

## PORT AUTHORITY OF NSW HERITAGE INVENTORY

### State Heritage Inventory

|  |                                |                           |  |
|--|--------------------------------|---------------------------|--|
| SHI Number: 4560026  |                                | Study Number: N/A         |  |
| Item Name: White Bay Power Station (Outlet) Canal  |                                |                           |  |
| Location: Victoria Road, Rozelle   |                                |                           |  |
| Address: Victoria Road, Rozelle  |                                | DUAP Region: Sydney South |  |
| Suburb / Nearest Town: Rozelle 2039  |                                | Historic Region: Sydney   |  |
| Local Govt Area: Inner West  |                                | Parish: Petersham         |  |
| State: NSW   |                                | County: Cumberland        |  |
| Other/Former Names: White Bay Inlet Canal, White Bay Power Station Water Cooling Conduit   |                                |                           |  |
| Area/Group/Complex:  |                                | Group ID:                 |  |
| Aboriginal Area: Wangal clan   |                                |                           |  |
| Curtilage/Boundary: Runs from the power station, parallel to Victoria Road and under James Craig Road to Rozelle Bay   |                                |                           |  |
| Item Type: Built   | Group: Utilities – Electricity |                           | Category: Electricity Generator/Power Station – coal/gas/oil |
| Owner: Port Authority of New South Wales   |                                |                           |  |
| Current Use:   |                                |                           |  |
| Former Uses: An outlet conduit (although called an outlet canal) which allowed water to flow out of the White Bay Power Station  |                                |                           |  |
| Assessed Significance: State   |                                | Endorsed Significance:    |  |
| Statement of Significance:<br><br>The significance of the canal is derived from the significance of the White Bay Power Station complex. The canal is an integral part of the White Bay Power Station and its cooling system. The canal now also forms part of the ecosystem of the White Bay and Black Wattle Bay areas (for the Statement of significance for White Bay Power Station see SHR listing #01015 on State Heritage Inventory Database)   |                                |                           |  |
| Historical Notes or Provenance:<br><br>Construction of the White Bay Power Station (Outlet) Canal began in 1912 as part of Phase 1 of the construction of the White Bay Power Station Complex.<br><br>The White Bay Power Station was one of four original Sydney Power Stations. Phase 1 was constructed between 1912 and 1917 by the New South Wales Railway Commissioners to serve the rapid expansion of the electric tramway system and the anticipated electrification of the city's railways. It involved the construction of the first half of the turbine hall, the switch house and one boiler house. Further construction phases of the White Bay Power Station were completed in 1925-28 and 1945-1958.<br><br>The site for the power station at White Bay was chosen partly because it had unlimited circulation water access with the possibility of separating inlet and outlet, thus avoiding local heating problems. Two cooling water canals were cut to White Bay Power Station—the inlet canal entering from White Bay and the discharge canal (the Outlet canal) emptying into Rozelle Bay. |                                |                           |  |

The NSW Railway Commissioners constructed the first Power Station at Ultimo in 1899. This was followed by Sydney Municipal Council's (SMC) Pyrmont Power Station in 1904 and the Electric Light and Power Supply Corporation's (ELPC) Balmain Power Station in 1909. These four power stations formed the backbone of the Sydney electricity supply system until 1930 when the SMC completed the first stage of the Bunnerong Power Station. Until 1950 these power stations remained largely independent.

The formation of the Electricity Commission of NSW (ECNSW) in 1950 united NSW's electricity supply system and over the next 6 years the ECNSW took control of all the existing Sydney Power Stations. Pressure to close the Sydney power stations because of pollution grew and in 1983 Pyrmont and White Bay were the last of the original five to be decommissioned. White Bay was the longest serving power station in Sydney having 70 years' continuous generation within one building.

The cooling water system was an integral part of the power station operating complex where exhausted steam was converted to water in the massive cast-iron condensers. Cooling water may have been taken directly from the canal or the canal could have discharged into a tidal pool adjacent to the power station from where it was pumped into the condensers. It was normal practice for either static or dynamic screens to be constructed to prevent the ingress of any solid material, and it is possible that White Bay had an electrically powered rotating screen or bucket screen similar to the ones employed at Ultimo or Balmain Power Stations, but no evidence of the original screen remains.

According to the 'White Bay Power Station Conservation Management Plan' (2004, volume 5, page 32), the water entered the inlet conduit through a fixed grill screen to filter large materials, then through a set of revolving screens to filter any other materials: 'The conduits included silt wells and control valves. In the Turbine Hall, a Circulating Water Pump for each condenser drew water from individual pump section wells fed from the Inlet Conduit and pumped it through the body of the condenser, the outflow dropping into the Outlet Conduit.'

|         |                               |                            |                        |
|---------|-------------------------------|----------------------------|------------------------|
| Themes: | National Theme:<br>3. Economy | State Theme:<br>Technology | Local Theme:<br>(none) |
|         | 4. Settlement                 | Utilities                  | (none)                 |

Designer:

Maker / Builder: New South Wales Railway Commissioners

|                    |                      |           |
|--------------------|----------------------|-----------|
| Year Started: 1912 | Year Completed: 1917 | Circa: No |
|--------------------|----------------------|-----------|

Physical Description:  
The outlet canal is not currently publicly visible above ground. The only evidence above ground identified is the partially open southern end of the canal below James Craig Road running south into Rozelle Bay, on land not owned by Port Authority of New South Wales.

