80. Apartment Mix: Housing across the Barangaroo site should provide a variety of types, sizes and configurations. Flexible live / work housing types are highly appropriate for the city centre fringe location. 81. Solar Access: Living rooms and private open spaces for at least 70 % of apartments in a development should receive a minimum of 3 hours direct sunlight between 9 a.m. and 3 p.m. in mid-winter. For up to 30 % of dwellings, 2 hours is required (excluding south-facing units). 82. Single Orientation Apartments: Apartment buildings should aim to maximise cross ventilation. The number of single aspect apartments with a southerly aspect (SW-SE) should be limited to a maximum of 10 % of the total units proposed. Developments which seek to vary from the minimum standards must demonstrate how site constraints and orientation prohibit the achievement of these standards and how energy efficiency is addressed.	To be demonstrated / assessed in any relevant development application / project applications for residential development.
Acoustic	83. All future development application / project applications will be required to include a Noise Impact Assessment & Mitigation Measures report. All noise emissions from a building's plant and equipment are to be at levels complying with the recommendations of the NSW EPA Industrial Noise Policy. When setting noise emission limits for each site, the cumulative impact of	Noise Impact Assessment and Mitigation Measures report to be submitted with all relevant development application / project applications.

Subject	Commitments	Timing
	noise emissions from all the sites in the fully developed precinct shall be taken into account. 84. Any future traffic management plans will incorporate strategies that minimise transportation noise levels associated with vehicle movements. 85. To prevent negative impacts resulting from the ordinary operation of the passenger terminal and other community facilities, the envelope of buildings constructed within Barangaroo should be designed to limit sound intrusion from these noise sources. Typical noise levels in occupied spaces adjacent to these noise sources during peak usage periods should comply with the recommended noise levels in AS2107. 86. Plans of management developed for noise generating community facilities shall contain measures that seek to balance the use of these facilities with the amenities of nearby potentially sensitive land uses. 87. Where deemed appropriate, the facades of new residential and commercial buildings along Hickson Road should be designed to reduce traffic noise levels in occupied spaces in accordance with the levels recommended in AS 2107. 88. Noise emissions from patrons within proposed licensed premises will be assessed during development approval against Liquor Administration Board Guidelines and appropriate plans for managing patrons' arrival / departure developed. 89. All future development application / project applications will be required to include a Construction Management Plan incorporating measures for managing construction noise and vibration emissions including time limits on audible construction activities.	
Built Form	90. The built form of each development block will follow the Design Principles, Design Requirements, and Development Controls as set out in Part B and as amended by the Barangaroo Modification Report dated June 2008 prepared by MG Planning. Final designs for each development block will be prepared by development partners who will be subject to the Design Excellence Strategy. 91. The built form of development Blocks 2 to 5 inclusive shall be consistent with the performance based urban design controls contained in Table 1 to Section 2.1.1 of the Barangaroo Part 3A Modification Report – Commercial Floor Space Preferred Project Report prepared by MG Planning dated October 2008. In cases where the design is not consistent with the control objectives, justification should be given as to why the control was not applicable and what attributes of the design have been provided in lieu to ensure that the Built Form Principles of the Consolidated Concept Plan or design excellence can be achieved.	To be demonstrated / assessed as part of any development application / project application for commercial use. As above
Commercial Uses	92. All future development applications for commercial uses will be required to address how the proposal: ▪ Complements, connects with and extends the commercial activity of the existing Sydney CBD; ▪ Contributes to the character of Barangaroo as a unique business address;	To be demonstrated / assessed as part of any development application / project application for commercial use.

