



ELECTRICAL WORKS PLANNING DESIGN DESIGN REPORT



Barangaroo Central – Waterfront Promenade & Interim Public Domain Works

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BARANGAROO CENTRAL WATERFRONT PROMENADE & INTERIM PUBLIC DOMAIN ELECTRICAL SERVICES INFRASTRUCTURE

EXECUTIVE SUMMARY

This report outlines the provisions of Electrical Services infrastructure to service Barangaroo Central Waterfront Promenade and Interim Public Domain and of any impacts the proposed works may have on the existing local environment.

The Electrical Services consist of electrical and communications services to the site, which will service general power, pedestrian lighting and security monitoring systems in the Waterfront Promenade and Interim Public Domain. The extent of proposed works will be confined to within the Barangaroo development site boundary and will not impact on existing roads, pathways and environment.

The Director General's Environment Assessment Requirements have also been taken into account when formalising the strategy for the precinct.

INTRODUCTION

The Barangaroo Central Waterfront Promenade and Interim Public Domain (Barangaroo Central) is located on the Barangaroo Central site, and is bounded by Northern Cove and Barangaroo Headland Park (BHP) to the north, the harbour to the west, Hickson Road to the east, and the Lend Lease Temporary Construction Staging Area to the south.

The public domain in Barangaroo Central will be the connector between Headland Park and the urban precinct of Barangaroo South, and will contain elements common to both of these areas. It will extend the Headland Park promenade along the harbour to Barangaroo South as well as providing significant spaces for public recreation and leisure, and for major events.

The Waterfront Promenade will include a tree lined promenade and a lower level boardwalk. The Interim Public Domain comprises an internal lawn area that will accommodate major public gatherings, casual sports days, picnicking, as well as space for major and minor public and special events.

The location of the Barangaroo Central Waterfront Promenade and Interim Public Domain is shown by Figure 1.

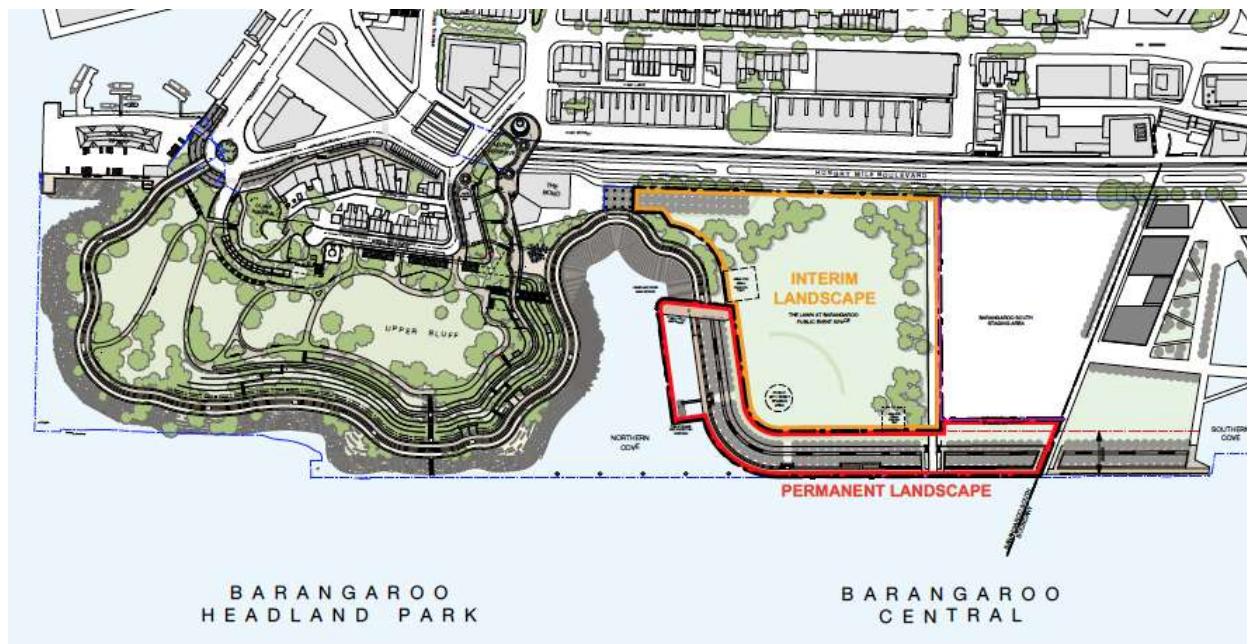


Figure 1: Barangaroo Central location diagram

EXISTING INFRASTRUCTURE

Existing electrical services infrastructure once belonging to the Sydney Ports Harbour Authority has since been decommissioned and not suitable for reuse.

There are no existing Supply Authority electrical services infrastructure currently within the site which can be utilised to service Barangaroo Central. This was confirmed with a Dial-Before-You-Dig study and review of received drawings and documentation. Any existing Ausgrid, Telstra, Optus and other Supply Authority infrastructure within the vicinity are located outside the Barangaroo Central development property boundaries and will not be impacted by the proposed works.

There are also temporary power and communications supplies serving the Baulderstone site sheds situated at Gate 5A, but the site sheds will be relocated and the cabling decommissioned when site works for Barangaroo Central commence. The above will also occur for the existing Passenger Terminal.

Hence, any main incoming supplies for power and telecommunications services into Barangaroo Central will be new.

The Railcorp 33kV underground cable located in Hickson Road, is situated outside the Barangaroo Central development property and will not be impacted by the proposed works.