Physical Condition:  
The condition of the canal is unknown, as it is almost entirely enclosed. It is expected that the canal will have a high likelihood of containing industrial archaeological artefacts; however these will be under water.

Modification Dates:  
1920-25 – construction of the Turbine Hall and Switch House (phase 2)  
1945-58 – demolition of the first boiler house and construction in two stages of extant Boiler House.  
1983 – White Bay Power Station decommissioned and ceased operations on 25 December.

|   |         |        |       |
|---|---------|--------|-------|
| <p>Late 1980s to early 1990s – the station was stripped of everything except elements identified for heritage conservation.</p> <p>2000 – the power station was sold by Pacific Power to the (former) Sydney Harbour Foreshore Authority.</p>   |         |        |       |
| <p>Recommended Management:</p> <p>Retain in situ and conserve</p> <p>That further GIS mapping be undertaken, using existing aerial photos, to determine the exact sequence of the construction and demolition or, infilling of, cooling water canals and conduits.</p> <p>The conduit should be surveyed by electromagnetic radiation methods and by lowering of a camera into the conduit. In addition, the sluice gates should be further investigated by removal of the metal plates, and preparation of measured drawings. This survey and additional documentary research are to inform an update of the existing SHI form and subsequent recommended management policy. However, these actions are not critical for establishing the significance of the canal.</p> <p>Preparation of a Maintenance and Conservation Works Schedule to ensure acceptable condition and assist in long-term conservation after preparation of survey</p> |         |        |       |
| <p>Management: Statutory Instrument</p>   |         |        |       |
| <p>Further Comments: Should GIS overlays of the various canals and stormwater channels evident on the site in the various mid-twentieth-century aerial photos be correlated, then it may be possible confirm the exact sequence of events of the opening and closing of canals.</p> <p>The White Bay Power Station (Outlet) Canal, runs through the listed curtilage of the White Bay Power Station (SHR No. 01015) State Heritage Item, subsequently, the site must be managed accordingly.</p>  |         |        |       |
| <p>Criteria a) The White Bay Power Station (Outlet) Canal has historic significance at a State level as an integral element critical to the operation of the White Bay Power Station. The choice of site for the power station depended on the supply of water for cooling the steam condensers. White Bay Power Station was the longest serving Sydney power station and is the only extant steam driven power station in Sydney. It retains within its fabric, and in the body of associated pictorial, written archives and reports and oral history recordings, evidence for the development of technology and work practices for the generation of electrical power from coal and water. (Design 5, 2004)</p>  |         |        |       |
| <p>Criteria b)</p>  |         |        |       |
| <p>Criteria c) Any potential aesthetic significance of the White Bay Power Station (Outlet) Canal is not known, as the structure is not accessible or visible.</p>  |         |        |       |
| <p>Criteria d)</p>  |         |        |       |
| <p>Criteria e) The actual technical significance of the White Bay Power Station (Outlet) Canal is not known, as the structure is not accessible or visible. However, it is considered to have a high potential for technical significance as a major component of the infrastructure of the power station. It is likely to exhibit technological achievements of its time. The White Bay Power Station (Outlet) Canal is also likely to contain industrial archaeological artefacts.</p>  |         |        |       |
| <p>Criteria f) The existence of the canal is rare, especially in the context of the intact qualities of the surviving White Bay Power Station.</p>  |         |        |       |
| <p>Criteria g)</p>  |         |        |       |
| <p>Integrity / Intactness:</p>  |         |        |       |
| References:   | Author: | Title: | Year: |

|             |   |  |          |            |              |
|-------------|---|--|----------|------------|--------------|
|             | Department of Lands                                     | Aerial Photographs   |          |            |              |
|             | Mark Dunn   | White Bay Power Station, The Dictionary of Sydney, <a href="https://dictionaryofsydney.org/entry/white_bay_power_station">https://dictionaryofsydney.org/entry/white_bay_power_station</a> |          |            | 2008         |
|             | Leichhardt Library                                      | White Bay Power Station  |          |            |              |
|             | Railway Commissioners                                   | Album P3405, White Bay Power Station Construction Photographs  |          |            | 1912         |
|             | Sydney Water  | Metropolitan Detail Series Plan Balmain Sheet 51   |          |            | 1920         |
|             | Maritime Services Board of NSW                          | Balmain Coal Loader Upgrading: Environmental Impact Statement  |          |            | 1978         |
|             | Design 5 Architects                                     | Heritage Interpretation Strategy, Bays West Sub-Precincts White Bay Power Station and Robert Street  |          |            | 15/02/22     |
| Studies:    | Author:   | Title:   | Number:  | Year:      |              |
|             | Godden Mackay Logan PL                                  | Sydney Ports Corporation White Bay Power Station (Inlet) Canal   | 4560062  | 2011       |              |
|             | Design 5  | White Bay Power Station Conservation Management Plan Volumes 1–5   |          | 2004       |              |
| Parcels:    | Parcel Code:  | Lot Number:  | Section: | Plan Code: | Plan Number: |
| Latitude:   | Longitude:  |  |          |            |              |
| Listings:   | Name:   | Title:   | Number:  | Date:      |              |
|             | Heritage Act – S.170 NSW State agency heritage register | White Bay Power Station (Outlet) Canal   | 4560016  | 2004       |              |
| Data Entry: | Date First Entered:                                     | Date Updated:  | Status:  |            |              |
|             | 7/07/2004   | 11/01/2023   | Basic    |            |              |