Subject	Commitments	Timing
	▪ Offers opportunities for major corporate tenants; ▪ Where appropriate includes a mix of support related commercial and retail offerings such as convenience retail, personal services, cafes, bars and health and recreation facilities; ▪ Enhances and encourages walking and cycling and connectivity to public transport services; ▪ Provides a clear interface to the public domain and includes publicly accessible open space or pedestrian connections and arcades within the private development.	
Sydney Ports Consultation	93. Sydney Ports Corporation shall be consulted on all aspects of the Barangaroo redevelopment that affect the operation of the Wharf 8 Passenger Terminal, any additional passenger terminal, the harbour control tower and the harbour safety function in the Moore's Wharf building, including potential use of the new harbour inlet by non-motorised recreational craft. 93A Transfer of the HCT to Barangaroo Delivery Authority will not be undertaken until such time as Barangaroo Delivery Authority and Sydney Ports are satisfied on selection of an alternate suitable site and the transfer of existing equipment and staff along with uninterrupted operations under the Port Safety Operating License. 94. Sydney Ports Corporation shall be consulted on the detailed exclusion zone requirements for the Wharf 8 Passenger Terminal at future project application stages of development. 95. The operation of the Wharf 8 Passenger Terminal will continue uninterrupted during its temporary relocation while the final new building is constructed and during the relocation back to the existing location in the new facilities. 96. Moores Wharf and the Harbour Control Tower will be fenced off for security purposes prior to future public access on site. 97. Sydney Ports and NSW Maritime shall be consulted regarding any proposals associated with Port Operational Requirements that result in the extension of structures alongside or over water into Sydney Harbour. 98. Future car parking for the Wharf 8 Passenger Terminal will be provided consistent with the current car parking provisions for the facility, and subject to the needs of the future terminal.	Subject to consultation with Sydney Ports
Ongoing Consultation and Information	99. Ongoing consultation with Government agencies including City of Sydney Council (Strategic Planning Department, Community Services and Programs Unit and Recreation and Community Services Unit), Department of Housing NSW, NSW Maritime, Railcorp, Sydney Ports, NCOSS, private landowners, and community stakeholders will take place according to established planning and development approval procedures. 100. NSW Maritime will be consulted in relation to the following: ▪ Any proposal that has the potential to impact upon navigational safety. ▪ The potential to expand ferry and charter boat	Ongoing

Subject	Commitments	Timing
	operations within the redevelopment site. ▪ On-going maintenance of seawalls, launching and berthing facilities. ▪ Proposed encroachments into NSW Maritime's land at Darling Harbour. ▪ The development of the proposed coves and inlets which will become part of the navigable waters of Sydney Harbour. ▪ Other issues which will inevitably arise from the interface with NSW Maritime's land. ▪ Port security matters. 101.Further consultation and information sessions will be held as necessary to communicate the redevelopment process and to ensure all stakeholders have the opportunity to keep up to date on the progress of the redevelopment.	
CPTED	102. All future development is to be designed in accordance with the principles of the Crime Prevention Through Environmental Design.	To be demonstrated / assessed as part of any relevant development / project application.
Construction	103. An Environmental and Construction Management Plan will be required as part of any future development on the site. 103A. All construction contractors, subcontractors and personnel are to be inducted and informed by the nominated heritage consultant/s prior to commencing work on site as to their obligations and requirements in relation to historical archaeological sites and 'relics' in accordance with existing guidelines issued by the Heritage Council of NSW. 103B. Significant heritage items and built elements that are to be retained are to be adequately protected during the works from potential damage. Protection systems must ensure historic fabric is not damaged or removed.	To be demonstrated / assessed as part of any relevant development / project application.
Headland	104. The future detailed design of the Headland Park including the northern cove, Globe Street and adjacent Block 7 is to be prepared in accordance with the Headland Park Urban Design Framework and Preferred Project Parkland Objectives detailed in the "Barangaroo Headland Parklands Urban Design Report" prepared by Conybeare Morrison (August 2009).	To be demonstrated as part of any project application which relates to the Headland Park and surrounds.

Appendix D

Preferred Option H1

This page has been left blank intentionally

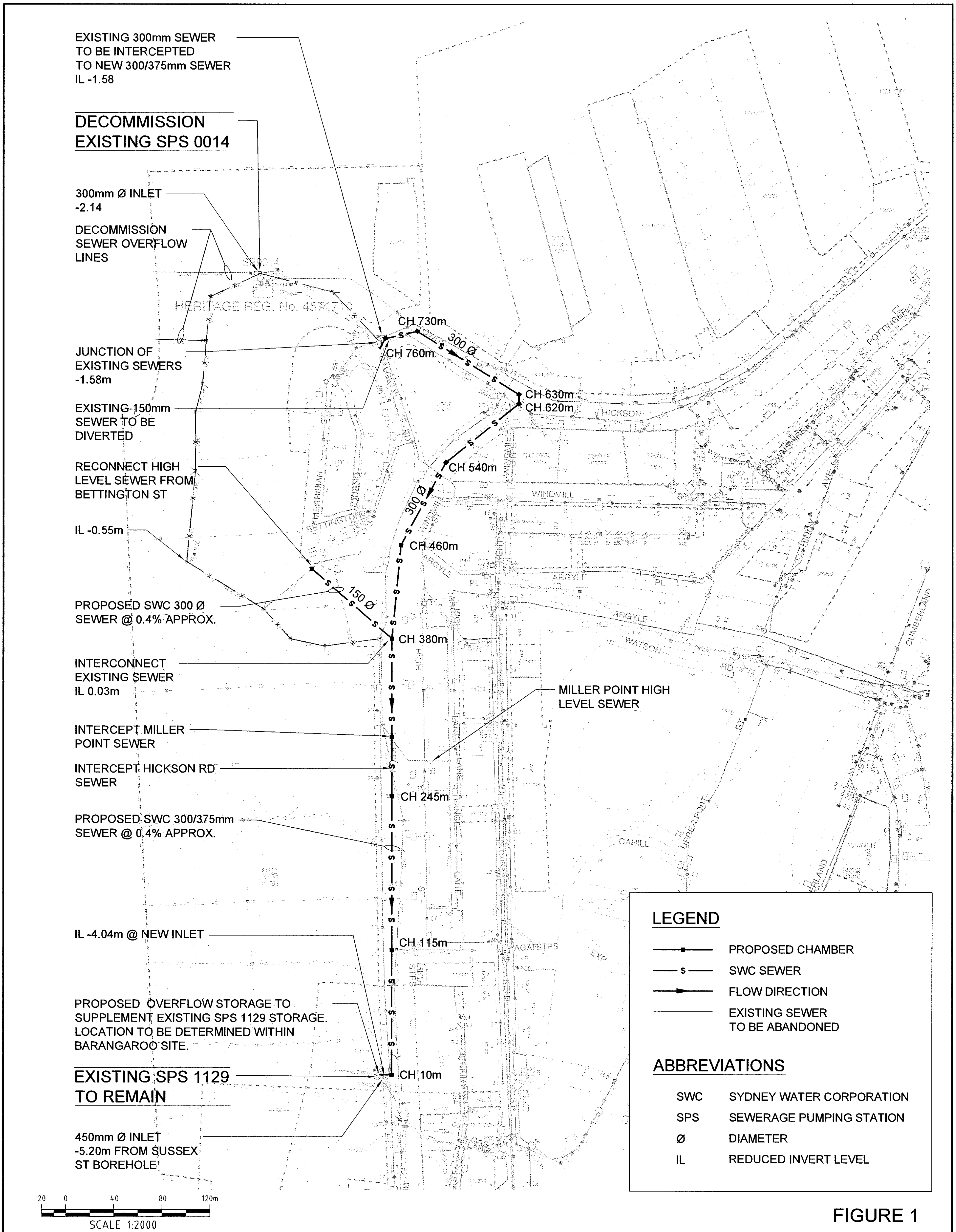


FIGURE 1

DO NOT SCALE FROM DRAWINGS. CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.

THIS DRAWING IS NOT TO BE COPIED IN PART OR WHOLE WITHOUT WRITTEN PERMISSION FROM WARREN SMITH AND PARTNERS.

NORTH POINT

NOTES

1. THIS FIGURE SHALL BE READ IN CONJUNCTION WITH WSP REPORT HEADED FEASIBILITY STUDY OF SYDNEY WATER SEWERAGE PUMPING STATION SPS 0014 AND ASSOCIATED NETWORK

ISSUE	AMENDMENT	DATE
A	FEASIBILITY STUDY - DRAFT REPORT	28.4.10

CLIENT

BARANGAROO SYDNEY AUSTRALIA

Barangaroo Delivery Authority
Level 3, Foreshore House
66 Harrington Street
Sydney 2000
NSW Australia

PROJECT

FEASIBILITY STUDY OF SYDNEY WATER SEWERAGE PUMPING STATION SPS 0014 AND ASSOCIATED NETWORK

Warren Smith & Partners Pty Ltd
A 1st Floor, 123 Clarence Street, Sydney 2000 NSW Australia
T 02 9299 1312 F 02 9290 1295 E wsp@warrensmith.com.au
ABN 36 300 430 126

SERVING THE CONSTRUCTION INDUSTRY SINCE 1981

Consulting Engineers
Hydraulic Services | Civil Engineering | Fire Protection | Sydney Water Accredited • Water Servicing Co-ordinator • Design and Project Management

TITLE

OPTION 1:
GRAVITY SEWER TO SPS 1129
DECOMMISSION SPS 0014

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
1:2000 @ A2	R.B.	L.P.	L.P.	

DATE	DRAWING No.	ISSUE
APR 2010		A

JOB No. 3589

Xrefs: 3589_A1V; 3589_A2V

SHEET SIZE: A2

Appendix E

Structural Report

This page has been left blank intentionally

shreeji consultant P/L
structural civil engineers ABN 94 095 027 320
PO Box 747
Turramurra NSW 2074
Australia
w shreejiconsultant.com
e mail@shreejiconsultant.com
p/f +61 2 9487 4889

Our Ref: 095802b

SPS 14, BARANGAROO - PROPOSED RELOCATION FEASIBILITY REPORT – STRUCTURAL

01.00 INTRODUCTION

Sewerage Pumping Station 14 is located in Millers Point and enclosed in the boundaries of the proposed Barangaroo Development. The station is a Heritage listed structure and several considerations are put forward for its future. This report assesses the considerations for burying and relocation of the structure from its existing location to another yet to be decided location.
Inspection commissioned by the Barangaroo Delivery Authority was undertaken on 4th March 2010 to assess review the existing structure. The inspection was limited to visual observations on foot and no access was possible to the lower level of the station. No parts of the building fabric were opened up.

02.00 OBSERVATIONS

02.01 Super Structure

The Pumping Station Building structure is about 6.60 meters by 5.50 meters on plan and rises about 4.85 meters above ground level. It is a single storey load bearing brick fabric with the roof covered with clay tiles on conventional timber framed roof. The south, east and west elevations have two window openings and the north has two door openings with roller doors. The north window on the west elevation has been bricked up. The brickwork is solid 230mm thick brick work with engaged piers on the outside at ends of the walls and at mid-length between openings on all sides.
The windows have sandstone lintels and sills, the engaged piers have sandstone weathering cap and the door openings have sandstone lintels. The sandstone elements have weathered to varying degrees, the pier weathering caps most affected showing signs of delaminating.
The sill to the north window on the east façade has a through crack.
The sides to the door openings have had some work done to them as observed by new bricks and repointing.
Cracks are observed at the base of the pier on north elevation and above and below the north window on the east elevation. These cracks go through the mortar joints in the brickwork. The brickwork mortar joints have weathered.
The roof is covered with clay tiles and on the inside the ceiling is a timber boarded.
On the inside there are several steel beams straddling the wall.

02.02 Sub Structure

The sub structure is a pit the same plan dimensions as the station about 7.45 meters deep with additional pits on the north of the station. The external pits have a common wall to the internal pit and go to the same depth as the internal pit.

The internal pit has a metal floor covering half of the floor on the door side. Access to the lower level of the pit is via a metal stair and platform system. The pit houses mechanical plants.

PO Box 747
Turramurra NSW 2074
Australia
w shreejiconsultant.com
e mail@shreejiconsultant.com
p/f +61 2 9487 4889

03.00 COMMENTS

The super and sub structure to the station are in good condition except for minor repairs such as repointing of brick mortar joints and repair/replacement of weathered sandstone units. It is assumed that the substructure is in reinforced concrete.

Burying the structure insitu or relocating the structure can be considered for the building.

03.01 BURYING THE STRCUTURE INSITU

The structure can be buried in its existing location and exposed at later date when required. The burying can be undertaken in cement-stabilized sand to achieve full compaction. The filling in the structure is to be balanced by the fill not to create uneven lateral pressures on the walls.

The timber and steel elements will deteriorate and perish once buried and are to be treated for some protection and are to be fully recorded.

03.02 RELOCATION OPTIONS

Two Options for relocating the station could be considered.

03.02.01 RELOCATION OPTION ONE

Super Structure
Record and label each and every element and take down carefully the existing structure element by element. Rebuild the station from the records and in compatible mortar.
Sub Structure
The substructure being in concrete it will require to be cut in to manageable panels, taken out and reassembled and stitched in the relocation position.

03.02.02 RELOCATION OPTION TWO

Lift the existing structure as a whole unit and transport it to the relocation position. It will be prohibitive to lift the structure from under the base of the station, but the superstructure can be lifted on a base of part of the pit. The depth of the pit to be retained can be reviewed and decided upon.

03.03 COMMENTS ON THE OPTIONS

03.03.01 BURYING THE STRUCTURE INSITU

In this considerations, the structure will be lost for some time and recovered when deem necessary by the future events. The timber and steel elements will suffer and deteriorate depending on the time the structure stays buried. These elements can be lost for ever if the structure stays buried for a prolonged period.

This is the least favourable consideration and is not considered further.

03.03.02 RELOCATION OPTION ONE

- Process of dismantling and reassembling the station has to be strictly controlled and monitored.
- The process of relocating the super structure will be labour and time intensive.
- It is likely that some of the elements can be damaged and require replacement in the process.
- The relocation of the pit will require specialist trade and equipment.
- Part of the original fabric, mortar and render will be lost in the process.

This page has been left blank intentionally