MITIGATION OF IMPACTS

Existing electrical infrastructure will be decommissioned and is not suitable for reuse. There are no other electrical infrastructure traversing the site and thus no relocation or protection measures are required.

WATERFRONT PROMENADE

ELECTRICAL & COMMUNICATIONS SERVICES

The following outlines the proposed methods to service Waterfront Promenade:

A. Origin of Supply

- i. General power to the Waterfront Promenade area will be supplied from Headland Park DB-HP5 located at the border of the Headland Park-Central boundary. DB-HP5 will be provided as part of the Headland Park works, with sufficient spare capacity to supply power to the pedestrian lighting and illuminated signage.

B. Power

- i. An underground conduit and pit system will be provided to service the submains and sub-circuit cabling to electrical equipment in the Waterfront Promenade.

C. Communications

- i. An underground conduit pit system, separate to the power, will be provided to service communications and data cabling for Wi-Fi and security CCTV cameras.
- ii. WiFi hot spots will be provided to the Waterfront Promenade, via the Headland Park communications structured cabling network.

D. Pedestrian Lighting

- i. Pedestrian pole lighting to follow the scheme as set out in the Barangaroo Headland Park, following the same spacings, methodology of installation, control circuiting, luminaire and pole types, to achieve the same illumination levels for a continuous visual appearance.
- ii. Power to the luminaires will originate from DB-HP5 described above.

E. Security CCTV System

- iii. Security CCTV system to follow the scheme as set out in the Barangaroo Headland Park, following the same spacings, equipment, methodology of installation, circuiting and pole types, to achieve similar coverage and for a continuous visual appearance.
- iv. Power to the CCTV system will originate from DB-HP5 described above.
- v. Communications to the CCTV system to follow the scheme set out in the Barangaroo Headland Park, with the communications services utilising optical fibre, linking back to the Main Security CCTV panels in the Headland Park building.

BARANGAROO INTERIM PUBLIC DOMAIN

ELECTRICAL SERVICES

The following outlines the proposed method of electricity supply to service Barangaroo Central Interim Public Domain:

A. Origin of Supply

- i. A new Ausgrid underground power supply will be established within the Barangaroo Headland Park development to service the public domain, Cultural Centre Space and Barangaroo Central, via an underground chamber substation and Main Switchboard in Basement Level 1 of the Headland Park car park.
- ii. The location of the chamber substation and main switchboard on the southern end of the Barangaroo Headland Park development also lends itself as an ideal location to supply Barangaroo Central, due to its relative proximity and spare electrical capacity, without disruption to existing footpaths, roads and site services.
- iii. Capacity for 2x 400A/ph supplies (for a total of 800A/ph) will be provided to service the Interim Public Domain area for event usage.
- iv. Electricity supply to the Interim Public Domain will therefore originate from the Barangaroo Headland Park Main Switchboard in Basement Level 1. The Main Switchboard will be sized to accommodate for the 2x400A/ph supplies, including 2x spare 400A/ph circuit breakers, with facilities for future supply. Separate Supply Authority metering will be provided within the Barangaroo Headland Park Main Switchboard.

B. Conduits for Power

- i. 4x 125mm diameter HD underground conduits will be provided from the Main Switchroom out to a pit at the Barangaroo Headland Park-Central boundary under Separable Portion 1 and 2 works of the Headland Park Main Works Contract. These conduits are dedicated to reticulate the submains cabling to the Barangaroo Central Interim Public Domain, powering the future Pavilions Staging area and event hub locations, via a dedicated conduit, with one spare.
- ii. Trenching and installation of the conduits for Barangaroo Central can take place together with the installation of other conduits for the Barangaroo Headland Park public domain in Separable Portion 1 and 2, eliminating the requirement of redundant works.

C. Power Cabling

- i. Supply, installation and termination of submains cabling out of the Main Switchboard to Barangaroo Central will be required. Installation of submains cabling to be underground and within conduits provided in Bii) above.
- ii. Cabling will terminate to new main distribution boards or low voltage pillars servicing the Pavilions, Staging and event hub locations within Barangaroo Central.

COMMUNICATIONS SERVICES

The following outlines the proposed method of communications services to supply Barangaroo Central Barangaroo Central Interim Public Domain:

A. Telstra Services

- i. 100 pair Telstra lines will be established for the Barangaroo Headland Park development, located within a Main Communications Room in the proposed Cultural Centre Space on RL8.5, to service the public domain and Cultural Centre Space.
- ii. Similar to the Electrical Services described previously, the Main Communications Room also lends itself as an ideal location to supply Telstra services to Barangaroo Central, due to its relative close proximity to existing Telstra infrastructure, without disruption to existing footpaths, roads and site services.
- iii. Out of the total 100 pairs of Telstra lines, 25 pairs will be dedicated to service Barangaroo Central, reserved in the MDF within the Main Communications Room in RL8.5 of the Cultural Centre Space. These Telstra lines will service the future Pavilions, Staging and event hub locations

B. Conduits for Communications

- i. 2 x 100mm diameter underground conduits will be provided from the Main Communications Room out to a pit at the Barangaroo Headland Park-Central boundary under Separable Portion 1 and 2 of the Headland Park Main Works Contract. These conduits are dedicated to reticulate the communications cabling to Barangaroo Central.
- ii. Trenching and installation of the conduits for Barangaroo Central can take place together with the installation of other conduits for the Barangaroo Headland Park public domain in Separable Portion 1 and 2 works, eliminating the requirement of redundant works.

C. Communications Cabling

- i. Supply, installation and termination of Telstra lines from the MDF to each Pavilion within Barangaroo Central. Installation of communications cabling to be underground and within conduits provided in Bii) above.