Image: 1



Caption: White Bay Power Station Canal-southern end of canal (Leading to Rozelle Bay)

Copyright: Godden Mackay Logan Pty Ltd

Image By: Godden Mackay Logan Pty Ltd

Image Date: undated, c2011

Image File: 4560026b1.jpg

Image: 2



Caption: View of what appears to be the conversion of the west section of the cooling water canal to a conduit

Copyright: Museum of Applied Arts and Sciences

Image By: Commissioner for Railways

Image Date: 14/11/1912

Image File:

Image: 3



Caption: Aerial photograph of the White Bay Power Station. There is no evidence of the original cooling water canal as the coal owning facilities have now encroached completely on its former location

Copyright: Department of Lands

Image By:

Image Date: 1/04/1968

Image File:

Image: 4



Caption: Junction between the cooling water canal and the covered (conduit) section beyond, near the north elevation of the Boiler House

Copyright: Leichhardt Local Studies Library

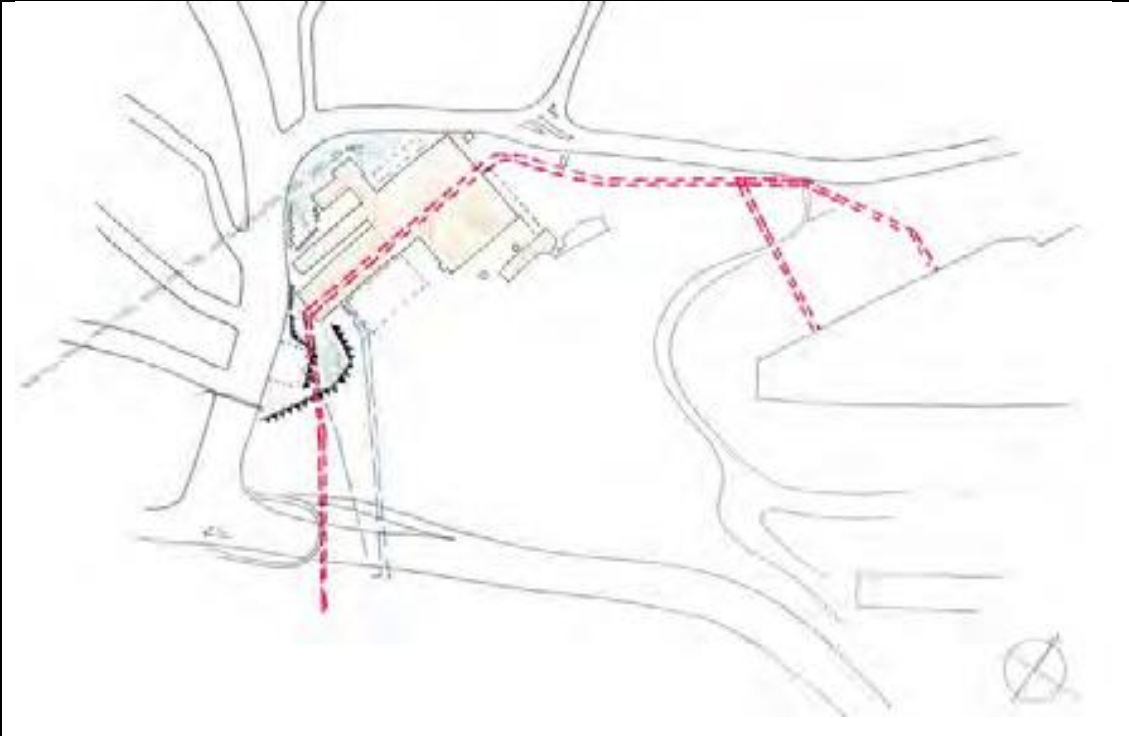
Image By:

Image Date: 1930s-40s

Image File:



Image: 5



Caption: Plan of the White Bay Power Station Inlet Canal (old and 1951 alignments) leading from White Bay and the Outlet Canal leading south to Rozelle Bay

Copyright: Design 5 Architects, 15 February 2022

Image By: Design 5 Architects

Image Date:

Image File: