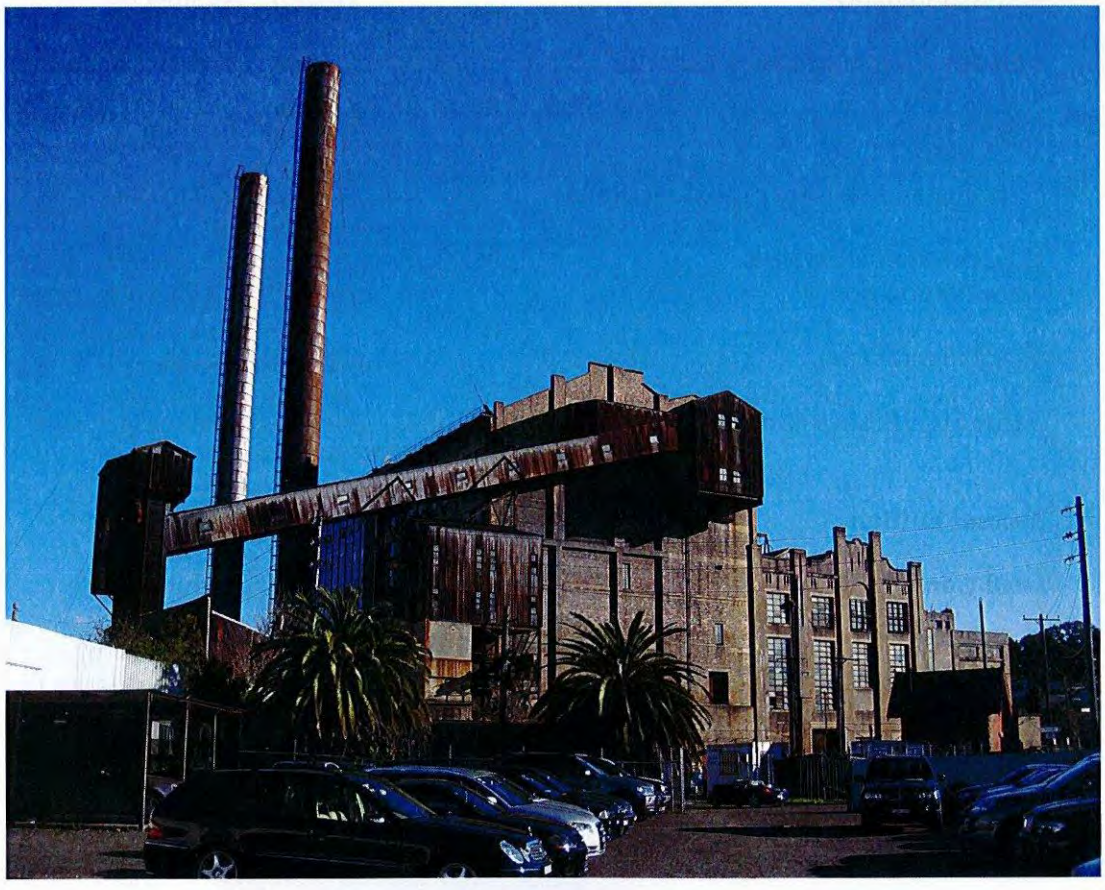
WHITE BAY POWER STATION

Robert Street, ROZELLE, NSW 2039

CONSERVATION MANAGEMENT PLAN
VOLUME II
THE REPORT



prepared for
The Sydney Harbour Foreshore Authority

by a team led by

Design 5 Architects Pty Ltd
5 Queen Street, Chippendale, NSW 2008
Phone: (02) 9319 1855

FINAL REPORT
SECOND EDITION JULY 2011
(Revised March 2013)

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Cover Image: White Bay Power Station from Robert Street, July 2010 (Design 5 - Architects)

This report has been produced at Design 5 – Architects and is the compilation of work by the following team:

First Edition

Lead Consultant	Design 5 Architects
Primary areas of input:	
Conservation planning co-ordination, conservation analysis, conservation policy and maintenance	Design 5 Architects
Industrial and machinery heritage	Godden Mackay Logan
Engineering	Hughes Trueman
Planning and statutory considerations	JBA Urban Planning
Conservation analysis & conservation policy	Anne Warr Heritage Consultant
Social Significance	Context Pty Ltd
Social Significance and History	Meredith Walker Heritage Futures

Second Edition

Lead Consultant	Design 5 Architects
Primary areas of input:	
Conservation planning co-ordination, conservation analysis, conservation policy and maintenance	Design 5 Architects
Engineering	Hughes Trueman Mott Macdonald
Client body and review	Sydney Harbour Foreshore Authority

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Contents

VOLUME II
(THIS VOLUME)

ANALYSIS

Section 1: Introduction

Section 2: Investigation of cultural significance

Section 3: Assessment of cultural significance

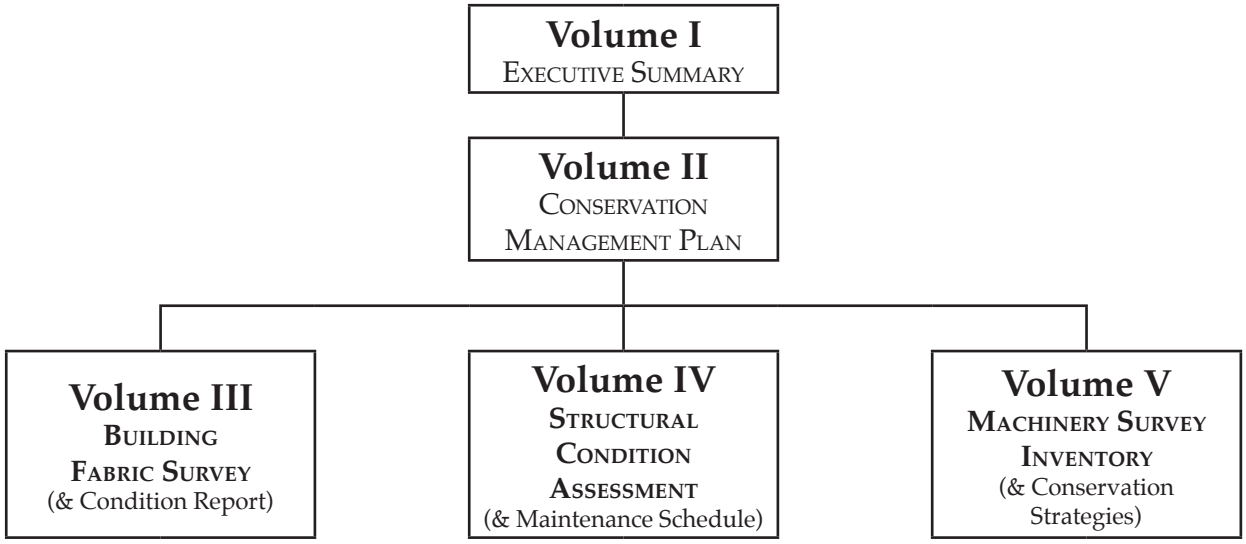
Structure of the Report

The White Bay Power Station Conservation Management Plan is arranged in Five Volumes in a hierarchy as demonstrated by the following diagram. The results of the investigations of the building fabric survey, structural condition assessment and machinery survey inventory and conservation strategy are contained in three Volumes (III - V).

The information in these three Volumes is summarised in Volume II (this volume) and informs the Assessment of Cultural (Heritage) Significance and the Management Policies which result from these Assessments.

Volume I is the Executive Summary which gives a broad overview of the whole report and summarises the most important Policies for the conservation of the White Bay Power Station.

No strategies should be devised nor any work carried out relying solely on the information contained in Volume I. Reference must be made firstly to Volume II (this volume) and then the volume containing the relevant detail. That reference should also be noted against any such strategy or work instruction.



The following table shows each volume that has been amended/revised as part of each issue. Some volumes may not have been amended but are identified on the cover as belonging to an amended set.

CMP amendment date (issue):	Volumes amended as part of an amendment set					
	Volume I	Volume II	Volume III	Volume IV	Volume V	Appendices
January 2004 *Original Report*	✓	✓	✓	✓	✓	✓
Second Edition July 2011 *Revision and update*	✓	✓	✓	✓		
Second Edition July 2011 (Revised March 2013) *Minor amendments*	✓	✓				✓

Summary Contents of whole report

Volume I
Executive summary
The Brief
Cultural Significance
Issues, Opportunities & Policies arising
Conservation Policy

Volume II
The Conservation Management Plan
Introduction
Investigation of cultural significance
Assessment of cultural significance
Statement of cultural significance
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APPENDICES

A The Burra Charter 1999
B Heritage Listings
C Bibliography & References
D Supplementary Illustrations
E Social Significance Report - Context Pty Ltd - November 2002
F Standard Exemptions under the Heritage Act 1977 (NSW)
G Report: The Significance of White Bay and Balmain Power Stations to Sydney's Industrial Heritage, a report to the Electricity Commission of NSW (Don Godden and Associates & Heritage Consultants, 1989)

INTRODUCTION

SECTION 1

1.1 WHAT IS A CONSERVATION MANAGEMENT PLAN?

A Conservation Management Plan is a special study report that clearly identifies and describes why a place is important (cultural significance) and then proposes an action plan, policy or strategy to keep that importance (conservation policy) and manage it into the future.

The assessment of cultural significance:
Finding out if and why a place is important

We need to understand the place thoroughly. Research is carried out in three major areas: *historical* research, *oral history* research, and the building's *fabric* and its physical context.

Historical research involves a thorough investigation of written records, newspapers, journals, maps, photographs and illustrations. Oral history research involves interviews with present or past users, and any person or group who hold an interest in the place. Fabric research requires a thorough examination of the place for evidence of changes and earlier structures, previous uses, intactness, etc. The context and siting of the place are also examined. This research is compiled into an historical summary to give a full understanding of the place.

The place is then compared to similar places to determine its level of significance i.e. local, state, national or international. There are a number of standard criteria for the assessment of significance. Broadly, these criteria address historical, aesthetic/creative, technical/research, and social aspects.

From this assessment, concise statements of cultural significance are then drafted. These statements provide a sound basis on which to proceed in formulating a policy or strategy as to the most appropriate way to retain the cultural significance or heritage value.

Conservation policy:

Keeping the cultural significance and still make the place useful

Once the cultural significance of the place is determined, all the other factors bearing on the future of the place must be assessed. For example:

- What does the owner want to do with the place and what resources, financial and other, do they have available?
- What are the current Building Code of Australia requirements, local and state

government regulations, and planning instruments etc. that affect the place?

- What is the condition of the place? Is it about to collapse? Is there water entry? Is there any evidence of subsidence or movement? Are there termite infestations? Can the existing structure be altered or added to? What are the existing services (electrical, gas, fire sprinklers, air conditioning etc) and what is their potential for upgrading?

- What are the user and community needs? Is there an identified need that this place can fulfil and still retain its significance

- What feasible re-use options are there in the location?

When all these issues and opportunities have been identified, assessed and resolved, specific policies and strategies are then formulated which will guide future works, management and maintenance of the place. It is during this process that the need for change to accommodate new uses is balanced against the significance of the place and its elements. The policies must address all of the issues to retain the significant features and qualities while allowing change to ensure the survival of these features. In order to retain the significance of the place and ensure its ongoing maintenance and viable use, the conservation policies must be implemented or acted upon.

This revised Conservation Management Plan, once adopted, will be used as a management tool and as part of a design brief for future works and development of the place. It should be further revised if new information changes the understanding of the significance of the place or if there is an unforeseen change in the way the place is managed.

1.2 THE PLACE

The subject of this report is the White Bay Power Station which is situated at the head of White Bay in Rozelle, NSW 2039 as shown below.

Figure 1.2.1
Location map for White Bay Power Station in Sydney

(Land & Property Information map 9130-3N [2002])

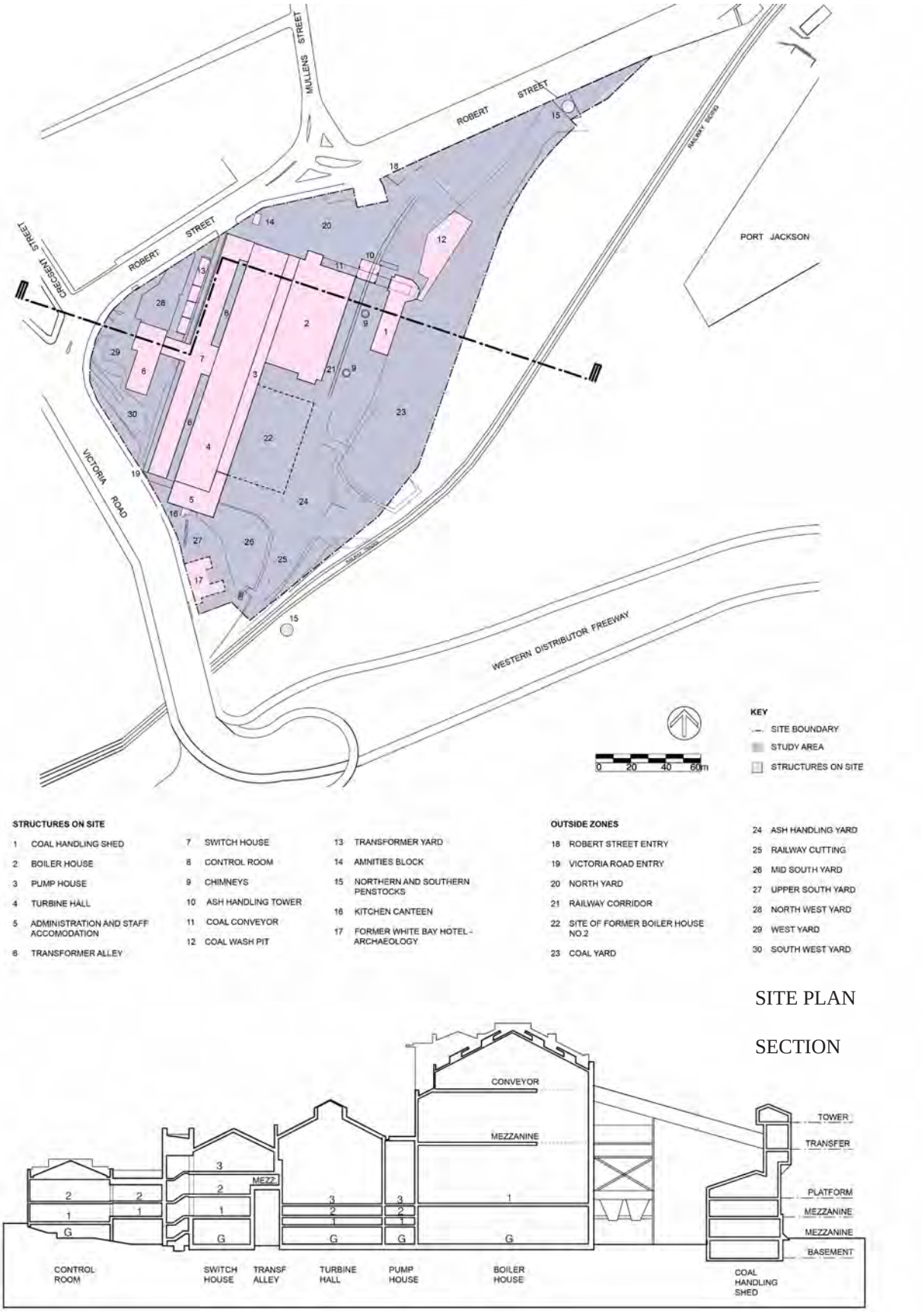


Figure 1.2.2
White Bay Power Station - showing approximate site boundary - see Figure 5.1.2.2 for a plan of the Visual Curtilage which extends beyond the site

1.3 Background

White Bay Power Station has been the subject of several reports and assessments in the mid-1990s, including the White Bay Power Station Asset Management Plan prepared by Pacific Power in May 1995. A number of these reports addressed various heritage issues and aspects of significance.

The management and ownership of the place was transferred to the Sydney Harbour Foreshore Authority (SHFA) in the year 2000. In 2002 SHFA engaged a team of consultants lead by Design – 5 Architects to prepare a Conservation Management Plan (CMP) to establish the exact nature of the cultural significance of the place and to put in place policies to safeguard that significance and guide future development and changes to the place. Earlier reports and documentation were reviewed as part of the preparation for the CMP. The final CMP, dated January 2004, was adopted by SHFA and endorsed by the NSW Heritage Council on 28 January 2004. This endorsement expired on 28 January 2009. In early 2010, SHFA acquired the site of the former White Bay Hotel (destroyed by fire on 5th September, 2008). In June 2010 SHFA commissioned Design - 5 to review and revise the CMP which is to include the site of the former White Bay Hotel.

White Bay Power Station is listed on the Register of the National Estate (019512), the NSW State Heritage Register (01025), Sydney Regional Environment Plan Number 26 (Item 11 on the Heritage Register), the Sydney Harbour Foreshore Authority S.170 Register (Draft) and the Register of the National Trust of Australia (NSW). There has been no development or major changes on the site since the 2004 report.

This revised Conservation Management Plan will form a key component for a process of calling for Expressions of Interest for the future use and redevelopment of the place.

1.4 Consultant's brief

In 2010, Design 5 – Architects were commissioned to review and update the 2004 Conservation Management Plan to include the following in that review:

- Respond to new public and private interest in the reuse and activation of the Bays Precinct.
- Review of condition of the White Bay Power Station and issues arising.
- Inclusion of the White Bay Hotel site.

This 2011 review builds on and includes the earlier work.

The revised CMP is to meet the standards set down by the Australia ICOMOS Burra Charter and the NSW Heritage Office CMP Guidelines so that endorsement of the Heritage Council may be obtained for the report. The 2004 CMP is considered to include sufficient research and analysis for the revised CMP and requires only a review and an update in terms of the issues notes above.

In the 2004 CMP, earlier studies and the extensive documentation on White Bay Power Station are deemed to provide sufficient historical information on which to assess the significance of the place. The principle emphasis of that project was twofold:

1. the identification and assessment of the contribution of the extant physical elements to the overall heritage significance of the place, and
2. the development of conservation policies to guide the retention of that significance in

the adaptive reuse of the place.

Minor revisions were made in January, February and March 2013 in response to Heritage Office requests.

1.5 Terminology of the report

This report has been undertaken using the methodology and structure outlined in J. S. Kerr, *The Conservation Plan*, 5th edition, National Trust of Australia (NSW), 2000. This methodology is based on the principles and processes described in *Australia ICOMOS Burra Charter, 1999* (known as the Burra Charter) and its accompanying 'Guidelines to the Burra Charter' (on Cultural Significance and Conservation Policy). A copy of the 1999 Burra Charter (without the Guidelines) is included as Appendix A. The principles and methodology set out in these documents are combined with the assessment criteria for listing on the State Heritage Register. These criteria are described in Section 2, Assessment of cultural significance.

Throughout this report, the terms place, cultural significance, fabric, conservation, maintenance, preservation, restoration, reconstruction, adaptation, use, compatible use, setting, related place, related object, associations, meanings, and interpretation, are used as defined in the Burra Charter (refer to Appendix A). It should be noted that, as a consequence of this, the meanings of these terms in this report may differ from their popular meanings.

1.6 Author identification

The 2004 report was produced at Design 5 – Architects and was the compilation of work by the following team:

Lead Consultant	Design 5 - Architects
Primary areas of input:	
Conservation planning coordination, conservation analysis, conservation policy and maintenance	Design 5 - Architects
Industrial and machinery heritage	Godden Mackay Logan
Engineering	Hughes Trueman
Planning and statutory considerations	JBA Urban Planning
Conservation analysis & conservation policy	Anne Warr Heritage Consultant
Social Significance	Context Pty Ltd
Social Significance and History	Meredith Walker Heritage Futures

All photography for the 2004 report was produced by the consultants unless otherwise stated. This 2011 revised report has been prepared by Design – 5 Architects with engineering assessment and advice provided by Hughes Trueman Mott Macdonald. The review was carried out by Robert Gasparini with assistance by Nina Pollock and Alan

Croker and was reviewed by Alan Croker, all of Design – 5 Architects.

1.7 Acknowledgments

For the 2004 CMP, the staff of:

SHFA

Pacific Power

Power House Museum

State Records

Lands Department

Mitchell Library

Volunteers for the Open Day

Former Employees

Local Residents

Visitors

Others who of their kindness and interest took the trouble to fill out questionnaires and provide views, opinions and information in many other ways.

For the 2011 revision:

Lucy Burke-Smith

Niall Macken

Di Tatty

Security staff of White Bay Power Station

1.8 Scope

The scope of this report covers all aspects of the assessment of the cultural significance of the White Bay Power Station.

The pre-European history of the site has not been investigated. Although the site includes areas of reclaimed harbour foreshore as well as excavation in bedrock, much of it has been disturbed by excavation for building work, however it is known at other sites that evidence of occupation by Aboriginal people can survive at deeper levels. It is therefore recommended that further research be done should the opportunity for excavation ever present itself.

Conservation analysis

SECTION 2
Investigation of cultural significance

2.1 DESCRIPTION OF THE PLACE

White Bay Power Station is situated on a roughly triangular area of generally flat land at the head of White Bay in Rozelle. The site is bordered to the north by Robert Street, to the east by open port land and associated rail tracks and yards next to the shore of White Bay, and to the west by Victoria Road. In the south west corner of the site on elevated land is the site of the now destroyed former White Bay Hotel. This was recently acquired by the Sydney Harbour Foreshore Authority and now forms part of this report.

Figure 2.1.0.1
View from Anzac Bridge looking West
(Design 5 - Architects)

Figure 2.1.0.2
View from Victoria Road looking East
(Design 5 - Architects)

The precinct includes a number of structures and elements. These include a boiler house with two detached steel chimney stacks (they were originally joined to the boiler house via the ash precipitators removed in 1996); a coal handling unit serviced by a rail spur and connected to the boiler house via an elevated coal conveyor; a turbine hall and pump house building incorporating administrative offices, the laboratory and a workshop; an early switch house, a later control room and switch house, and the site of a former substation.

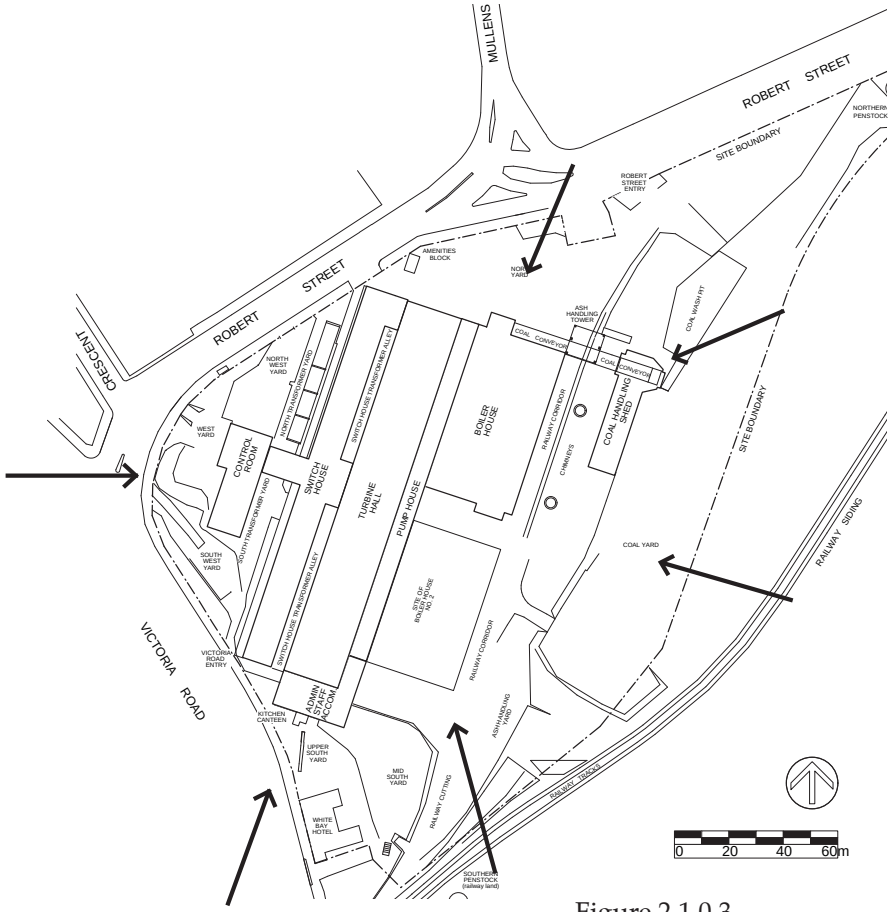


Figure 2.1.0.3
Plan of the White Bay Power Station site showing principal areas and elevations

Figure 2.1.0.4
Southern Elevation, viewed from overpass
(Design 5 - Architects)

Figure 2.1.0.5
Western Elevation, viewed from Victoria Road
(Design 5 - Architects)

Figure 2.1.0.6
Northern Elevation, viewed from Robert Street
(Design 5 - Architects)

Figure 2.1.0.7
Northeast Elevation
(Design 5 - Architects)

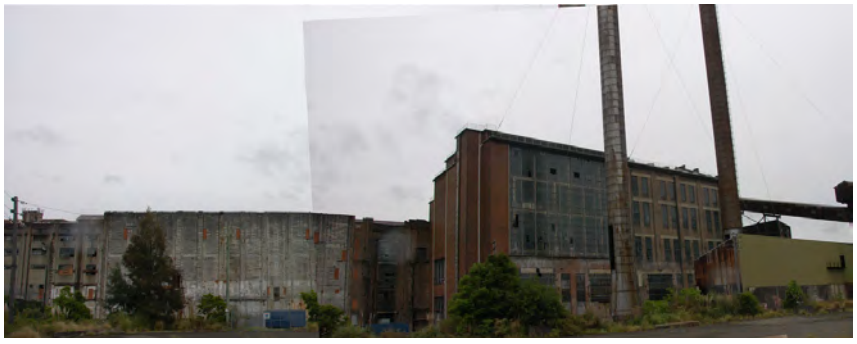


Figure 2.1.0.8
East Elevation of Admin Block, Pump House and Boiler House (Design 5 - Architects)

Figure 2.1.0.9
Southeastern Elevation
(Design 5 - Architects)

(All Images Design 5 - Architects)

2.1.1 Associated Elements Beyond the New Structures

The Penstocks are two circular brick lined vents to the cooling water channels. Each have associated motor driven sluice gates which opened or closed to control the flow of water to and from the steam condensers of the turbine generators. The southern Penstock lies in land belonging to State Rail.

Figure 2.1.1.1
The southern Penstock in State Rail land
(Design 5 - Architects)

Figure 2.1.1.3
Coal wash pit
(Design 5 - Architects)

Figure 2.1.1.2
Coal Yard
(Design 5 - Architects)

Figure 2.1.1.4
Railway corridor
(Design 5 - Architects)

Figure 2.1.1.5
View north from railway cutting
(Design 5 - Architects)

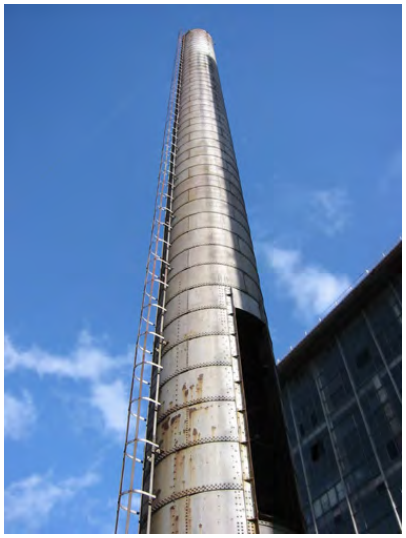


Figure 2.1.1.6
Chimney
(Design 5 - Architects)

Figure 2.1.1.7
Ash Handling Unit
(Design 5 - Architects)

Figure 2.1.1.8
Site of Boiler House No. 2
(Design 5 - Architects)

Figure 2.1.1.9
Ash Handling Yard
(Design 5 - Architects)

Figure 2.1.1.10
Mid South Yard
(Design 5 - Architects)

Figure 2.1.1.11
Upper South Yard
(Design 5 - Architects)

Figure 2.1.1.12
North Transformer Yard
(Design 5 - Architects)

Figure 2.1.1.13
South Transformer Yard looking north
(Design 5 - Architects)

Figure 2.1.1.14
North West Yard looking towards 1948 Control Room
(Design 5 - Architects)

Figure 2.1.1.15
Switch House Transformer Alley
(Design 5 - Architects)

Figure 2.1.1.16
Main Entrance from Victoria Road
(Design 5 - Architects)

Figure 2.1.1.17
Bill Boards to Victoria Road
(Design 5 - Architects)

Figure 2.1.1.18
Canteen south of the Admin Block (demolished 2012)
(Design 5 - Architects)

Figure 2.1.1.19
Admin & Staff Accommodation from the east
(Design 5 - Architects)

2.1.2 Principal Structures

The Coal Handling Plant is an assemblage of corrugated iron clad sheds, elevators & conveyors. It consists of a rail serviced coal dumping shed east of the two tall steel stacks with a tall elevator shaft with motor room, and an inclined and enclosed conveyor shaft sheathed in corrugated iron which runs at a high level up to the north side of the boiler house. The two steel chimney stacks, though not part of the coal handling plant, are often identified with it.

Figure 2.1.2.1
Coal Handling Plant from the north
(Design 5 - Architects)

The Boiler House is a massive brick and reinforced concrete structure built in two stages 1953 & 1958. It is the third boiler house at the station and stands on the site of the first. The second one, formerly to the south, has been demolished. Adjacent to the Boiler House is a lower steel and concrete tower structure for handling the waste ash.

Figure 2.1.2.2
Boiler House #1 from the south east
(Design 5 - Architects)

The Turbine Hall and its adjacent **Pump House** was built in two stages as demand for power increased. The massive brick (1917) and reinforced concrete (1927) building housed not only the generating equipment but also the extensive administrative offices and the laboratory in the southern end. The electrical and mechanical workshops and some of the circuit breakers were located here.

Figure 2.1.2.3
Turbine Hall from the north
(Design 5 - Architects)

The 1912-1927 Switch House lies to the west of, and parallel to, the Turbine Hall and was also built in two stages (1912-1917 and 1917-1927). The architecture and construction of the switch house is similar to the turbine hall with its steel framed windows and brick and reinforced concrete walls. It contains the original 1917 control room which links to and overlooks the Turbine Hall.

Figure 2.1.2.4
Switch House from the west
(Design 5 - Architects)

1948 Switch House and Control Room is a brick annex to the west of the Power Station and contains the Control Room and associated cable rooms, switch gear and other ancillary equipment required for the reticulation of the generated power.

Figure 2.1.2.5
Control Room from the west
(Design 5 - Architects)

2.1.3 Principal Machinery

Most of the operating equipment has been removed from the site except for one complete set of operating machinery systems. This remaining machinery gives an impression of the awesome scale of the power plant and includes one complete set of the interconnected systems and machinery that produced power from coal and water. The boiler is now skeletal as all the asbestos cladding was removed from the machinery and the site, and this now gives extraordinary and previously rare views into this huge piece of industrial

Figure 2.1.2.6
Interior of the Control Room

equipment. It sits alone soaring into the remote height of the gigantic boiler house where there were once four boilers.

The Turbine Hall has one complete turbine generator left and like the remaining boiler it sits at one end of an impressively long and high space. The other buildings contain a collection of machinery and associated elements from the operating period of the Power Station which are detailed in the Inventory in Volume 5 of this report.

The results of a detailed fabric and structural surveys are presented in Volumes 3 and 4.

Figure 2.1.1.7
Turbine Generator in Turbine Hall
(Design 5 - Architects)

2.2 Physical evidence

Volumes 3, 4 and 5 of this report contain the results of the surveys of the fabric of the place.

The entire site was the subject of a measured survey in June and July 2002. The evidence contained in the structural, architectural and machinery surveys are recorded both on those plans and, for the items of machinery, on Inventory Sheets.

The fabric and condition surveys were carried out again in 2010 to verify and update the earlier work.

2.3 Photographic Survey

Volumes 3, 4 and 5 of this report include photographs of structures, spaces and elements of the place as illustrations for these separate reports. These surveys have been updated where necessary for the 2010 report.

Section 2.1 above also contains photographs of all the principal structures and outside areas. A detailed photographic inventory is stored in the SHFA records repository.

2.4 Oral evidence

At the time of preparing the 2004 report, oral evidence was collected from some of those who once worked at the Power Station. In addition the Sydney Harbour Foreshore Authority commissioned a separate Social and Oral History of the White Bay Power Station, which involved the collection of more stories and information than was done for the report. This Oral History was undertaken in recognition of the importance of the place, and the fact that many of those surviving who used to work here are in their later years. Transcripts are available from SHFA.

Figure 2.4.1
Former employees at WBPS
(Design 5 - Architects)

Nonetheless, the team is grateful to those former employees who spoke to us either by phone or

who came to visit the Power Station and assisted in the identification of items during the survey period and preparation of the 2004 report. No additional oral history research was carried out for the 2010 revision.

2.5 Documentary evidence

Documentary evidence for the 2004 report was collected from a wide variety of sources. These include:

The Sydney Harbour Foreshore Authority

State Records of New South Wales

Pacific Power

Lands Department

The Power House Museum

Photographs and other material collected from former workers and other interested people.

Documents found on site.

Figure 2.5.1
Interior of Boiler House
(Design 5 - Architects)

No additional documentary research, except for the White Bay Hotel site, has been carried out for the 2010 revised report.

2.6 Historical Evidence

2.6.1 The site prior to the Power Station

The original ecology of the area

Dotted around Sydney Harbour are areas that have survived development and in some cases are designated park lands. These give us some idea of what the original ecology of Balmain was like - rocky, covered in trees and bushes, and alive with bird and small animal life. The coastline was rocky, and interspersed with small bays and coves from which to launch canoes to fish, and to collect shell-fish from the shoreline. Present-day

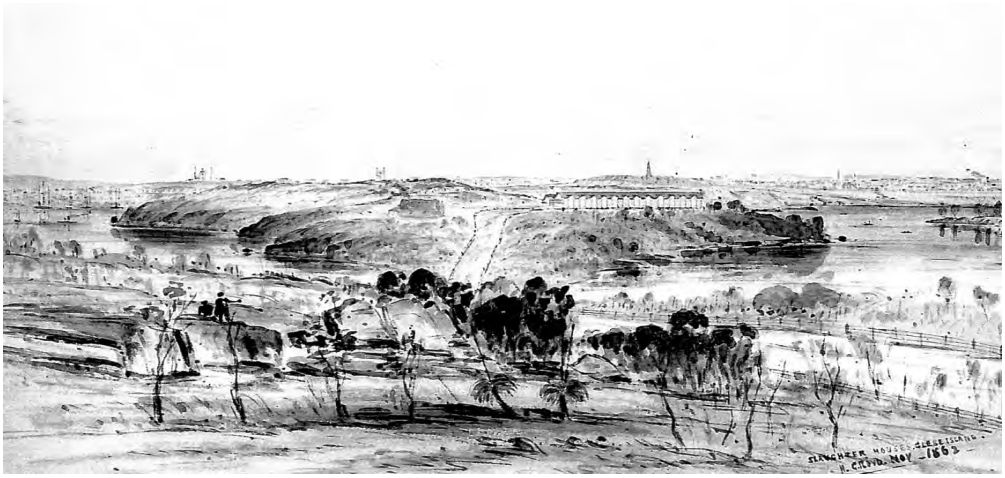


Figure 2.6.1.1
Watercolour drawing entitled 'Slaughterhouses. Glebe Island. H.G.Lloyd 1863' The White Bay Power Station site would be to the left of the road leading towards Glebe Island.
(Mitchell Library Small Picture File)

White Bay was a mud-flat (see Figures 2.6.1.2 & 2.6.1.3) which extended around to the isthmus connecting Glebe Island to Balmain. It may well have been a rich source of food for the Aboriginal people. After nearly 100 years of occupation by the British the ecology had changed but the rocky nature of the terrain covered with trees - albeit probably sparser than formerly - is still evident from this drawing of 1863.

The Aboriginal past

Sydney's Aboriginal Past by Val Attenbrow (UNSW Press 2002) contains a wealth of information about the Sydney region before the arrival of the British in 1788, and the information following is taken principally from this source.

> *Current estimates suggest that there may have been between 3000 and 5000 people living in the Sydney region at the time the British colonists arrived in the First Fleet. With their subsistence based on fishing, hunting small animals and gathering plant foods and shellfish, they utilised a wide range of resources from the land, rivers, estuaries and oceans. (Attenbrow, op cit p.158)*

Governor Phillip was only able to give a rough estimate to Lord Sydney in May 1788 and he thought that they could not be less than 1500 in the immediate area.

Information about, and evidence for, the Aboriginal way of life has been based upon archaeological research and letters and journals from the early settlers. Some of the information came directly from Aboriginal people who came to know the early settlers and were able to pass on a certain amount of information. For example Watkin Tench (*Sydney's First Four Years &c.*, 1793, pp 201-202) describes the 'bands' (formerly referred to as 'tribes') thus:

> *The natives live in tribes which are distinguished by the name of their Chief, who probably takes his name from the district in which he resides. ... From the entrance of the harbour, along the south shore, to the cove adjoining this settlement [Farm Cove] the district is called Cadi, and the tribe Cadigal. ... The south side of the harbour from the above-mentioned cove to Rose Hill, which the natives call Parramatta, the district is called Wann, and the tribe Wanngal.*

The original inhabitants of the area around White Bay, the Wanngal, as with the rest of the region, were essentially nomadic. Attenbrow (p.47) states

> *Amongst hunter-gatherer societies, locations for campsite were usually chosen to provide comfort and shelter from the weather as well as access to the plant and animal foods and and raw resources that people required. In addition to campsites at which family groups stayed several days, or perhaps weeks, and carried out numerous activities, there were other locations at which people may have camped only a single night ... when out fishing, shell-fishing, hunting or plant gathering.*

Prior to 1788 this area was wooded and rocky and the small bays at the edge of the flooded river valleys would have been used nomadically. Aboriginal occupation and use of land is often associated with evidence of debris middens. No such middens have been found in the White Bay area to date.

Whatever the true number of the local Aboriginal population prior to 1788, it was decimated by the outbreak of smallpox in 1789, an epidemic that spread throughout the Aboriginal population before the settlers had had time to spread far from the original settlements of Sydney and Parramatta. Combined with a rapid increase of British people in the early fleets who invaded that land, denying the Aborigines access to traditional food sources, the original inhabitants of this area diminished quickly. We can therefore only make general observations about the occupation of this site by the original occupants.

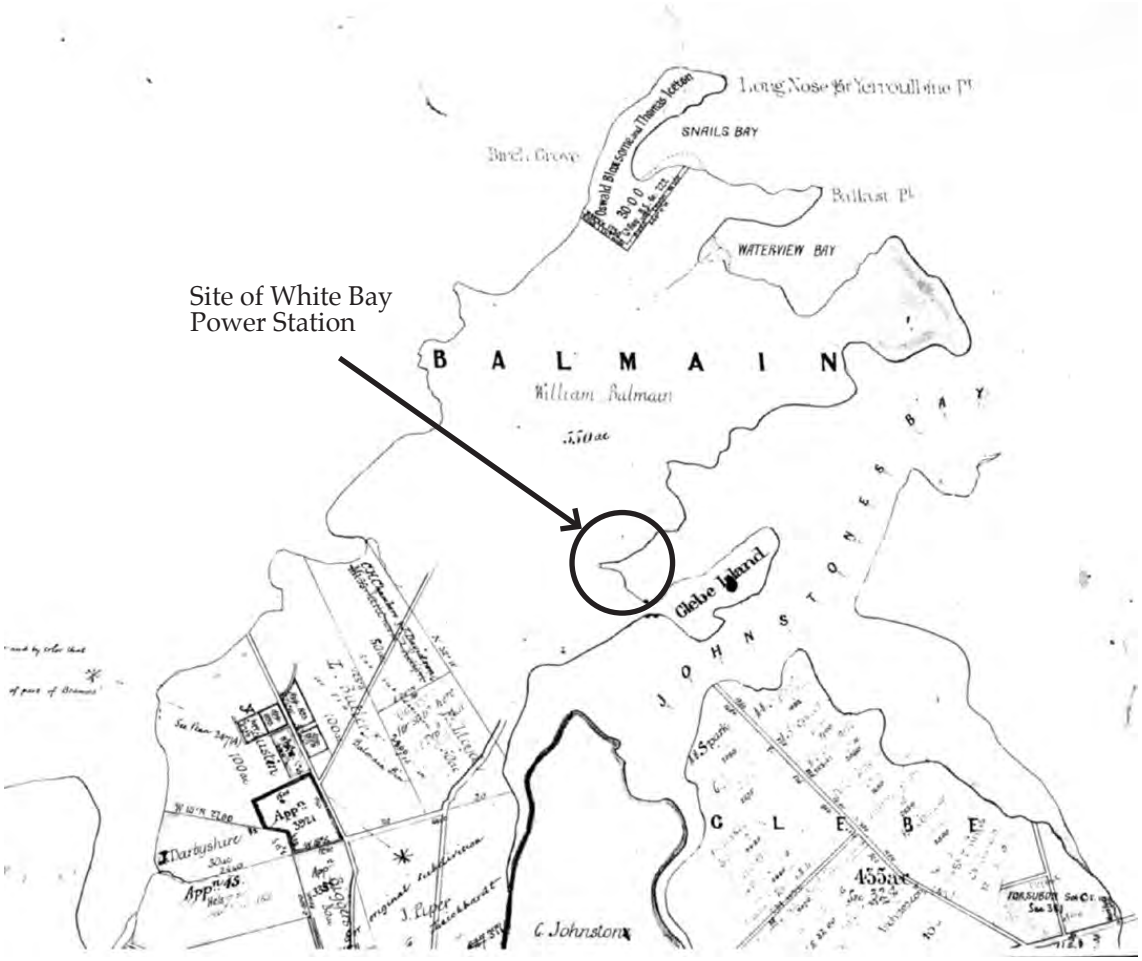


Figure 2.6.1.2
Part of a map held at the Department of Lands Land and Property Information Office showing early land grants. On the reverse is written: "from the original in the archives of New South Wales map no. AO 262 - Petersham, approx. 1834"

In 1800 William Balmain was granted 550 acres on Rozelle Bay, north of Glebe and across Johnston's Bay thus giving his name to that area, as shown above. Further subdivisions followed throughout the century until the whole peninsula was occupied in lots most of which were built over.

With the spread of industry along the shoreline in the middle years of the 19th century there was considerable pressure to subdivide the land for housing to accommodate the workers in such industries as the Abattoirs on Glebe Island, W Bell Allen's boiling down works, timber milling in Rozelle Bay and Cowan & Isreal's Soap and Candle factory on the Annandale foreshores.

By 1855 subdivision was well established around the head of White Bay which was still a mud flat. Around 1890 a dyke was built from Balmain across the mud flat to Glebe Island which reclaimed the land at the head of the bay for a public reserve. (see Figure 2.6.1.3) Mullens Street was extended and housing built. Figure 2.6.1.2 shows a part of a detailed map drawn by Higinbotham, Robinson & Harrison of the Municipality of Balmain in 1883 which shows how White Bay had developed. By 1899 further land reclamation had taken place as is shown in Figure 2.6.1.3

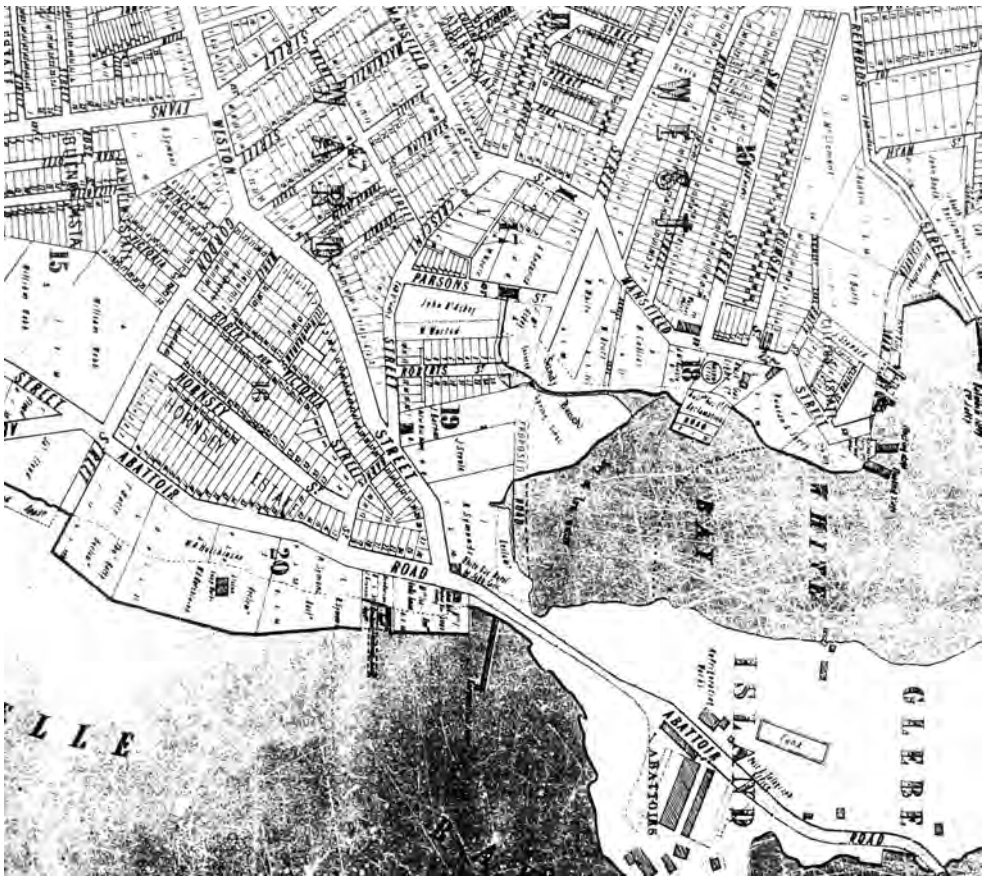


Figure 2.6.1.3

Detail from Higinbotham, Robinson & Harrison's 1883 Map of the Municipality of Balmain showing White Bay with sand flats, creek, reclaimed land and MLWM shown as a dotted line. Note also the tight grained urban fabric which still exists today. The original White Bay Hotel can be seen on the corner of Abattoir Road and Weston Street.
(Mitchell Library
ZM4 811.1821/1883/1)

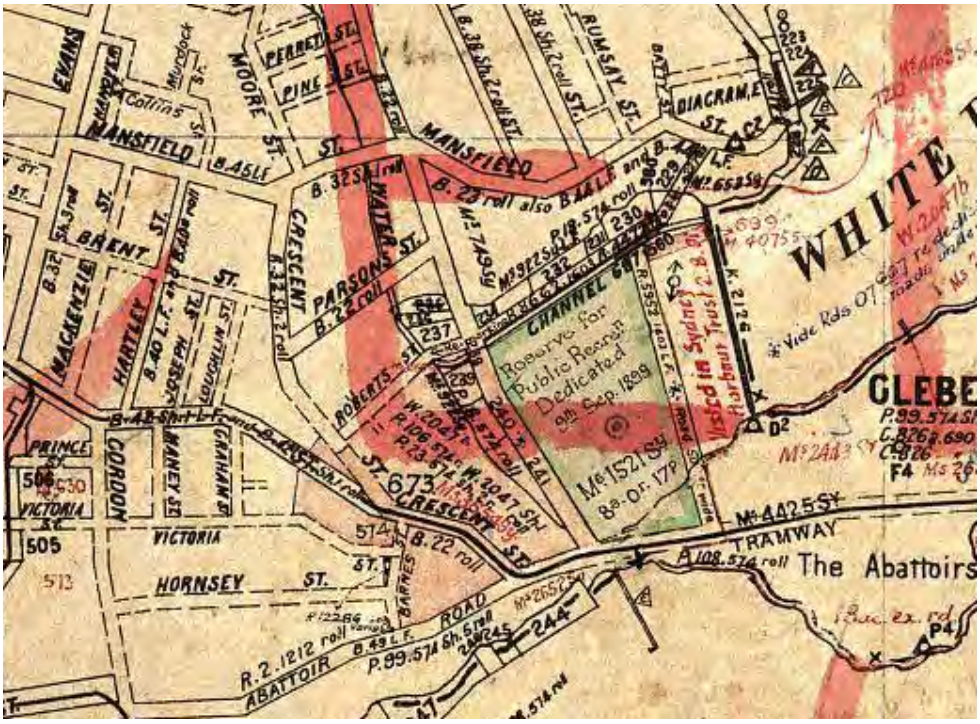


Figure 2.6.1.4

Detail from the 1886 Parish of Petersham Metropolitan Land district map of Balmain showing reclaimed land at the head of White Bay which was set aside as a Reserve for Public Recreation Dedicated 9th Sep. 1899. Mullens Street has been extended across the site. A new Street is marked which is cearly visible in the photograph at Figure 2.6.1.5. Beyond this street a slip of land has been vested in the Sydney Harbour Trust.
(Department of Lands scanned map number 14010902)

The future site of the White Bay Power Station was subdivided for housing during these years as is shown in Figure 2.6.1.2. The site was progressively resumed for the purposes of building the power station and a plan exists (copy in the Appendix) showing the dates of these resumptions - most of them being Gazetted 12 July 1911. From contemporary photos (Figure 2.6.1.5 below), it appears that the site was completely cleared of all structures and vegetation and following further excavation along the west and south of the site construction of the power station began in 1911.

There is no evidential link between the choice of the site and the surrounding urban form. The site was chosen for proximity to water (for cooling water in the steam condensors) within the city. Technology had not, at that stage, solved the problems of reticulation over long distances so all power stations were located close to the consumers of electrical power.

Figure 2.6.1.5
Early photograph of work commencing on the site of the White Bay Power Station.
(courtesy of PowerHouse Museum archive)

Figure 2.6.1.6
View of the quarrying of Glebe Island for the Wheat Silos - but interestingly showing White Bay Power Station at the completion of Stage 1. The first boiler house is complete and half of the Turbine Hall and Switch House. Note the road to the right of the Power Station which appears in the Parish map of 1886 (amended up to 1899). The shed by the wharf must be standing on Sydney Harbour Trust land. The White Bay Hotel can be seen as a solitary building at the southern end of the Power Station site.

This view is undated but was donated to the Mitchell Library by Ampol Petroleum in 1957. A similar view in the same photographic style by A Foster from the same collection is dated 3/4/19 (1919). It is likely that this is of a close date.

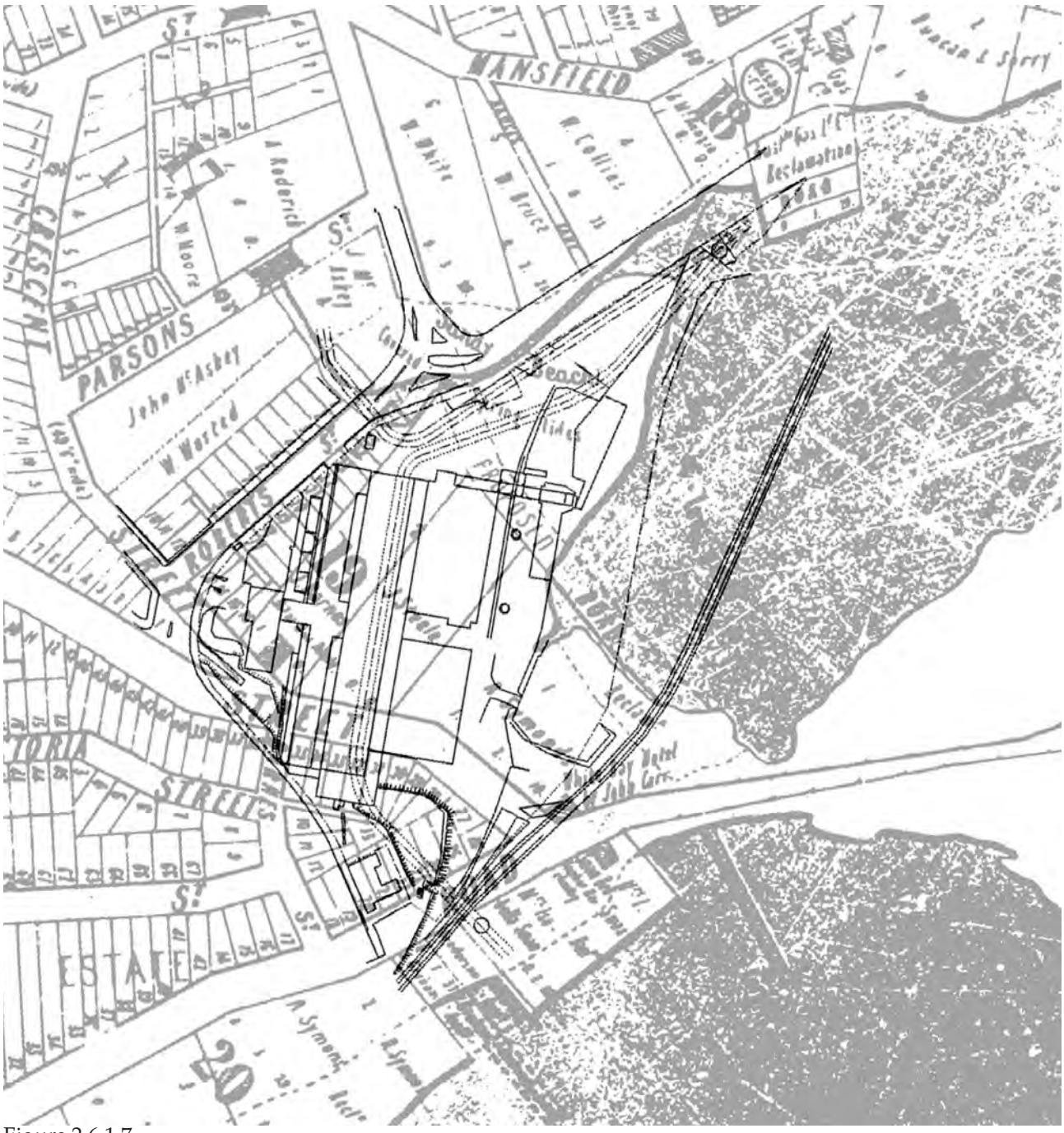


Figure 2.6.1.7
White Bay Power Station and the former White Bay Hotel today (2003) overlayed
onto 1883 Parish Map showing previous shoreline, residential allotments and alignment of roads

2.6.2 Power Stations and Electrification in the Sydney Region

The commercial introduction of electricity supply began in the late 1870s. The earliest installations were almost exclusively for lighting, serving individual buildings or, at best, compact urban districts. The first urban power stations supplying both street lighting and private consumers opened in 1882, at Holborn Viaduct in London and Pearl Street, New York.

Figure 2.6.2.1
WBPS Site during Construction 1912
(courtesy PowerHouse Museum archive)

The high cost and low efficiency of electric lighting, which at first hampered competition against the well established coal gas system, was gradually overcome. The development of the electric motor in the 1880s and 1890s opened up new markets for electricity in industry and the railways, both of which had been dominated by the steam engine. Rapid worldwide progress in the technology of transmission in the same period allowed power stations to serve wider areas, resulting in a proliferation of urban power stations. Some supplied power only for traction, while others supplied the general market for power and light, with declining cost and increasing reliability, so that individual consumers in their supply areas gradually shut down their own small, inefficient plant in favour of purchasing electricity.

This worldwide pattern was repeated in Sydney. By the 1890s, a number of small, privately-owned power companies were supplying consumers with light and power in the central business district. There were also a handful of municipally-owned stations, the largest of them in Redfern, and several country towns had established town lighting schemes.

The construction of a large power station to serve Sydney's central area was delayed by political rather than technological circumstance. Between 1887 and 1896, the New South Wales parliament dealt with six competing bills for the right to reticulate electricity in Sydney, eventually giving approval to the Sydney Municipal Council (SMC).

The first major application of electrification, however, was on public transport. Between 1879 and 1899, Sydney's tramways had been powered by horse, steam or cable. In 1896, after seven years of experiments with electric traction including the electrification of North Sydney and Rose Bay lines, the NSW Railway Commissioners (RC) obtained parliamentary authorisation to construct an electric tramway along George Street to Harris Street, Ultimo and, in 1897, they commenced construction of a large power station at Ultimo. The Ultimo Power Station came into service in December, 1899.

The SMC commenced construction of a powerhouse in The Rocks in 1897 but owing to the rapid development of technology, this building had to be abandoned during construction and an entirely new, much larger station was designed. Pyrmont Power Station, which supplied street lighting and a rapidly growing private clientele, came into service in July 1904.

Figure 2.6.2.2
WBPS Site during Construction 1912
(courtesy PowerHouse Museum archive)

Public ownership of electricity supply was becoming widely accepted but did not prevent the establishment of the Electric Light and Power Supply Corporation (ELPSC), which commissioned the original Balmain Power

Station in September 1909. In 1912, the RC commenced construction of their second power station at White Bay, to serve the rapid expansion of the electric tramway system and the anticipated electrification of the city railway. The White Bay Power Station came on line in late 1917.

These four power stations formed the backbone of the Sydney electricity supply system until 1930, when the SMC completed the first stage of Bunnerong Power Station. The SMC, ELPSC and RC systems expanded their production steadily and, except for limited energy exchanges between the RC and SMC in the 1920s, independently. The ELPSC secured the franchise to supply the five municipalities surrounding its power station by 1911, so reaching its maximum geographical extent. The growing traction load was reserved by legislation for the RC who, from 1923, also supplied in bulk to outlying municipalities in Sydney's south-west (four of which constituted the first St George County Council), commencing supply in March 1923. The SMC was the least constrained in the areas it could serve and its sales grew fastest of the three supply organisations.

Figure 2.6.2.3
WBPS Site during Construction 1912
(courtesy PowerHouse Museum archive)

The advantages of integrating the separate systems had been apparent since the First World War, when an emergency 12 MW link between the SMC and RC systems had enabled the former to keep expanding its sales despite the unobtainability of new plant. In 1925, the two organisations made a short-lived energy exchange agreement which was terminated soon after by the SMC in favour of building its own power station at Bunnerong and, in its view, keeping control of its own destiny.

In an attempt to achieve greater co-ordination in the development of electricity supply within Sydney and in the rest of the state, the government set up an Electricity Advisory Committee (EAC) in 1934. One of the first EAC recommendations to be taken up by the government was the transfer of the electricity undertaking of the SMC to a newly-constituted local government conglomerate, the Sydney County Council (SCC), in 1935.

It was defence rather than economic considerations that finally interconnected the different systems in 1940, after many false starts. During that year, new 15 MW links were completed between the RC and SCC systems, at St Leonards and Marrickville, and the first ever link between the SCC and the ELPSC, at Five Dock. Although no part of the system was ever subject to enemy bombardment, the interconnections proved invaluable during the postwar years, when the difficulty of obtaining plant and continual industrial action placed great stress on the Sydney electricity system.

Figure 2.6.2.4
Excavating WBPS Channel 1912
(courtesy of PowerHouse Museum archive)

In effect, regional interconnection took the Sydney electricity system to much of the rest of New South Wales. With the connection of the Public Works Department's Southern Electricity Supply (SES) system, the Sydney regional grid extended from Taree in the north to Canberra in the south and Griffith in the west. In

1946, over 84 per cent of New South Wales electricity was generated within the grid, 11 per cent in other public supply systems and 5 per cent in private plant. About 48 per cent of Sydney's electricity was generated by the SCC (at Bunnerong and Pyrmont), 38 per cent by the RC (at White Bay and Ultimo and at Newcastle and Lithgow) and about 7 per cent each by the ELPSC (at Balmain) and the SES (at Port Kembla and smaller inland stations).

In 1950, the postwar supply crisis in Sydney, together with the urgent need for electrification in the rest of the state, prompted the government of the day to establish a central electricity generating body, the Electricity Commission of New South Wales (ECNSW). The ECNSW took control of the generating assets of the SES in November 1950, the SCC in January 1952 and those of the RC in January 1953. In 1956, after an extended legal dispute over the basis of valuation for purchase, the ECNSW also took formal control of the assets of the ELPSC.

Figure 2.6.2.5
WBPS Site prior to opening, 1913
(courtesy PowerHouse Museum archive)

Even before the ECNSW acquired control of the four original Sydney power stations, the pressure of technological change was in the direction of electricity generation outside the city, closer to the coalfields. The cost of high-voltage electricity transmission was negligible in comparison to the cost of transport of fuel and this had been recognised by the RC which, of all the major generating organisations, had the most widespread transmission network and the greatest freedom in power station location. From the late 1940s, the RC had been planning to build three large coalfields stations, all of which were ultimately completed by the ECNSW and served as prototypes for a series of progressively larger coalfields stations.

It is probable that, if the ECNSW had been formed immediately before the war, the pattern of development of Sydney's power stations would have been quite different. As it was, the decisions made independently by each of the major generating organisations during the war resulted in the postwar rebuilding of Pyrmont, White Bay and Balmain power stations (and the installation of new equipment in Bunnerong and Ultimo). Earlier co-ordination may well have led to the earlier development of coalfields power stations and the historic patterns of power station building are as much the result of the industry organisation of the time as the technology.

Sydney was self-sufficient in electricity for the last time in 1954, in that outward and inward energy flows balanced over the cycle of the year. In 1958, it was still generating 75 per cent of its requirements, but by 1962 only 32 per cent, and by 1965 only 10 per cent. The combined output of the Sydney power stations in that year was barely one-fifth that of Vales Point, the ECNSW's newest and largest power station. With the progressive completion of four more coalfields power stations by 1987, the metropolitan stations contributed insignificant amounts of energy to the system, although they were retained as emergency plant until retired.

Figure 2.6.2.6
WBPS during construction of Turbine Hall, 1913
(courtesy PowerHouse Museum archive)

Increasing public concern over the pollution caused by metropolitan power stations added considerable pressure to close them. Pyrmont and White Bay were the last of the five large stations to be decommissioned, in 1983.

White Bay was the longest serving power station in Sydney. It had 70 years of continuous generation within the one building (albeit extended and with new boiler houses) compared with 64 years at Ultimo and 60 years at Balmain A. Although the Pyrmont site was in longer service, from 1904 to 1983, the original power station building was completely superseded and replaced.

2.6.3 Background to the building of the White Bay Power Station

The RC always had a more complex system to manage than either the SCC or the ELPSC. The normal lighting and motor loads of its own establishments (based on 240 volt 50 Hz AC supply) were superimposed on the 600 volt 25 Hz DC supply required by the tramways. Furthermore the system eventually selected for railway electrification in the early 1920s was based on 1500 volt 50 Hz DC supply and, after the First World War, the RC began high voltage 50 Hz AC bulk supply, first to the Sydney Municipal Council (SMC) and, from 1922, to the southwestern suburbs of Sydney. The RC also supplied power to other public authorities for such essential uses as sewer and water pumping and the operation of opening bridges.

The complementary patterns of the various loads allowed the RC to make efficient use of its generating plant, as electricity could be distributed with some flexibility across the various subsystems. This was accomplished by incorporating a large number of frequency changers (25 to 50 Hz or reverse) and rotary converters (AC to DC or reverse) into the system, in addition to the usual transformers. The presence of such plant in the power stations and substations distinguishes the RC electrical system from those of the ELPSC and the SCC. The latter rapidly became almost exclusively 50 Hz AC, after some initial DC development (though some parts of the City of Sydney first electrified by the SMC in the 1900s continued to be supplied by DC into the 1980s).

After the completion of the Ultimo Power Station in 1899, electrical tramway operations increased rapidly and the RC's projections of further growth threatened to exceed the capacity of the power house. At about the same time, the Commissioners formed the view that electrification of the suburban railway, and the construction of a new, electric City underground railway system, were essential to keep up with the growth in rail traffic. In 1910, the RC's Chief Electrical Engineer, OW Brain, recommended that an additional source of power be established and, in keeping with the custom of the day, traveled to Europe and America to investigate the latest developments.

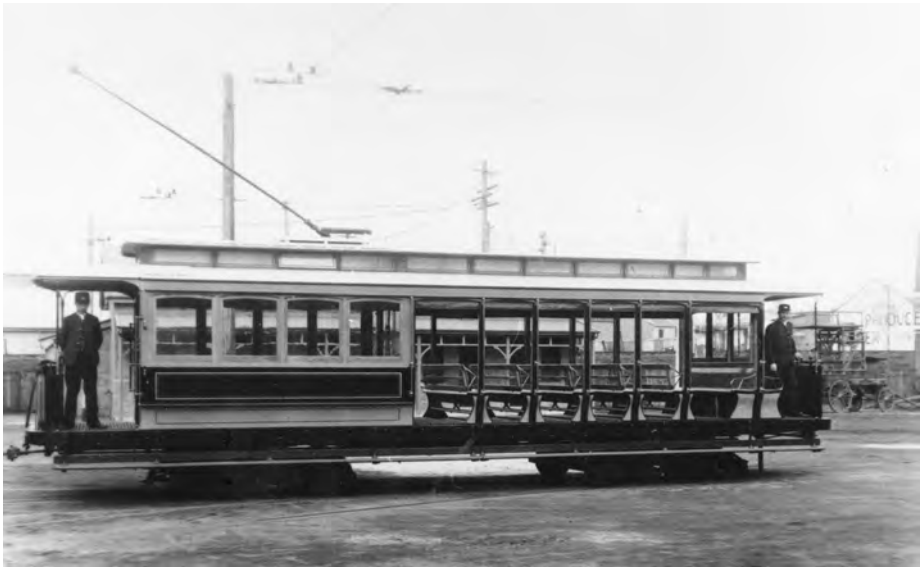


Figure 2.6.3.1
One of the first series of electric cars for full time electric use in New South Wales. Manufactured by the St Louis American car company.
(Courtesy of Godden Mackay Logan)

Brain considered and rejected hydro-power, on the basis that no reliable supplies (ie water flows) were available near Sydney. He also considered and rejected a location on the western coalfields, because at that time the unit cost of transmission marginally exceeded the cost of coal transport and the availability of cooling water was a major difficulty. The RC selected a site at White Bay, on the following criteria:

- it had sufficient area for a power station of 'well over 100' MW;
- it had both rail links and dock facilities for coal and plant delivery and ash disposal;
- it had unlimited circulating water, with the possibility of separating inlet and outlet to avoid local heating problems;
- it was low-lying, to reduce cooling water lift; and
- it was low cost.

2.6.4 First Phase

Figure 2.6.4.1
White Bay Power Station, July 1913
(courtesy PowerHouse Museum archive)

Construction commenced in June 1912, with the driving of piles to support the northeast corner of the building (the rest is on more solid foundation). The first boilers and the first turbo-altemator set were steam tested on site in July 1913, even before the buildings were completed. Construction was then 'allowed to progress quite slowly for some time', for a number of reasons. The First World War dramatically slowed the growth in tramway usage, delayed the electrification of the suburban railway and also created a shortage of materials and skilled manpower, making the completion of the power station both less urgent and more difficult. Another factor was technological development, which increased the ability of the Ultimo Power Station to accommodate growth. The Ultimo building was originally designed to house 11 MW of reciprocating engine-generators but, by 1918, a total of 36 MW of more compact and efficient turbo-altemators had been installed.

The White Bay Power Station was planned to accommodate eight groups of boilers and ten turbines when fully developed. Coal was railed into the site at the east and conveyed to the top of the boiler house. Abutting the west of the boiler house was the pump gallery, the turbine hall and, separated by a gap for ventilation and lighting, the switch house. The channel taking cooling water to the condensers ran the length of the turbine hall: on the basis of experience at Ultimo, it had been designed with particular care to accommodate future turbines of greater power. Similarly, problems with ash handling at Ultimo led to the adoption of a suction system of boiler ash collection at White Bay.

The station was built in two stages. The first, in brickwork, consisted of the first half of the turbine hall and the switch house and one boiler house. This phase had room for five generators. It was not until May 1917 that it became fully operational, with 25 Hz, 66 kV turbo-alternators installed at positions 1,2 and 4 and a bank of four Babcock & Wilcox boilers occupying half the boiler house. Two of the generating sets were Willans & Robinson turbines coupled to Dick Kerr alternators, rated as 7 MW continuous and 10.5 MW overload (some sources give the rating as an average 8.75 MW). Three were ordered but, when

industrial troubles in the UK delayed the delivery of the third, a 7.5 MW Curtis General Electric turbo-alternator was installed instead in the No. 4 position. The Willans Robinson Dick Kerr machine intended for the No. 3 spot was installed at Ultimo on arrival in 1914 but then transferred to the No. 3 position at White Bay in late 1918, giving a total station capacity of 28.5 MW.

Figure 2.6.4.2
Power station c. 1920
(courtesy PowerHouse Museum archive)

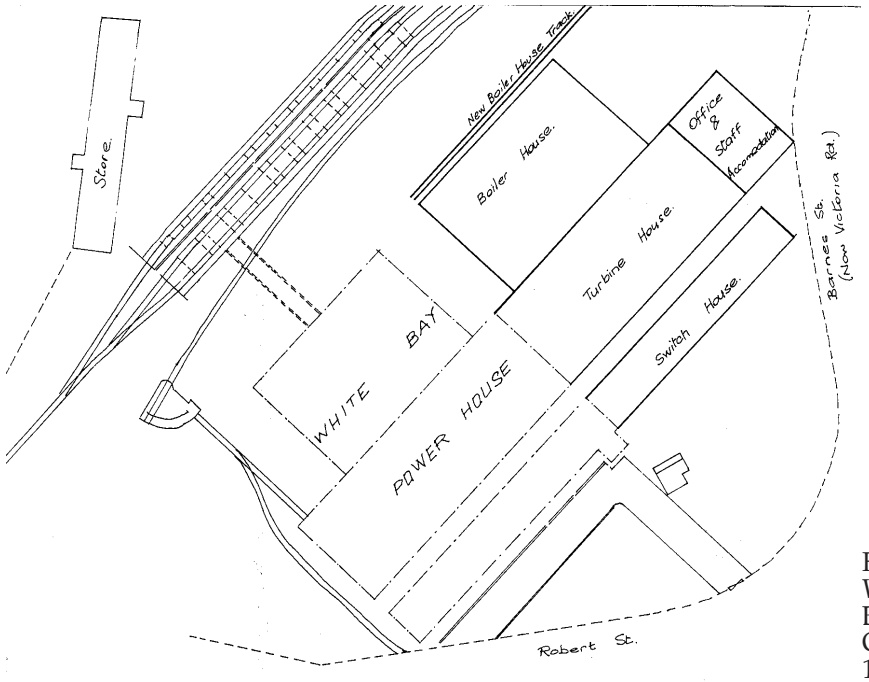


Figure 2.6.4.3
White Bay Power Station Building Extension Outline Arrangement, 1922.

The No. 4 Curtis General Electric turbine was removed some time before 1924, when a new 25 Hz, 6.6 kV, 8.75 MW English Electric turbo-alternator of largely local manufacture was commissioned. In 1925, a second English Electric set was installed and a second bank of boilers built inside the original boiler house. With this, the first stage of the White Bay Power Station reached its maximum capacity of five 25 Hz turbo-altemators, aggregating some 63.75 MW. At Ultimo, there was an additional 27.5 MW of 25 Hz plant and 14.3 MW of 50 Hz plant. The two stations were operated and controlled as a unified system.

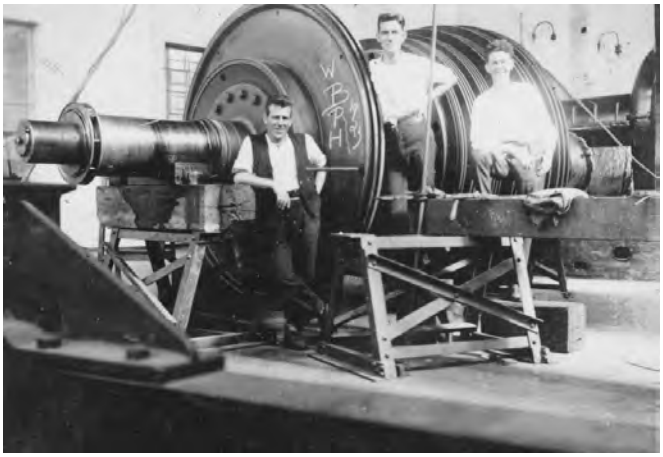


Figure 2.6.4.4
White Bay Power Station 1923.
Installation of turbine rotor
during the 2nd phase of development.
(courtesy PowerHouse Museum archive)

Figure 2.6.4.5
White Bay Power Station. The original Control Room at the south end of the turbine hall.
(courtesy Godden Mackay Logan, CMP Vol. V, Figure 2.5)

2.6.5 Second Phase

After 1925, White Bay became the RC system's main station for 50 Hz generation (some 9.7 MW of 50 Hz plant installed at Ultimo was progressively removed between 1925 and 1928, some of it to smaller RC power stations at Newcastle and Lithgow, leaving Ultimo as a dedicated tramway supplier). With the growth of electric train traffic and bulk sales to the SMC and other councils, an additional 11 kV, 50 Hz Parsons turbo-alternator of 20 MW output (No. 9) was installed in 1928. This brought the total capacity of the second phase of the Station to its maximum of 86 MW.The record 406 GWh of electricity generated at White Bay in 1928–29 declined to 224 GWh in 1933–34 for a number of reasons and was not exceeded until 1947–8. Bulk sales to the SMC ceased within nine months of the opening of the Council's Bunnerong Power Station in January 1929. Sales to other councils were then affected by the 1929 stock market crash and subsequent economic depression (the Depression), which also halted the growth in electricity demand for rail and tram working.

No new generating plant was installed at White Bay between 1928 and 1951. After the Depression, an increasing share of the tramway load was taken by Ultimo, where two 20 MW, 25 Hz AGE-BTH units had been installed in 1930 and 1931. In 1940, the 7.5 kVa frequency changer at White Bay was replaced with a 25,000 kVa unit, allowing more power generated at 50 Hz to be fed to the 25 Hz system. From then on, the 25 Hz generators at White Bay were used mainly for peak periods and for standby purposes. In 1944, the No. 1 alternator was disconnected from its turbine and placed in service as a synchronous condenser. This provided power factor correction for the frequency changer and enabled the plant at Ultimo to operate more efficiently.

Between 1939 and 1941, the RC systems in Sydney, Newcastle and Lithgow were interconnected. In 1940, 33 kV links were established between the RC and SCC systems at Marrickville and St Leonards and in 1941, a 33/66 kV link with the Public Works Department's system was completed, also at Marrickville. While originally intended as emergency links in the event of enemy bombardment, they proved invaluable after the war in combining the resources of the State's major electricity systems. Reinforced concrete shelters, blast walls and equipment covers were installed at White Bay in early 1942 as a precaution against air raids. They were progressively removed in the first half of 1944.

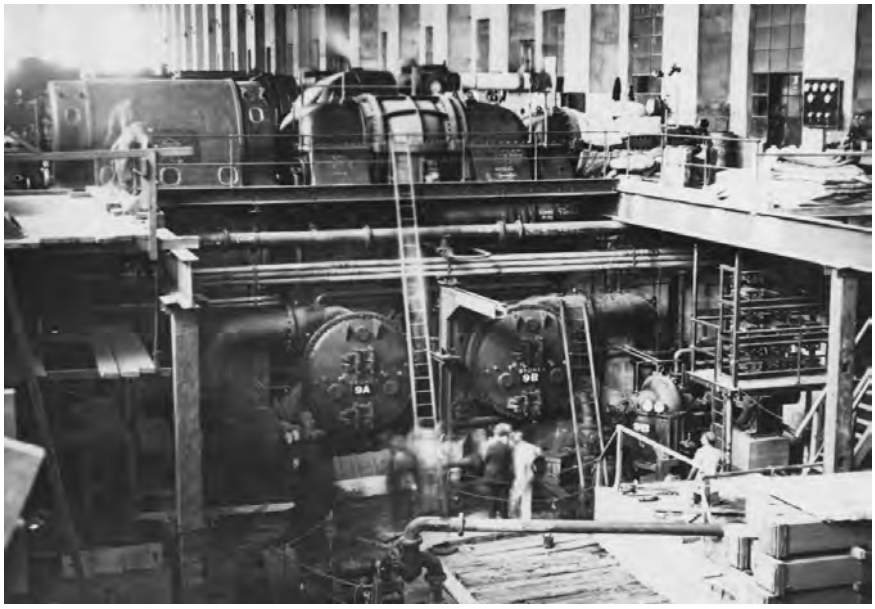


Figure 2.6.5.1
White Bay Power Station Turbine Hall 1928. The newly installed No. 9 turbo-alternator set with its condensers on the condenser floor below.
(Courtesy Godden Mackay Logan, CMP Vol. V, Figure 2.6)

2.6.6 Third Phase

After 1945, the 50 Hz plant showed increasing signs of wear with the loss of blades from Nos. 6, 7 and 8 turbines. Work began on the third phase of development, the replacement of the original 25 Hz plant with new 50 Hz plant. Between 1945 and 1948, two 50 MW, 33 kV, 50 Hz Parsons turbo-altemators and four Babcock and Wilcox boilers were ordered from Britain (some boiler components were manufactured locally at Mort's Dock). To make way for the new plant, Nos. 1 and 2 turbo-alternators and Nos. 1 and 2 boilers (the oldest in the 25 Hz section of the power house) were removed and demolition of the original No. 1 Boiler House began.

The construction program was seriously delayed by the postwar shortages of steel and other materials and further difficulties were created by labour strikes in the coal industry in 1948 and 1949. The boilers were modified to burn up to 10 per cent oil to compensate for the poor quality and grading of the coal available and two 24,000-gallon oil tanks were installed. The efficiency of the 50 Hz plant fell from 16.5 per cent in 1947–48 to 14.87 per cent on 1948/9 because of poor coal, greater use of obsolete plant and excess loading. By 1950, the Nos. 6, 7 and 8 turbines again developed problems with loss of blades (and in some cases entire rings) and heavy load shedding became necessary. To make matters worse, the 25,000 kVa frequency changer exploded and burned in November 1950. After an unsuccessful repair attempt, it burned out again in May 1951 and did not re-enter service until April 1952.

Figure 2.6.6.1
White Bay Power Station and the White Bay Hotel (left of picture) from the tops of the Glebe Island Wheat Silos about 1960.
(Collection of Pacific Power)

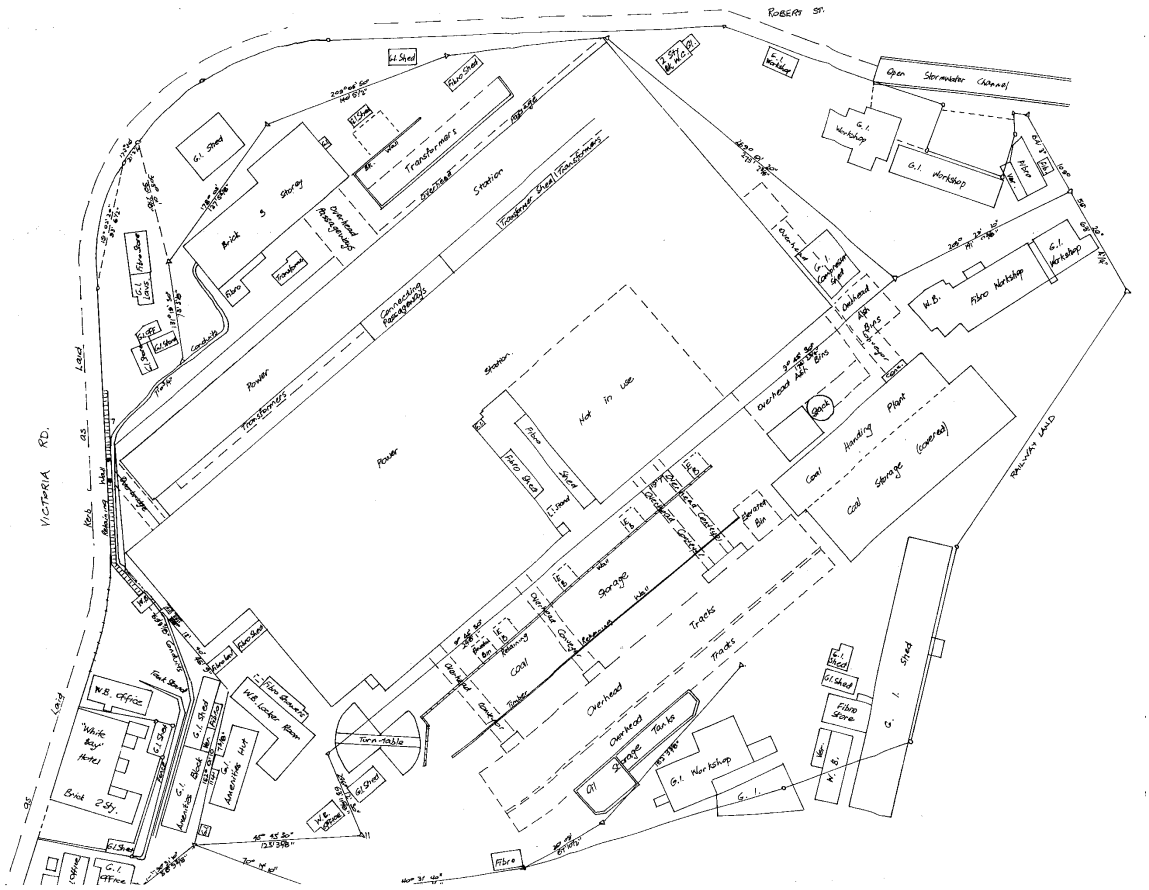


Figure 2.6.6.2
White Bay Power Station and White Bay Hotel Detail Survey July 1953. Note the numerous smaller sheds around the site.
(Courtesy of Godden Mackay Logan, CMP Vol. V, Figure 2.7)

The first Parsons 50 MW turbo-alternator (No. 1) and new boilers (Nos. 1 and 2) were finally placed in service on 8 April, 15 April and 16 June 1951 respectively, with the boilers occupying a new High Pressure (HP) Boiler House. The second Parsons 50 MW unit, already on site for a year, was to be installed in the position of the original No. 4 turbo-alternator, which had been transferred to Ultimo to make way for it. The Nos. 3 and 4 boilers, the last remaining from the first phase of White Bay's development, were taken out of service on 18 July 1952 for transfer to the RC power station at Lithgow. Temporary arrangements were made to provide low pressure steam from the High Pressure (HP) Boiler House to the No. 5 turbo-alternator, which was the last remaining 25 Hz turbo-alternator. In late 1952, an additional floor was built on to the roof of the 11 kV switch house to accommodate a new battery room and staff amenities.

On 1 January 1953, the White Bay Power Station was transferred to the newly formed ECNSW, along with all other RC power stations and associated facilities. The ECNSW also acquired several power stations under construction and there were chronic shortages of materials and skilled labour. The completion of the next phase at White Bay was further delayed and the second 50 MW unit at White Bay was finally commissioned in the second half of 1955. Even so, it was able to function only as a standby for nearly three years, until the new Nos. 3 and 4 boilers came into service in April and June 1958.

The completion of the third phase of development followed the removal of the last 25 Hz generator, and brought the capacity of the White Bay Power Station to its maximum of 186 MW. Of this, 86 MW was plant installed during the second development phase from 1925 to 1928. This was used only in emergencies after 1958, was decommissioned in 1975 and was subsequently removed, allowing demolition of the No. 2 Low Pressure Boiler House.

The two 50 MW units remained in service for peak load and emergency purposes and were last used intensively in 1982, during plant shortages caused by the Liddell Power Station breakdowns. They were finally decommissioned in 1983.

2.6.7 From Closure to the Present

White Bay Power Station remained static for a number of years after it was closed, while other issues preoccupied the ECNSW. The National Trust of Australia (NSW) began making representations to the ECNSW soon after it closed regarding the preservation of the station for historical reasons, particularly in view of the relatively good condition of much of the plant. For this reason, the options for preservation were reviewed and the heritage value of the Station was assessed.[1] As a result of these considerations, the ECNSW determined to mothball the Station for the immediate future and, unless a more immediate solution was forthcoming, to preserve at least a representative set of the installed equipment.

Figures 2.6.7.1 & 2.6.7.2
The closed White Bay Power Station used as a set for film and fashion
(GQ magazine)

The ECNSW was spilt into two operations in 1992: Pacific Power to handle the production of electricity at the power stations and Tansgrid to handle the reticulation of power from the various power stations across the state grid.

Difficulties with cost, public safety and ongoing maintenance meant that in the late 1980s and early 1990s, the power station was stripped of everything except those elements specifically identified for heritage conservation. Even these items were themselves heavily affected by the removal of all asbestos insulation and lagging, especially the surviving boiler.

The Sydney Harbour Foreshore Authority was established by Act of Parliament in January 1999 to be responsible for the management and development of the government-owned parts of the harbour foreshores. It purchased the White Bay Power Station from Pacific Power in June 2000.

In February 2011 Sydney Harbour Foreshore Authority held an open day at the White Bay Power Station. The event opened the doors of the building to the public, allowing access to the site for people to gain a greater understanding of the building, its spaces and its importance in the development of Sydney. This open day proved popular with tours being conducted of the coal handling shed, boiler house and turbine hall booking out in advance. Additional spaces including the Entertainment Hall and Administration Building were also open for the public to view. The Authority collected in excess of 800 names for notification of future open days at the site.

1 Reference is made to two reports: *Pacific Power Environmental Services, 'White Bay Power Station Asset Management Plan', May 1995* and *Don Godden and Associates & Heritage Consultants, 'The Significance of White Bay and Balmain Power Stations to Sydney's Industrial Heritage: A report to the Electricity Commission of NSW', 1989*.

Given the success of the February open day, two further open days were held over a weekend in May 2011. The Saturday consisted of a talk and tours day where the public could access the boiler houses, coal handling shed, administration building and entertainment hall and hear talks by heritage experts. Access to the turbine hall was provided by guided tour and in excess of 1,000 people took part. The Sunday was aimed towards photographers and provided access within the building for people to spend time taking pictures of the machinery and spaces.

The Authority received a great amount of positive feedback from the public, who expressed deep enthusiasm for retention of the building. A number of people were keen to see the power station adapted for future use that would ensure its longevity whilst maintaining a level of public access to the structure.

2.6.8 Evolution of White Bay Power Station

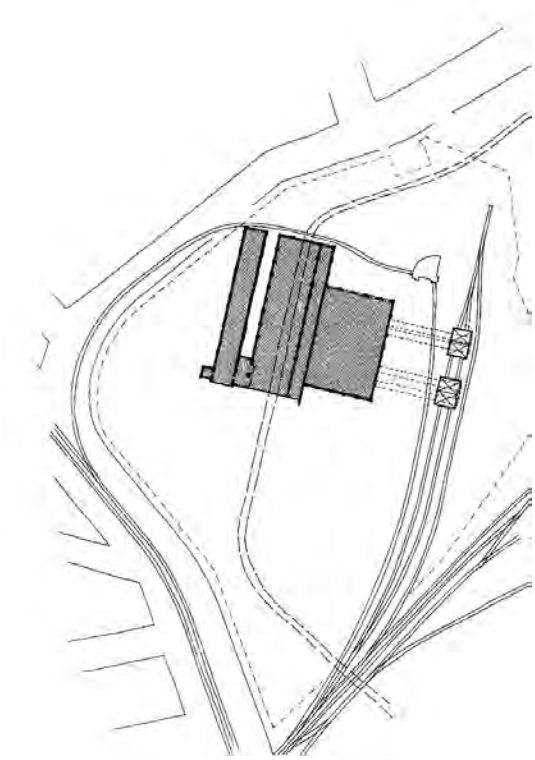


Figure 2.6.8.1
White Bay Power Station – Phase 1
as completed in 1917

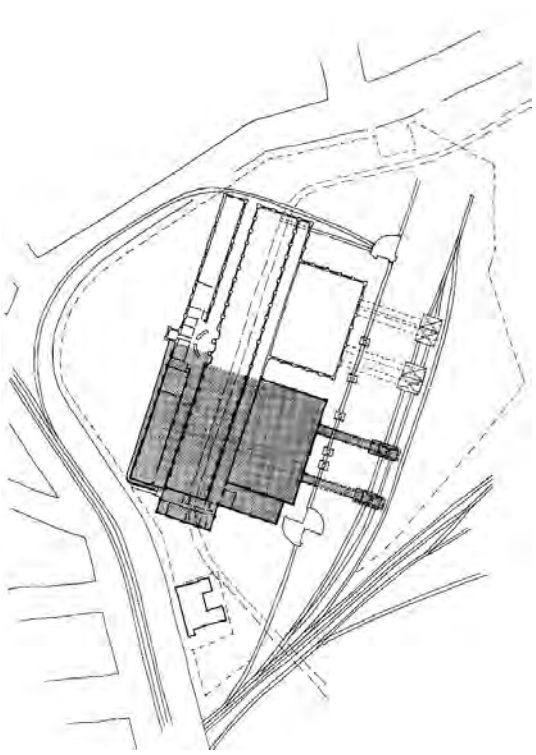


Figure 2.6.8.2
White Bay Power Station – Phase 2
as completed in 1928

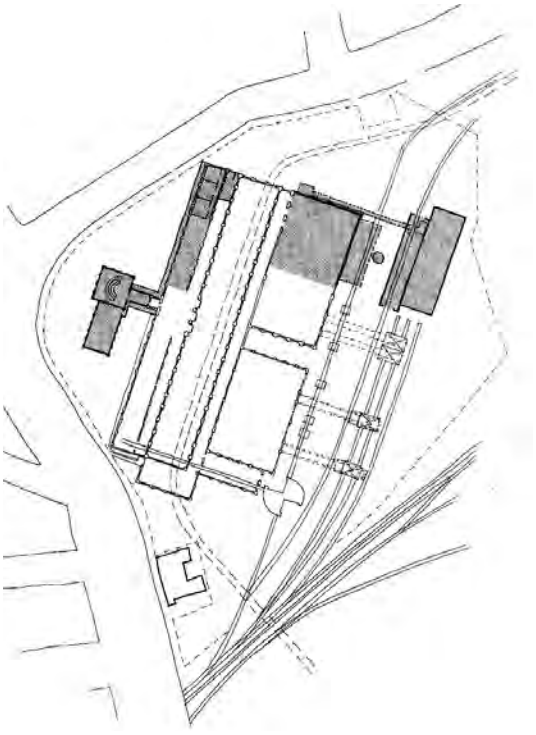


Figure 2.6.8.3
White Bay Power Station – Phase 3
as completed in 1953

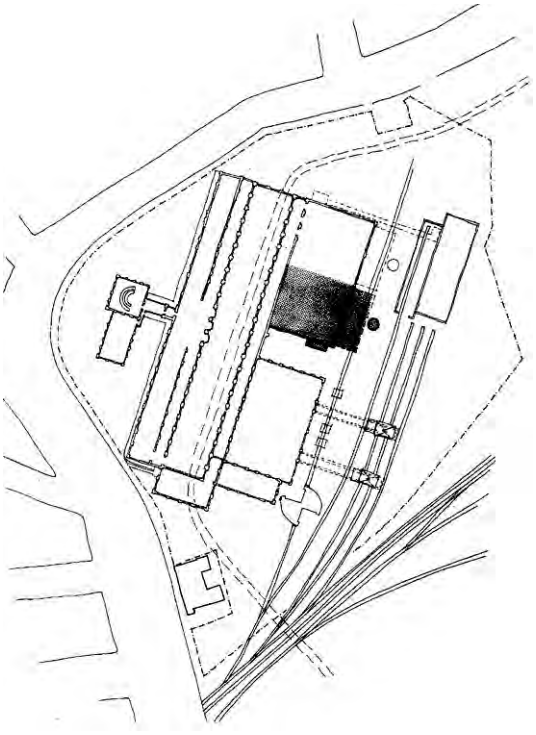


Figure 2.6.8.4
White Bay Power Station – Phase 4
as completed in 1958

2.6.9 1860 - 1916, The White Bay Hotel

The site of the White Bay Hotel was originally part of 550 acres land grant to William Balmain on 26 April 1800. This land also encompassed the White Bay Power Station site and is addressed in an earlier section of this report (Section 2.6.1).

The first White Bay Hotel was built in the early 1860s. It was located on the corner of Victoria Road and Lilyfield Road (then known as Crescent Street and later Weston Road and Abattoir Road respectively). The watercolour drawing in figure 2.6.1.1 (Slaughterhouses. Glebe Island. H.G. Lloyd 1863) shows the site of the hotel was vacant in the early 1860s.

Given the proximity to working class houses, the abattoir and rendering works, the hotel was ideally placed for both residents and the workers at these facilities. From 1910 the area was resumed by the Commissioner of Railways to build the Power Station. In January 1911, the site of the original Hotel was transferred from the owners Charles Brown and John Both to the Railways. Railways then leased the Hotel back to the Licensee

In 1915, the original Hotel was demolished to build new rail lines servicing the Power Station. In compensation to the Hotel owners, a new parcel of land was provided by the Railways Department approximately 100m north along Victoria Road. An undated covenant stated that the Hotel was to "be built from stone or brick and was to have cost not less than 5000 pounds." The White Bay Hotel was subsequently built circa 1916.

At the time of construction, the site was owned by the Commissioner of Railways. While the architect is unknown, the hotel is most likely to have been designed by Tooth and Co's architects as it is very similar to others from this period in this part of Sydney. Similar examples of hotels designed inhouse by Tooth & Co. are included in the comparative analysis section of this report.

Leased by the Railways to Tooth & Co Limited between 1916 and 1933, Tooth and Co Limited purchased the Hotel outright in 1933.

With the building of the power station and the first stage operational by 1917, the new hotel would have seen much of its trade from the workers at the power station.

Figure 2.6.9.1
Photograph from Victoria Road (Quirk Street) looking onto Western Road (Victoria Road), Balmain, showing the Power Station to the left and the Hotel on the right, c1927.
(Government Printing office, call number 1-13143)

Figure 2.6.9.2
White Bay Hotel Detail Survey, 26 October 1933
(Appendix C, Report prepared by Responsive Environmental Solutions, for Cole and Manning Media (then owners of the hotel site) in July 2006)

2.6.9.1 *White Bay Hotel - The 6 O'clock Swill*

Liquor licensing laws introduced in 1916 forced public bars to close at 6pm. Known as the 6 o'clock swill, it was the last minute rush to buy drinks at the end of the working day. Introduced to partly improve public morals, and get more men home to their wives earlier, it often fuelled an hour-long speed drinking session.

The consequence of the 6 o'clock swill left a tangible mark on most pubs and hotels during this time. To cater for the hour-long drinking session, hotels would make modifications to their establishments in order to serve as many men as quickly as possible.

As a result, the White Bay Hotel underwent internal alterations in 1925 and again in 1933 to maximise the length of the bar to allow maximum service before the 6pm closing time.

Under the ownership of Tooth and Co Limited, the hotel had various commercial leases from 1933 to 1990.

Figure 2.6.9.3
Aerial, c 1930 of the White Bay Power Station including White Bay Hotel in the bottom right corner.
(City of Sydney Archives, Citation no. SRC352, digital file 020\020600)

Figure 2.6.9.4
The White Bay Hotel, photograph dated October 1937.
(Noel Butlin Archives, ANU. Sourced: Heritage Impact Statement, White Bay Hotel, Andrew Howell Architect, June 2006)

2.6.9.2 *The White Bay Hotel - Decline*

Coinciding with the closure of the White Bay Power Station in 1982, the decline of the pub was assured. Road developments around the site including the busy Victoria Road, and City West Link, all but landlocked the pub from passing trade.

In 1990, Tooth and Co Limited sold the site to Blairgrove Pty Limited. The White Bay subsequently closed its doors in 1992. The landmark nature of the building meant that it was mainly used to hold billboards and this became the sole source of income. This use continued from closure until 2004.

In June 2006, the owner at the time lodged a development application with the Sydney Harbour Foreshore Authority for a restaurant and bar in the basement and ground floor and the erection of a four storey office building at the rear of the hotel. The proposal also included a carpark and an advertising panel on the side of the hotel (Sununda Creagh, Sydney Morning Herald, "Beer may flow once again at the White Bay Hotel", June 2, 2008).

The White Bay Hotel was destroyed by fire on 5 September 2008. In June 2010, the site was acquired by the Sydney Harbour Foreshore Authority.

Figure 2.6.9.5
White Bay Hotel front elevation, 26 January 2008
(Photographer: J Bar, Available through Wikimedia Commons, file: White Bay Hotel.jpg)

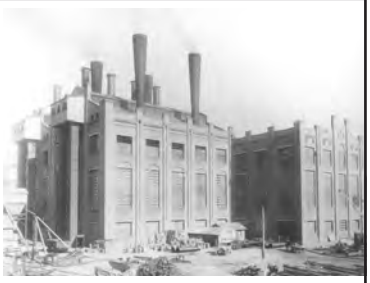
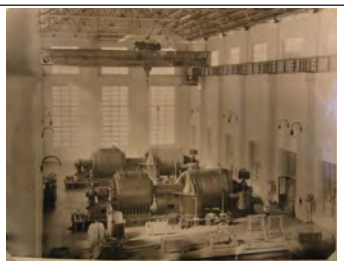
Figure 2.6.9.6
White Bay Hotel demolition, 6 September 2008
(Source: Peter Fletcher Available through Wikimedia Commons, file: White Bay Hotel.jpg)

Figure 2.6.9.7
Photograph of White Bay Hotel dated 2000 showing billboard advertising.
(National Library of Australia, image no. nla.pic-an23264374).

Figure 2.6.9.8
the White Bay Hotel, Internal.
(Photo: Peter Rae, Sydney Morning Herald. Sununda Creagh, "Beer may flow once again at the White Bay Hotel", June 2, 2008)

2.6.10 The White Bay Power Station and White Bay Hotel – detailed history

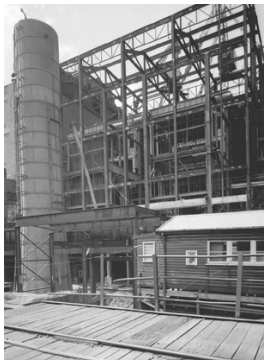
Throughout this section rated output is given in the current measure of Megawatts. The first reference to this use is found in the Report of the Electricity Commission of NSW for the period 22nd May 1950 to 30 June 1952, p.7.

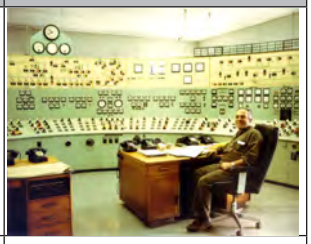
Year	External events	WBPS buildings	Equipment	Illustrations
1912-1917	1914-1918 Great War in Europe	The first half of the Turbine Hall, the Switch House and one Boiler House built in brick designed in the Drawing Office of the New South Wales Railway White Bay Hotel built c1916.	1 Turbo Alternator 7.5 MW 25 Hz & Boiler on temporary foundations (later transferred to Newcastle) Temporary Boiler House (L) and Turbine House in 1913 (source: Powerhouse Museum)	
1917		Building completed. First stage of White Bay Power Station becomes operational in May	The first boiler house and turbine hall completed and operational in 1917 (source: Mitchell Library)	
1916-1919			3 Turbo Alternators installed 8.75MW 25Hz and 4 Babcock & Wilcox boilers. Nos 1 & 2 Turbo Alternators being installed 1916 (source: Powerhouse Museum)	
1918			Total station capacity stood at 28.5 MW.	
1919			One 7.5 MW Turbo Alternator transferred to Newcastle.	
1923		Commencement of second stage of work at White Bay Power Station commenced. This stage work was constructed of steel framing and reinforced concrete.	2 Turbo Alternators 22MW 50Hz. Total output 63.75MW. Output unified with Ultimo Photo taken 1972, showing the 1923-8 Second Boiler House of 1923-8 (soure: Pacific Power archives)	
1925 1926		White Bay hotel alterations (presumably to increase bar capacity)	An additional 22 MW Turbo Alternator is installed to meet increased loading supply to the Sydney City Council. Parson 22,000 Kw Turbo Alternator at installation (no. 9) (Design 5 collection)	
1927			Two additional 18.75MW Alternators.	

Year	External events	WBPS buildings	Equipment	Illustrations
1928			5 x 50 cycle units installed to meet increased demand. Total output now rated at 86 MW	
1929	Bunnerong Power Station opened in January to supply Sydney Municipal Council. Demand falls further during 1930s recession	Bulk sales of electricity from White Bay cease.	Aerial view of Power Station in 1930 (source NSW LPI)	
1931 1933		White Bay hotel alterations (presumably to increase bar capacity)	7,500Kw Frequency charger is transferred to Zara Street Power Station (Newcastle).	
1939 - 1945	World War II	No new building – planning for modernisation	1939: 25,000KVA frequency changer installed to tie 25Hz (LP) and 50Hz (HP) systems together effectively doubling the output of the Power Station. Aerial view of Power Station in 1942 (source NSW LPI)	
1945-1948		Demolition and reconstruction works at White Bay Power Station.	Nos 1 & 2 battery boilers and 2 Turbo Alternators 8.75 MW removed. 1948: 2 Parsons Turbo Alternators 50 MW 50 Hz ordered from the UK.	
1949			Boilers modified to burn up to 10% oil due to coal shortages by miners' strikes. Two 24,000 gallon oil tanks installed.	
1950	Electricity Commission of New South Wales[1] established		25,000Kva frequency convertor explodes (and again in 1951 – out of service until 1952)	

(Footnotes)

[1] 'brought into being with both the immediate task of increasing power generation as rapidly as possible, utilising and consolidating existing means of generation and of developing resources to cater for the future of electricity requirements of the State' *Report of the Electricity Commission of NSW for the period 22nd May 1950 to 30 June 1952*, p.9

Year	External events	WBPS buildings	Equipment	Illustrations
1951 – 1953		First half of a new steel framed boiler house replaced the first Boiler House of 1912-1917. Nos 1 & 2 boilers and No 1. 5 MW Turbo Alternator started in 1951.	Aerial view of Power Station in 1951 showing the first half of the replacement for the first Boiler House. Note the pollution from the second (LP) Boiler House. (source: NSW LPI)	
1952		Additional floor built onto the roof of the 11Kv Switch House for new battery room and staff accommodation.		
1953	1 Jan 53 - White Bay Power Station transferred to ECNSW	Second half of the new boiler house started building	The steel frame of the second half of the new boiler house with new chimney stack part built (source: Pacific Power archives)	
1955			Second 50 MW Turbo Alternator commissioned – the last to be installed in a Sydney Power Station.	
			Two Parsons 50 MW Turbo Alternators in 1957 (source: Pacific Power archives)	
1958			Nos 3 & 4 boilers commissioned but delayed due to chronic skilled labour and materials shortages. Rated output now 186 MW.	
1958-1975			LP boiler house and 86MW system (built 1923-8) used only in emergencies.	
			Aerial view of Power Station in 1961 showing the replacement for the first Boiler House now complete and fully operational as can be seen from the smoke from both chimney stacks. (source: NSW LPI)	
1967		Both stacks were upgraded with guy wires and vibration dampers.		
1975			LP system decommissioned	
1976		Second boiler house demolished	LP system decommissioned	

Year	External events	WBPS buildings	Equipment	Illustrations
1983			Christmas Eve. Power Station shut down Operator in Control Room. (source: Eitel Camilleri private collection)	
1984			WBPS decommissioned after 70 years of service.	
1985			133/33Kv substation brought into service.	
1992	ECNSW becomes Pacific Power & Transgrid White Bay Hotel closes its doors			
1995		The site was decommissioned in line with principles and recommendations of the White Bay Power Station Asset Management Plan (1995).	The principal components of one set of power generation, coal handling and associated facilities were left intact. The rest removed and sold.	
1996		Asbestos removal program undertaken	Precipitators removed	
1999	SHFA established			
2000		SHFA buys WBPS from Pacific Power		
June 2000	Sydney Harbour Foreshore Authority buys White Bay Power Station from Pacific Power.	Site used for events, parties, films, media launches and other functions	(source: GQ Magazine)	
2002/3	SHFA engages Design 5 - Architects to prepare CMP			
2004-present	Site not available to the public due to safety concerns. Some controlled tours still occur but they are rare and limited in scope.			
Sept. 2008		White Bay Hotel burns down 5th September	(Source: The Daily Telegraph, 08/09/2008)	
June 2009 – March 2010		State Government establish the Bays Precinct Community Reference Group (CRG). First stage in public consultation for the future use of Bays Precinct and WBPS		

Year	External events	WBPS buildings	Equipment	Illustrations
June 2010	Sydney Harbour Foreshore Authority buys White Bay Hotel Site	White Bay Hotel Site cleared of debris		
Nov 2010	SHFA engages Design 5 - Architects to update CMP			
Feb & May 2011		Community Open Days		

2.7 Comparison with similar places

2.7.1 Comparison of former power stations and industrial buildings retained and converted for other uses

Current Name	Current Use	Former Name	Former Use	Location	Architect for adaptive re-use
Casula Power Station, Casula	Arts centre	Casula Power Station	Power Station	Casula, Sydney	Tonkin Zulaikha
Powerhouse Museum	Museum	Ultimo Power Station	Power Station	Harris Street Ultimo	Lionel Glendenning, 1988
Canberra Glass works	Workshop, public education	Kingston Powerhouse	Power Station	Canberra, ACT	Tanner Architects 2005
East Perth Power Station	Under Master plan	East Perth Power Station	Power Station	East Perth	Under Master Plan
Former Richmond Power Station	Country Road Headquarters	Richmond Power Station	Power Station	Cremorne, Melbourne	Metier 3 Architects
Brisbane Power House Arts	Cultural centre, Arts	New Farm Powerhouse	Power Station	Brisbane	Peter Roy
Tate Gallery, Liverpool	Art Gallery	Albert Dock, Liverpool	Dockside Warehouse	Liverpool, England	James Stirling, 1987
Battersea Power Station	Under proposal	Battersea Power Station	Power Station	South London	Rafael Vinoly
Tate Modern	Art Gallery	Bankside Power Station	Power Station	London, England	Herzog & De Meuron, 2001
Culture and Congress Centre	Concert Hall	Paper Mill	Paper Mill	Norrkoping, Sweden	Lund & Valentin, 1994
Giorgio Armani Couture House	Couture House	Nestle Chocolate factory	Chocolate factory	Milan, Italy	Tadao Ando, 2001
Media Centre, Hamburg	Mixed Use complex		Propeller factory	Hamburg Germany	Medium Architekten, 1993

2.7.2 Within the Sydney Metropolitan Area

White Bay Power Station was the longest serving power station in Sydney from 1913 to 1983, a period of 70 years of power generation compared with 64 years at Ultimo and 60 years at Balmain A. Although the Pyrmont site was in longer service, from 1904 to 1983, the original power station building was completely superseded.

For comparative purposes the dates of other Sydney Power Stations are given as follows (From Godden Mackay Study of 1996):

Power Station	Date of Construction	Current state
Redfern	1891 – 2	Demolished
Ultimo Phase I	1899 – 1909	Power House Museum
Pyrmont A	1904 – 1914	Demolished
Balmain Phase I	1909 – 1914	Demolished
Cockatoo Island	1918	Decommissioned. Some equipment remains as heritage items
Ultimo Phase II	1922 – 1932	Power House Museum
Balmain Phase II	1923 – 1928	Demolished
Bunnerong A	1929	Demolished 1980
Bunnerong B	1939	Demolished 1986
Ultimo Phase III	1941	Power House Museum
Balmain Phase III	1956 – 1957	Demolished
Pyrmont B	1950	Demolished

Powerhouse Museum, Ultimo

The Ultimo powerhouse was constructed in 1899 and ceased being used as a power house in 1963 with the phasing out of Sydney trams at that time. It was adaptively reused to become part of the Powerhouse Museum from 1985. The Powerhouse Museum (formally the Museum of Applied Arts and Science) opened in 1988.

Virtually no original machinery survived. The landmark and highly significant chimneystacks have since been demolished.

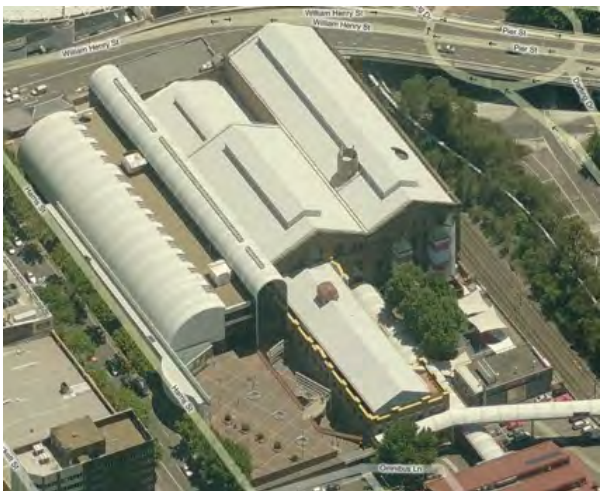


Figure 2.7.2.1
PowerHouse Museum, Ultimo
(Bing Maps, 2010)

Casula Powerhouse Arts Centre (Casula)

In the 1950s, the Electricity Commission of NSW established a number of "package" power stations, all of similar design and built to provide interim local generating capacity while a statewide grid based on regional power stations was established. These power stations, all similar, were constructed at Casula, Penrith, Port Kembla and Maitland.

Casula Powerhouse, (then known as the Liverpool Powerhouse) operated from 1951 to 1976. In 1978 it was bought by Liverpool Council but it was not until 1993 that funds were allocated for its adaptive reuse as an arts centre. The arts centre was opened in 1994 and underwent a second phase of development in 2006 to 2008. The centre accommodates exhibition space, 326 seat theatre, other theatre and performances space, artists studios and artists residencies, storage and offices.

While the main power station building (which would have contained the boiler, and turbine house), and ancillary structures survive, most of the plant including generating and switching equipment has been removed.

The Penrith Powerhouse is currently used as the Museum of Fire in Penrith.

2.7.3 Outside the Sydney Metropolitan Area

Canberra Glass works

Built between 1913 and 1915, the Kingston Powerhouse supplied coal-fired electricity (reciprocating steam engines) to Canberra from 1915 until its closure in 1957. The Powerhouse is located along the banks of Molonglo River (now Lake Burley Griffin) to provide cooling water for steam. Following decommissioning, the powerhouse was used as storage and workshops. The powerhouse received new interest with the redevelopment of the industrial area of Kingston with residential developments and luxury

Figure 2.7.3.1
Canberra Glass Works
(Design 5 – Architects, 2010)

apartments located in close proximity to Lake Burley Griffin.

Adaptive reuse included converting the building to a contemporary art centre. The centre provides studio facilities, equipment for artists, gallery store and gallery spaces. Public access is available to most parts of the building including viewing platforms for public to overlook restricted workshop spaces.

Surviving elements include the boiler room including coal hoppers, engine room including gantry cranes, switch room, coal elevator, economiser room and remnant stack. Most machinery had been removed prior to the first conservation Management plan for the site in 1993.

Former Richmond Power Station

The Former Richmond Power Station is a complex of buildings located between the South Yarra-Richmond railway line, the Yarra River and Church Street. The power station was opened in 1891 and underwent several phases of renovation and upgrading of equipment as demand increased. It may be the oldest electric power station in Victoria and the first electric power station to adopt full AC (alternating current) generation.

Figure 2.7.3.2
Former Richmond Power Station
(Design 5 – Architects, 2003)

In 1930, the plant was purchased by State Electricity Commission of Victoria and although obsolete, the station continued to operate as a peak generation plant until its closure in 1976. The building remained derelict until the early 1990s when the complex was converted to an office park. In 1997, the building was restored and a modern extension was added for use by Country Road as their head office.

The chimneystacks and most buildings dating from the 1930s and 1940s have been demolished.

Brisbane Power Station (formally known as the New Farm Powerhouse)

Constructed in 1926, the powerhouse underwent a number of alterations until 1940s. It supplied electricity to the tramway system of Brisbane as well as power for nearby suburbs. In 1963, Brisbane City Council sold the powerhouse to the State Electricity body and it was decommissioned in 1971.

Figure 2.7.3.3
The Brisbane Powerhouse Arts.
(Photo: Brisbane Powerhouse Arts, brochure).

From the 1970s to the late 1990s, the site remained derelict, used by artists, a place for homeless and street kids and a training site for the army.

In 1989, the power station was re-acquired by the Brisbane City Council and in 2000, the powerhouse was reopened as an Arts Centre. The centre utilises large internal

spaces to accommodate new art theatres and performance spaces, gallery space, rehearsal rooms, function rooms and offices. The reuse celebrates and preserves the twin histories of the old powerhouse; as an industrial site generating coal-powered electricity and as a derelict building where people found refuge, staged parties and left their marks.

The former boiler house has been demolished. Virtually all of the original machinery had been removed during decommissioning in 1971.

East Perth Power Station

The power station was constructed between 1913-1916 to generate electricity for the Perth metropolitan area. New power generators were added to the facility in the 1920s, 1930s and 1950s. In 1968, the power station was converted from coal to oil, but six years later returned to coal firing. The power station was closed in 1981.

The facility is significant for retaining a range of remnant machinery and equipment including five different stages of power generation in the 20th century.

Early works carried out in 2004-2005 included clean-up of broken glass, pigeon droppings and other debris from the interior. Further stabilisation works in 2005 included removal of asbestos, repair of concrete walls, reglazing of windows and repair of steel structures and painting.

The East Perth Redevelopment Authority (EPRA) prepared a Master Plan for the 8.5 hectare site in 2004 for public comment. This Master Plan is currently being finalised which will provide for the reuse as a mixed-use waterfront precinct with a range of urban living, working and leisure facilities. Not unlike the White Bay Power Station, it is intended that the East Perth Power Station will be an entry point and catalyst for the activation of the northern stretch of the Swan River.

2.7.4 Selected International Comparisons

Battersea Power Station

Battersea Power station is located along the south bank of the River Thames, in Battersea, South London. The station comprises two individual power stations built to identical designs. Battersea A Power Station was built in the 1930s and Battersea B Power Station was built in the 1950s. The Power Station generated 503MW providing a fifth of London's power demand and creating 500 tonnes of CO2 per hour. Due to pollution concerns and shift in power generation, the station A was closed in 1975 and Station B eight years later.

Figure 2.7.4.1
Battersea Power Station (South London)
(Photographer: David Samual (20 October 2010), Available through Wikimedia Commons, file: Battersea Power Station, Nine Elms, London. jpg)

Since closure, the site has remained unused. A failed attempt for the redevelopment of the power station in the late 1980s have left large parts of the building without a roof and thus its interiors exposed to the elements.

Current proposals include the reuse of the Power Station and redevelopment of the surrounding area. The Power Station building itself will be reused as a mix of residential, retail, office, cultural and conference spaces. New forms of electricity generation will also be housed in the former power station creating 30 mega watts of electricity and will use the buildings existing chimneystacks as the venting system.

Including the redevelopment of the Power Station, the site area will involve the construction of 16 buildings, comprising of residential, retail, office, hotel and community leisure uses. These buildings will range in size of 8 to 18 storeys. Work will also include extension to the London underground northern line that will link the site to London's underground public transport network.

AR 1097: James Stirling's Tate Gallery, Liverpool

Just as Le Corbusier in the years prior to the War had incorporated local materials and vernacular elements to regionalise his buildings, so Stirling drew on his surroundings to affect a toughened up and regionalised version of Corbusian Modernism. He did this by adopting the materials, details and functional directness of the still ubiquitous and unappreciated buildings of what J.M. Richards would dub "the functional tradition", of which Liverpool's Albert Dock is amongst the most magnificent examples. As part of the conversion to an art gallery, all of the power generating machinery was removed from the building.

Tate Modern, London

Designed in two phases between 1948 and 1963, Bankside reflects Scott's interest in the early Dutch Modernism, manifest in a taut, Dudok-like brick skin incised by rows of vertical openings. Herzog and de Meuron leave this stern geometry largely intact, making new cuts only where absolutely necessary. They also maintain the simple tripartite arrangement of the original plan based on a central turbine hall sandwiched between a boiler house on the north side and a switch house to the south.

Figure 2.7.4.2
Tate Modern, London
(Design 5 - Architects)

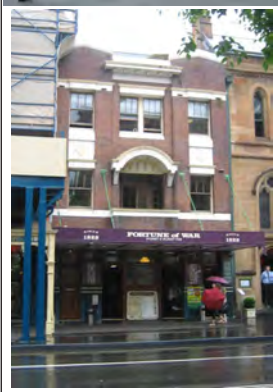
Media Center, Hamburg

The result, is not bland harmonisation but an expressive tension between the massive structural brick and exposed steel beams of the factory structure and the curvaceous lighter metal sections and glass of the modern infill and adaptation. History is visible. Everywhere in the building the past and present can be read side by side. These contrasts create a resonant, muscular architecture with a respect and reference to history that is far removed from the effeteness of Post-Modernism.

The new insertions reflect both the spirit and materiality of former times, drawing on a rich seam of industrial archaeology…A sense of history linked with a new technology industry, a form of commercial romanticism, visual diversity and mixed use, make this an inspiring potential model city of the next century.

2.7.5 Comparison of Hotels

The following hotels are located in nearby areas including The Rocks, Surry Hills and Ultimo. Stylistically they are all similar to the former White Bay Hotel; face brick exteriors and either Inter-war, Edwardian or Federation Free style. Most of the hotels listed below also have associations with Tooth & Co Ltd, as either the owners / lessees of the site, inhouse designers, or both.

Name	Listing	Photograph
Name/date: The Mercantile Hotel, 1914 **Address:** 25- 27 George Street, The Rocks **Description:** Face brick Federation Free Style with string coursing, dentil cornice and parapet roof. Significant associations with the early maritime and mercantile activity in The Rocks through its location close to key early wharves and warehouses. Associated with expansion of Tooth & Co. Ltd, designed by resident architects Spain and Cosh.	SHR s170- SHFA	
Name/date: The Glenmore Hotel, 1921 **Address:** 96 Cumberland St, The Rocks **Description:** Face brick Interwar style building with flat roof. Representative of the post-plague rebuilding era in the Rocks. Well-preserved example of a small one bar hotel, embodying Australia's changing drinking habits by the gradual expansion of the public bar drinking facilities. Designed by Tooth & Co. resident architects.	SHR s170- SHFA	
Name/date: The Kay Bee Hotel, c1936 **Address:** 26 Foveaux St, Surry Hills **Description:** Face brick Interwar style with gabled parapet, string coursing and bracketed dentil cornice. Located on a prominent corner site, contributory element in the streetscape. Associated with the brewers Tooth and Co. Designed by Tooth & Co. resident architects.	Local	
Name/date: Fortune of War Hotel, 1922 **Address:** 137 George St, The Rocks **Description**: Face brick Californian Bungalow Interwar style with parapet, string coursing and bracketed cornice. Designed by Tooth & Co. resident architects.	SHR s170- SHFA	

Name	Listing	Photograph
Name/date: Palisade Hotel, 1916 **Address:** 35 Bettington St, Millers Point **Description:** Face brick five storey Federation Free Style building with string coursing and parapet. Designed by engineer H.D Walsh. Representative of the post-plague rebuilding era in the Rocks. Associated with Tooth & co, who held the lease from the 1920s-1950. Considerable townscape contribution through its prominent siting providing terminal views along several streets. Tall and narrow form contrasting with lower scale buildings adjacent. Landmark qualities.	Local	
Name/date: Bristol Arms Hotel, 1922 **Address:** 424 Harris St, Ultimo **Description:** Face brick Interwar style building with gabled parapet, string coursing and bracketed dentil cornice.	No listing	
Name/date: The Observer Hotel, 1908-1909 **Address:** 69 George St, The Rocks **Description:** Face brick Federation Free Style building with string coursing, bracketed cornice and gabled parapet. Art nouveau motifs. Designed by Halligan & Wilton. Representative of the post-plague rebuilding era in the Rocks. Associated with Tooth & co, who owned the site between 1908 and 1977.	SHR s170- SHFA	

Conservation analysis

SECTION 3
Assessment of cultural significance

The 'Guidelines to the Burra Charter: Cultural Significance' states that, the assessment of cultural significance and the preparation of a statement of cultural significance, embodied in a report as defined in section 4.0 [of the Guidelines] are essential prerequisites to making decisions about the future of a place.

This section considers all of the information collected in Section 2 and clarifies what the culturally significant attributes of the place are. All aspects of significance are discussed and assessed to formulate clear statements of cultural significance.

3.1 BASIS OF ASSESSMENT

'Cultural significance' is defined in the Burra Charter as meaning the *aesthetic, historic, scientific, social or spiritual value for past, present or future generations.* These values are used as the basis for this discussion. The Charter further clarifies that *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.*

With the creation of the State Heritage Register under Part 3A of the Heritage Act, in April 1999, the NSW Heritage Office has developed a set of seven criteria against which the cultural significance can be assessed to determine the level of significance, i.e. State or local. State Significance means significance to the people of New South Wales, and Local Significance means significance with the Local Government Area (LGA). In this assessment, significance is discussed with regard to the four categories set out in the Burra Charter (1999).

Following this discussion, the significance of the place is assessed against the 7 criteria for State Heritage Register listing to determine its level of significance, even though it is already deemed to be of State Significance by virtue of its being on the Register.

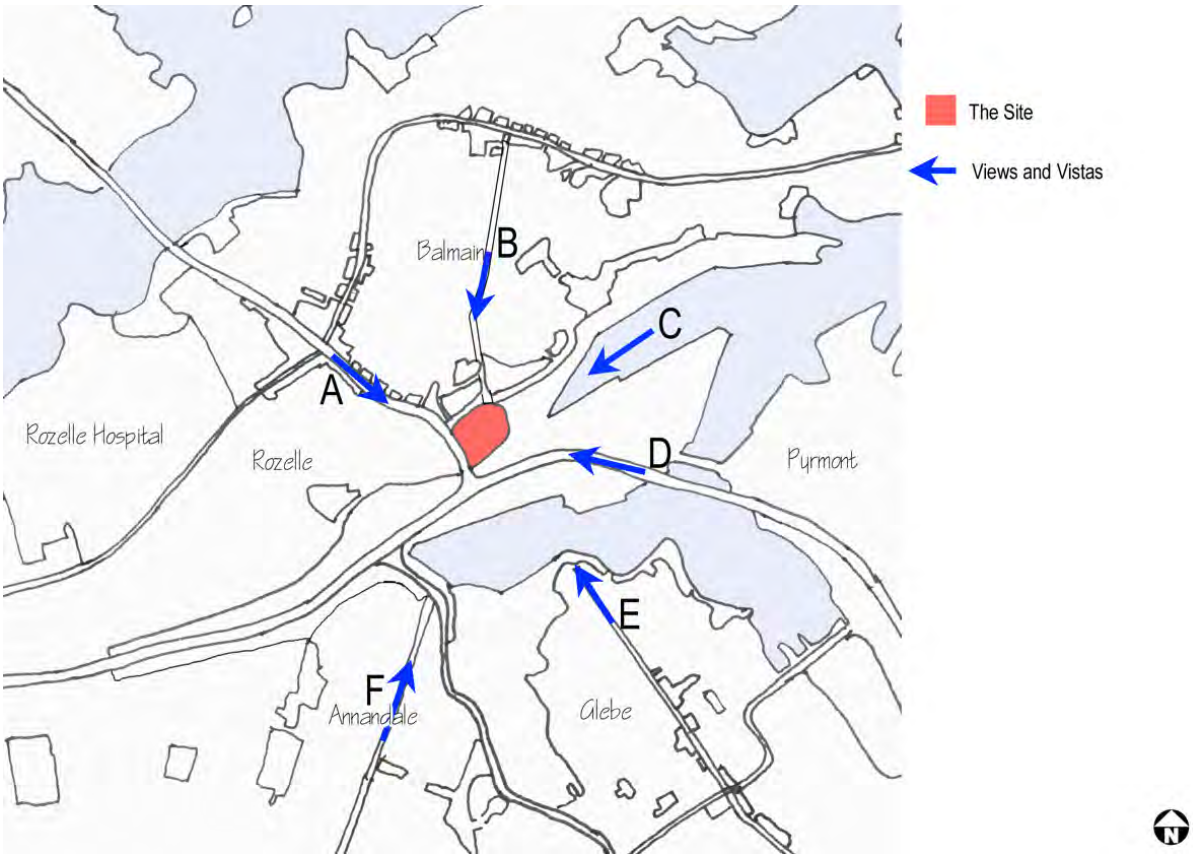
3.2 AESTHETIC SIGNIFICANCE

Aesthetic significance covers such areas as massing, expression of architectural form and detail. One' s perception of these is via the senses of sight, sound, touch and smell and all form part of the aesthetic experience. The aesthetic significance of the White Bay Power Station lies in a number of areas and rather than separate these out, they are discussed below under the various structures and spaces which make up the place.

3.2.1 Views

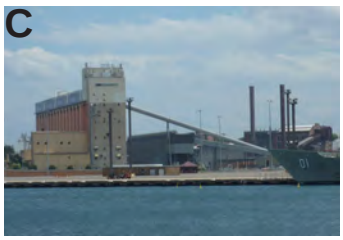
3.2.1.1 Distant views of the Power Station

Taking a distant view, the White Bay Power Station is one of the largest structures in the locality providing an industrial scale focal point in many approach vistas in the area. It is visually prominent from a number of significant roads in surrounding suburbs as shown below.



View along Victoria Road

View along Mullens Street



View from White Bay

View along Johnston Street

View along Glebe Point Road

View along the Anzac Bridge

Figure 3.2.1.1
Views and Vistas to the Power Station

It provides the focus at the end of Victoria Road and Mullins Street when proceeding towards the city also at the end of Johnston Street Annandale when proceeding north, and it is framed by, and on axis with, the pylons of the Anzac Bridge when proceeding west. It is seen from almost all its neighbourhood areas and because of the height of its chimney stacks and the length and mass of the buildings it is a prominent element from every angle. This aspect would be better appreciated if the Power Station were lit at night; it is very obvious on a clear morning when the place is lit by the light of the sun. Approaching it from the Anzac Bridge side once the sun is off the east elevation one is not always aware of it (apart from the chimneys) as it sits as a dark mass in the lee of the hill of Balmain. The extent of its bulk is made more obvious by the large grey concrete wall left after the demolition in 1976 of the second boiler house. This wall however appears as a half demolished structure and is not visually enhancing of the remainder of the place.

Figure 3.2.1.2
Ash Handling Unit
(Design 5 - Architects)

The dominance of the two chimney stacks are an impressive feature of the landscape and are seen from far distances. These stacks are among the few industrial chimneys remaining in the city and inner suburbs where they were once common. The stacks can be seen from many areas, and along main roads, such as Victoria Road, from the city, Balmain and from Drummoyne, Inner West Link route, Lilyfield Road, The Crescent and Johnston Street Annandale.

In all of these views, the White Bay Power Station is seen as part of a group of large scale industrial type structures and spaces which give this area a unique identity and character within the Sydney region. These related structures and spaces include the White Bay Container Terminal, the commercial and light industrial buildings on the north side of Robert Street, Rozelle rail yards, the Glebe Island grain silos, Glebe Island Container Terminal, and the Anzac Bridge. As a group they signify the entry or exit from the city because to the west and north the industrial scale gives way almost entirely to domestic scaled construction.

To anyone travelling by road to the city from the Annandale, Lilyfield and Balmain areas and beyond, the changing vistas of these White Bay and Glebe Island structures with its loading and unloading activities on the wharves provides a memorable and exciting and truly unique Sydney experience, an experience that is quickly being lost by the large scale redevelopment of these areas to a domestic scale and residential use.

Figure 3.2.1.3
Southeastern Elevation
(Design 5 - Architects)

As one gets close to the power station, particularly on the north and east sides, it is the scale and configurations of the structures and buildings which impresses. The tall steel chimneys, the coal handling shed and elevator tower with their strongly textured rusting corrugated iron forms juxtaposed and engaged with the massive brick walls, the pilasters and windows of the boiler and turbine houses, provide a visually and spatially exciting experience.

3.2.1.2 *Analysis of Views within and throughout the Power Station*

Even from within the site there are views which are an important part of this aspect of the aesthetic significance of the place. Many of these give glimpses of part of the building which lend themselves to an appreciation of the scale of the complex. At the time when the complex was complete and still operational - i.e. with the second boiler house erected, the

precipitators lined in a rank of four above the rail lines between the present boiler house and the chimneys, and a number of sheds and other ancillary buildings dotted around - the site appeared busier and more densely occupied, a place of activity and enterprise which is now missing. It has given way to a different aesthetic more of the kind to be found amongst ruins and deserted industrial sites.

Figure 3.2.1.4
View north from railway cutting
(Design 5 - Architects)

An analysis of the views is given in the following figure:

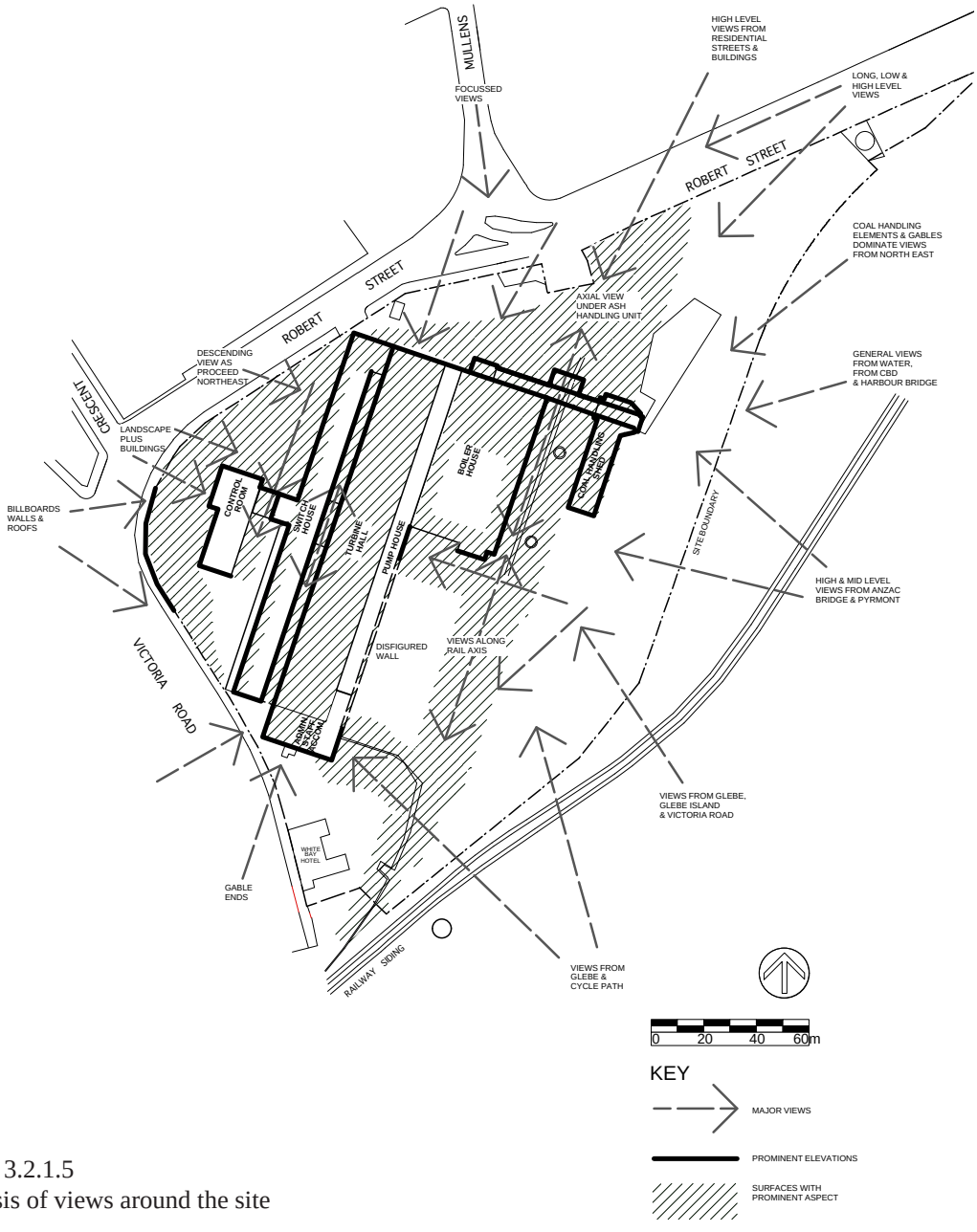


Figure 3.2.1.5
Analysis of views around the site

3.2.2 Structures and spaces within the Power Station

The structural design required to create the large spaces and uninterrupted spans the massive power generating machinery produced an architecture of rhythmical bays and to house massive proportions, with a repetition of elements such as windows and columns, and an abstract juxtaposition of shapes. This entirely functional design, where all the materials are used to maximum efficiency, and where ornament is stripped to a minimum, has all the hallmarks of the prelude to internationalism and the modern movement. In particular, the slender form of the steel chimneys against the massive bulk of the Turbine and Boiler Halls has formed a composition of abstract beauty on the Sydney skyline for the past century.

Internally there are a huge variety of types and sizes of spaces. From the 30m x 50m x 35m high Boiler House and the 140m long and 27m high Turbine Hall to the confined chambers and tunnels for switches and cables. Each part of the power generation process was housed in separately enclosed, generally linear spaces, all of them parallel to each other.

3.2.2.1 Coal handling shed and Ash Handling Yard

Internally the Coal Handling Shed and elevator is very much a dirty working shed, full of the coal blackened surfaces and smells of its original use. As a spatial and visual experience it is not impressive, exceptional or inspiring, however its part in understanding the process of producing power is of far greater significance. The interior of the elevator tower and the transfer conveyor tunnel are wonderful spatial experiences; however, these may not be generally accessible due to their nature and configuration. Externally the elevator tower and transfer conveyor tunnel's richly textured and rusting form is a very significant component in the aesthetic experience of the place, likewise the ash handling unit.

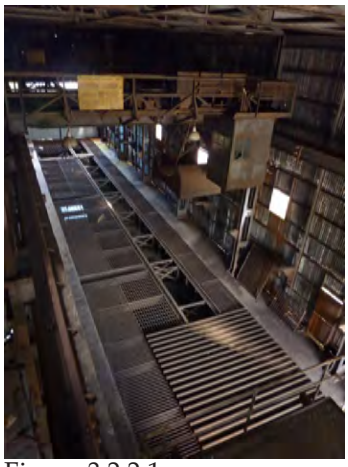


Figure 3.2.2.1
Coal Handling Shed
(Design 5 - Architects)

In the space between the Boiler House and the chimney stacks there is a very tangible presence or absence of the large precipitator units, now only suggested by the holes in the Boiler House wall, the scale of the Ash Handling unit and the bases of the steel support structures between and adjacent to the chimneys.

This whole space is now dominated by the sheer scale and texture of the Boiler House wall and the chimneys, and the rail tracks between them.

3.2.2.2 Boiler House

The Boiler House presents as a massive form externally. Half gabled roof and half flat roof, the incongruous marriage of two different construction techniques and styles is far less awkward in its reality than would appear from this description. The vast steel framed glazed curtain wall juxtaposed with the earlier smaller windows in the northern half give it a powerful and honest functional aesthetic. The large acrylic covered holes, where the exhausts to the precipitators have been removed, present the most obvious evidence of the mutilation imposed by the process of site decontamination.

Internally the Boiler House is an awe-inspiring space of cathedral proportions. The experience of light from the huge windows now penetrating the entire space, and the foreboding presence of the massive machinery of No I boiler at the northern end, give this space a truly unique experience. Little wonder that it was once a much favoured venue for corporate, marketing and media events. The raw and unpainted walls and surfaces, with evidence and fixings of earlier structures, is an integral part of this experience. This was a space so packed with machinery and structure that any comprehension of the total space

would have been very difficult, but with the removal of Nos 2, 3 and 4 units a new and exciting experience is offered.

Before the site decontamination exercise the boiler unit was entirely clad with a steel faced asbestos filled wall to contain the enormous heat of the fire. All gauges and control valves were visible. With this cladding removed, the complex and sinuous configuration of the water pipes is exposed, giving a somewhat false, but extremely fascinating, view of the boiler workings. These densely arranged pipes rise from the firing floor to the ceiling, some 30m above, and surround a void which was once the centre of the explosive fire of the boiler's furnace.

Figure 3.2.2.2
Boiler House
(Design 5 - Architects)

Acoustically this feels like a large space, but the complex surfaces, even though all hard, give little reflection. Nevertheless it retains the acoustics of a large void.

The enormous curved face of the coal hoppers high on the western side add a scale and form which reinforces the sense of being inside a machine space.

The voids left from the removed boilers juxtaposed with the extant boiler and its supporting structure add considerable power to the experience of scale, and provide tangible evidence and clues for interpretation.

A major loss and mutilation to the whole complex was the demolition in 1976 of No 2 Boiler House. This has left a massive raw and disfigured blank grey wall externally, and many bricked up openings to the Pump House area internally.

3.2.2.3 Pump House

The Pump House and Turbine Hall are built as one building under separate roofs. While they are connected at the lower levels by broad openings, internally they read as separate spaces.

The Pump House is very narrow but of the same length, and almost as high, as the Turbine Hall. At the northern end it is crammed with pumps, pipes, water tanks and their supporting steel structures, gantry cranes, walkways and stairs. In the southern half all except the steel supporting structures for the tanks has been removed. This gives a sense of great height and length which is greatly accentuated by the narrow width and the occasional missing roof sheeting, allowing shafts of daylight to penetrate to the floor. All surfaces are painted and generally clean and the experience is of spatial rather than surface texture, and of light points in the roof contrasting with areas of deep shadow, remote from any potential daylight. Very little direct daylight reaches the Pump House, except at the north end and the original space between the Boiler Houses.

Figure 3.2.2.3
Pump House
(Design 5 - Architects)

3.2.2.4 Turbine Hall

The Turbine Hall is the other major awe-inspiring industrial cathedral type of space. At the lowest floor level little can be appreciated of the whole space except where the voids in the turbine platforms permit views through to the roof. At the northern end this space is dominated below the main platform level by the sheer size and complexity of the remaining turbine and condenser machinery and pipework.

Where the remainder of the turbines have been removed, massive buttresses, pillars and plinth blocks remain, supporting a now relatively clean but fragmented platform area. Above the platform, the elevated northern end is dominated by the large pipes, turbine housings and associated control panels etc. of Unit No. 1, the 50MW turbine generator installed in 1952. Although its scale is enormous, it is dwarfed by the singular volume of the space above and to the south. The west and north walls contain tall windows of obscure glass which admit considerable light to this main platform level. This was the main operational floor of the power station, and this hall emphasises its singular purpose and importance. This platform steps down midway along the hall to the south and finally disappears leaving the full height of the space exposed at the south end. Above the platform the entire length of the hall is open to the gabled roof, except for the 3 remaining travelling gantry cranes, which add considerably to the sense of vastness and importance, and of heavy industrial use. The daylight which enters the space along the vented ridge, and the large windows to the west and north, give the sense of a large industrial cathedral. It is not difficult to imagine the constant low hum of the turbines in this space.

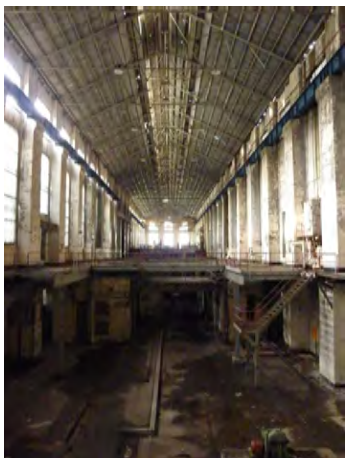


Figure 3.2.2.4
Turbine Hall
(Design 5 - Architects)

The sense of surveillance and monitoring is also strong and is emphasised by the 3 bay windows of the original central control room high on the west wall, and the windows to the administration area on the south wall. This is a place of precision, of cleanliness and efficiency, and all fittings and finishes are tidy, generally painted or polished, carefully arranged and placed. Gauges and dials measure and monitor outputs and efficiency.

3.2.2.5 *Administration Section*

The Administration section which overlooks the Turbine Hall is divided into smaller offices and staff facility areas. For any visitor to the Power Station, and for many of the 'clean' staff, this was the point of entry to the site. As such, the interior of the entry area is finely finished with polished Queensland Maple, a tessellated tiled floor, pressed metal ceiling and smart lift and stair. Externally this entry, via a bridge from Victoria Road, is very restrained and singularly unimpressive, compared with the rest of the site.

Apart from the entry area, the spaces are unremarkable in their finishes but some remain very evocative of their earlier use. In particular are the offices of the Power House Superintendent, the Laboratory, the staff lunch room and the locker room.

Figure 3.2.2.5
Laboratory Space
(Design 5 - Architects)

3.2.2.6 *Switch House Transformer Alley*

The open space between the Turbine Hall and the Switch House is another very evocative industrial space. Tall, long and narrow and bridged by large pipes, ducts and gangways, this is a tight service laneway space of a purely utilitarian nature. It is, nevertheless, an important spatial experience. It once housed a row of transformers at the ground level and evidence of these survives, with the rail tracks used to move these still extant.

3.2.2.7 1912-1927 Switch House

The 1912-1927 Switch House, long and narrow, is on 4 floors and comprises many parts. One of the most evocative and impressive spaces is the original Control Room area on the top floor which, in spite of its being almost devoid of the original equipment (and now full of pigeon droppings), retains the sense of control and surveillance by virtue of its elevated location and the view into the Turbine Hall.

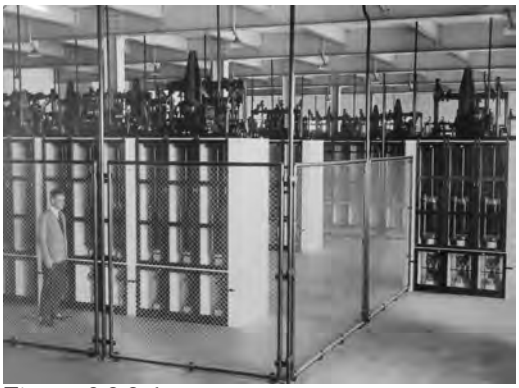


Figure 3.2.2.6
1920s Switch Gear
(courtesy of PowerHouse Museum archive)

Another highly evocative space and adjacent to the former Control Room is the 11kV Switch Room with its intact bank of switchboards and equipment.

Another important spatial or aesthetic experience is on the third level where the Bus Bars were and some still survive. Besides the obviously impressive and precise surviving machinery and cable elements, the rows of regular open concrete enclosures in this space give a very strong rhythm and identity to the space.

The lower levels of this building, at both the north and south end have very limited access to daylight, due in substantial part to later alterations which built over or blocked out windows.

A number of the spaces, particularly the lower 2 floors north of the central lift, are cellular in nature, arranged along one side. These spaces with their heavy steel grill or sliding fire doors present a cold and inhospitable machine-only environment. During the operational life of the power station these were dangerous areas due to the very high electrical charge being handled and distributed by the equipment. The tangible evidence of the danger exists in the form of the grill doors and the many safety signs.

The semi-underground cable tunnel commencing south of the centre lift and exiting east of the Admin Building is a unique subterranean experience and is indicative of how services are reticulated within urban areas.

The original 1917 lift and stair is a rare and intact element from this period and retains all of its high quality decorative grillwork and control panels.

One of the most evocative spaces on site, with regard to the social life of the staff is the Amenities/Entertainment Hall on the top floor, built in the early 1950s. It retains its original fittings, stage, painted murals and pinball machines.

3.2.2.8 1948 Control Room

In the 1948 the Control Room space is the clearest and most intact physical expression on the site of the monitoring, measuring and total control which was a major focus of activity during the station's operation. The curved and ordered arrangement of the control panels, dials and switches, clean shiny surfaces and abundant daylight all speak eloquently of the power and efficiency of the machine age.

Figure 3.2.2.7
1948 Control Room
(Design 5 - Architects)

The cable room and associated cable tunnels immediately below the control room are the underbelly, the intestines or nervous system of the brain above.

These spaces are raw but precise and efficient, with every cable labelled and precisely placed. This is where the work of the electrical engineer and the cable layer becomes a genuine art form. The patterns and textures formed by these cables and circuit boards rarely attain the quality and consistency that they have here except possibly at other early to mid 20th century power stations. This is akin to experiencing the inner circuitry of a mid 20th century computer and it is fascinating both visually and spatially, even for the non-engineer. It must be remembered that this pyrotenax, or mineral insulated fireproof cable, was a new technology at the time it was placed here (1950-1953) and the greatest care was taken with its installation.

Unfortunately, since the closure of the power station much of the space has been spray-painted in a flat grey colour - but the fabric and texture is still there to be appreciated even if the colour has been masked.

3.2.2.9 1948 Switch House

These spaces, particularly on the middle level, retain some of the labyrinthian concrete boxes and cable trays found in the 1912-1927 Switch House. These latter ones have a rawness and a geometrical arrangement which has an unusually attractive proportion, almost like a three-dimensional Mondrian drawing.

Figure 3.2.2.8
Switch House
(Design 5 - Architects)

The huge multi-strand cables have been severed where they exit the building to take their electrical energy to the user. This is a clear reminder that the arteries of this place have been cut and it is now a dead industrial building, an image reminiscent of the film "The Matrix" part of which was filmed at White Bay Power Station.

3.2.2.10 Twentieth century industrial aesthetics

It is now widely accepted that modern concepts of architecture, prevalent from the 1920s to the 1960s, derived a large part of their inspiration from functional buildings of the early 20th century, such as grain silos, grain elevators, railway buildings, exhibitions buildings, bridges etc.

The 'age of the machine" was first celebrated in "Futurism" a poetic movement that expanded quickly to painting and sculpture and then to architecture. *"It celebrated the machine and the vitality of contemporary life, especially that of the city."* (Hasan-Uddin Khan "International Style. Modernist Architecture from 1925 to 1965 p.17)

A very fine example of this genre can be seen in the 1927 German film *Metropolis* by Fritz Lang. This extraordinarily prophetic silent film, set in the future, centred around a massive power station which was referred to as the heart of the metropolis.

Figure 3.2.2.9
Peter Behrens
AEG Turbine Factory, Berlin, 1908-1909

Architects such as Ludwig Mies Van der Rohe, Peter Behrens, Walter Gropius, and Le Corbusier, gained inspiration from industrial buildings and then designed their new buildings to be machine-like. They wrote passionately about these new ideas, believing they were building a better world.

In 1911, Walter Gropius gave a lecture for the Folkwang Museum in Hagen called *"Monumentale Kunst und Industriebau"*, in which he expostulated:

> *"Modern living needs new building organisms expressing the life forms of our times – stations, department stores, factories all demand a uniquely modern expression that cannot be satisfied in the styles of centuries past without falling into empty schematics or period fancy-dress. Instead of the application of superficial formulas, an inward shaping of these new architectural problems is required, non-routine thinking, an aesthetic re-consideration of the basic forms of former times, not added decoration. The proportioning of the building masses is the highest task (and foundation) of architecture; ornament is only a final touch…Exactly expresses free form, free of all accidental effects, clear contrasts, orderly articulation in the arrangement of every part, and unity of form and color, these are the ground rules of the rhythmics of modern architectural design."*
>
> *[From a lecture that Walter Gropius gave for the Folkwang Museum in Hagen in April 1911, called on "Monumentale Kunst und Industriebau". "A concrete Atlantis" Reyner Banham 1986, MIT Press p. 199]*

Figure 3.2.2.10
Walter Gropius and Adolf Meyer
Fagus Shoe-Last Factory
Alfeld an der Leine, Germany
1910

Peter Behrens was an architect working in Germany in the early 20th century whose work detached itself from the forms of the past and brilliantly espoused the tenets of the new functionalism. Behrens was architect and chief designer for AEG (the large German general electricity company). His 1908-1909 AEG Turbine Factory, Berlin, Germany, is one of the earliest modern industrial buildings. Its external form followed the internal structural layout.

Walter Gropius' "Fagus Shoe-Last Factory" in Alfeld an der Leine, Germany, in 1910, is another early example of an industrial building expressing its function clearly in its form, massing, modular simplicity and repetition of elements.

> *The new functionalism centred on both practical and aesthetic interpretations of form where all details, construction and plan served a purpose, and embellishments for the sake of ornamentation were disallowed. Hence, function and style were intimately linked in an attitude to design that itself combined modernism and the use of mass production and prefabrication.*
>
> [*Hasan-Uddin Khan "International Style. Modernist Architecture from 1925 to 1965 p.13]*

In Australia the ideas of the 'new functionalism' were manifesting themselves in a number of areas:

- Grand Shopping arcades such as QVB, 1898, and The Strand Arcade, 1891.
- Ultimo Power Station, Stage 1, 1899 - 1909
- Central Railway Terminus, 1908
- The Industrial buildings of Cockatoo island, 1911 - 1915
- The finger wharves of Walsh Bay.

Of all the above the White Bay Power Station would have been the boldest expression of functionalism in Sydney at the beginning of the 20th century. Cockatoo Island was hidden from view and unavailable to the public. Central Station, QVB and Strand Arcade, while bold in structure, hid behind polite sandstone and rendered facades. Even Ultimo Power

Station had a polite, classically detailed administration building facing William Henry Street moderating the scale of the Turbine and Boiler Halls behind. Australia's own original expressions of functional design appeared after WW1 when the great woolsheds, wheat silos, finger wharves and bridges appeared.

As White Bay Power Station steadily took shape between 1912 and 1917 beside the modest workers terraces of Balmain, it would have formed a composition of bulk and massing not seen before on the Sydney skyline. Not only were its forms large and functional, but its styling and imagery symbolised the new century, the machine age, the wonders of technology and the benefits of power and transport for the masses. The actual building of the Power Station was itself a visible exercise in efficient project management skills, as evidenced by the photographs of its construction.

Figure 3.2.2.11
Power Station c 1920
(courtesy of PowerHouse Museum archive)

As such, White Bay Power Station represented the essence of modernist architecture:

> *the optimistic belief that the new technologies of industrialization, spread by applying rational ideas to architecture and urbanism, would produce a qualitatively better world..*
>
> [*Hasan-Uddin Khan "International Style. Modernist Architecture from 1925 to 1965." P.7]*

The symbolic role of White Bay Power Station to Sydney-siders changed over the length of the 20th century. Originally a proud symbol of modernity, technology and the promise of a new century, it later became a polluting eye-sore representing the 'evils of industry' which ought not to be located next to residential areas. Since closure in 1983 the Power Station has again acquired a different symbolic value to the surrounding community. Many of the visitors to the site on the open day in July 2002 did not even know that the building had been a power station - they visited the site because they liked the form and scale of the buildings.

3.2.2.11 Summary

In summary, the internal massing of the Boiler House and the Turbine Hall and their fully integrated machinery elements are as impressive as they are rare. Spaces of this scale are rarely accessible and the majestic scale and raw industrial texture of this place is beyond the experience of most people. Most of the large scale industrial spaces from the early 20th century have been either demolished or subdivided. The play of light within these spaces has a singular quality only found in large architectural volumes, especially where they are not dominated or overshadowed by other nearby structures.

The place is also admired by artists, film-makers and photographers for the raw industrial qualities which are now rare. Survival so close to the city centre, and the prominence as an historic industrial relic, only heighten the sense of indefinable decayed beauty and the sheer magic of the place. It has enormous 'wow' factor – a phrase of singular colloquial expressiveness.

The entire site is imbued with the sights, surfaces and smells associated only with industrial sites. The silence and sense of majesty bears down on the visitor in a way that only occurs when visiting other massively scaled redundant structures. The ghosts of an industrial past

still haunt these spaces in a way that is either removed or sanitised in most places adapted for new uses – even those of museums.

The Turbine Hall and 1912-1927 Switch House are fine examples of the adaptation of the Arts and Crafts style to industrial architecture. They were erected in an era which demanded high quality aesthetic design for all public buildings, even utilitarian ones. The modernist design of the two phases of the Third Boiler house erected in the 1950s reflects the changing aesthetic of its age, and provides a dramatic and dynamic contrast to the earlier work.

In summary the White Bay Power Station has aesthetic qualities that are unique in the Sydney region. The raw industrial aesthetic coupled with the rich texture of the surfaces, machinery and structure, awe-inspiring spaces and elements (both externally and internally) make the White Bay Power Station an rare and exceptionally significant place in the urban fabric of Sydney.

3.2.3 White Bay Hotel

The former White Bay Hotel contains little heritage significance following its destruction by fire and subsequent demolition and clearing of the site.

It is unfortunate that only little is known of the internal configuration of this site and that only minimal recording of the building had taken place prior to the fire. After the fire and due to safety, only minimal survey of the site could be undertaken. Based on external surveys, the hotel did posses some aesthetic significance, and would no doubt have had interiors which related to the construction sequence of the power station:

- It was a good example of the Edwardian Free-style adapted to an early 20th Century Hotel.
- The front facade on Ground floor had some aesthetic merit with Art Deco decorative detailing.
- The Hotel had significant landmark value, being prominently sited on the top of a natural crest bisecting Victoria Road. It was a focal element on the journey towards the city, it signalled the last building in Rozelle and the change in direction to the towers of the city, framed by the Anzac bridge at the intersection, which immediately followed it.

3.3 Historical significance

3.3.1 White Bay Power Station

White Bay Power Station was originally built by the NSW Rail Commissioners to supply power to the rail and tramway system. The location was determined by the establishment of the Rozelle Rail Yards and the Glebe Island Wheat silos and shipping terminal. It was not long before it began to supply power also to the domestic, commercial and industrial sectors via the municipal electrical distribution

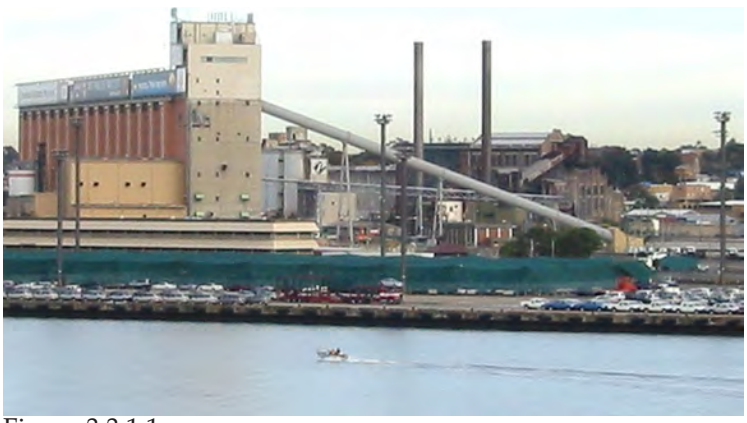


Figure 3.3.1.1
View from Pyrmont
(Design 5 - Architects)

system.

The acquisition of the power station by the Electricity Commission of New South Wales (ECNSW) in 1953 was a response to a major energy crisis which was crippling the state's post-war industrial and commercial growth. The station therefore represents an important or influential phase in the development of power generation. It is representative of the rapid growth in Sydney and the increasingly important contribution of electricity to the growth of industry and economy of NSW and hence the country. In addition, the power station's original links with the period of major expansion of the railway and tramways systems associates it with major events and urban expansion in the interwar years. Its history is representative of the changes required to cope with an increasingly insatiable demand for electrical power by transportation systems, businesses and domestic users. During its operation it made a major contribution to the State's rail networks and the daily lives of millions.

Development in the efficient reticulation and distribution of power allowed new power stations to be built closer to the coalfields. In the 1950s and 1960s public concern over pollution led to the closure of municipal power stations in the late 1970s and early 1980s.

In 1987, the legislation regarding the operation of the ECNSW and the composition of the board of management was amended. This resulted in an appraisal of the future of the various metropolitan power stations (all of which had ceased power production) and studies were subsequently commissioned to assess their significance and development opportunities.

In August 1988, Masterplan consultants were appointed by ECNSW to consider the future of Pyrmont, Balmain and White Bay Power Station sites, who in turn commissioned Don Godden and Associates & Heritage Consultants to prepare significance assessments and conservation policies for White Bay and Balmain. This resulted in the 1989 report The Significance of White Bay and Balmain Power Stations to Sydney's Industrial Heritage by Don Godden and Associates & Heritage Consultants (Appendix G). Rice Daubney, Architects, were commissioned at the same time to undertake an assessment of the heritage significance of Pyrmont Power Station. The Don Godden report notes as one of the "Constraints and Requirements" in their study:

The client requirements were not definitively enunciated in the brief. However it is understood that at least two of the sites are to be offered for sale and subsequent development.

The client requirements in no way effec (sic) the assessment of the buildings and sites however they have been taken into account in developing conservation policy (page 56).

It would appear that the decision to dispose of some these sites was already in place, however no documents have been found to date to verify this.

The report concluded that of the two power stations, White Bay was more intact with more of its significant machinery still in situ. This intactness demonstrating the complete process of power generation and supply and constituting the best collection of 20th Century power generation equipment in the state was the basis for the following conservation policies (page 56-57):

- White Bay Power Station is an item of cultural significance which should be conserved.
- Balmain Power Station is an item of cultural significance which should be considered for conservation
- Original building fabric should be preserved and maintained.
- The White Bay turbine hall, boiler house, switch house and coal handling unit should be

retained and conserved, including their SYSTEMS for coal handling ash handling, steam generation, power generation and distribution

- No new structure should be built which detracts from, or obscures views to the White Bay turbine hall.
- The scale/height/length of the interior spaces of White Bay turbine hall and boiler house should be retained.
- New structure or alterations should respect the style, detailing and finish existing structures.
- Buildings and artefacts which evidence major phases and innovations in electricity supply should be retained and conserved.
- Evidence of changes and development in building fabric should be preserved.
- Artefacts and relics which promote an understanding of the site's function should be retained and conserved.
- Evidence of each element in the coal handling, ash handling, steam generation and power generation systems of the White Bay turbine hall should be retained.
- Individually significant artefacts from all three power stations should be retained and conserved.

Following this study, the Balmain and Pyrmont Power Station sites were disposed of and White Bay Power Station retained for conservation. Pyrmont Power Station, c1904 and Balmain Power Station, c1909 were subsequently demolished and the land developed for other uses (Sydney Casino and medium density housing).

By this time, Ultimo Power Station, c1899, had already been substantially altered to accommodate the current Power House Museum (opened in 1988), and its machinery removed.

White Bay Power Station has special significance as the only intact and surviving original coal fired power station, dating from the early 20th Century, built within the Sydney metropolitan area. Of the three other power stations built in the late 19th and early 20th century, White Bay was the longest serving city power station from 1913 to 1983 (70 years - although it was not fully operational until 1917).

White Bay Power Station is one of the 20th century industrial landmarks around the working maritime foreshores of Sydney Harbour. It is one of the few surviving large-scale industrial structures in the maritime foreshore environment (which has substantially decreased in the late 20th century with relocation of industries and the gentrification of the foreshore). It is representative of a process of increasing foreshore industrial use that prevailed throughout the 19th and early 20th centuries in Sydney Harbour.

Much of the historical significance of the Power Station really lies within its technological significance. For this reason discussion of the significance of the changes in machinery equipment that took place during the operational years are made in the following section.

No associations with major figures or historical events outside that of power generation are known.

3.3.2 White Bay Hotel

The White Bay Hotel was closely associated with the development of the nearby White

Bay Power Station and other local industries. The Hotel had possessed an association with "groups of people" or workers associated with both the construction and ongoing operation of the highly significant Power Station. The Hotel had some historic association with the famous brewery firm of Tooth & Co Limited who leased the Hotel from its construction date until purchasing it outright in 1933 and ran the Hotel for most of 20th Century.

The White Bay Hotel was built in 1916, replacing an earlier hotel of the same name built in the 1860s on a similar prominent corner site on the main route to the city. This site was resumed for the construction of the power station. The hotel operated until 1992 when it closed due to declining patronage. The Hotel had a strongly working class tradition and formed an integral part of the local community. The Hotel provided a social drinking venue for a large number of workers employed in local industries such as the abattoirs, dockside industries, the Rozelle Railway Yards and the White Bay Power Station.

This association had some significance as it was one of the earlier Hotels utilised by Tooth and Co.

3.4 SCIENTIFIC (TECHNICAL/RESEARCH) SIGNIFICANCE

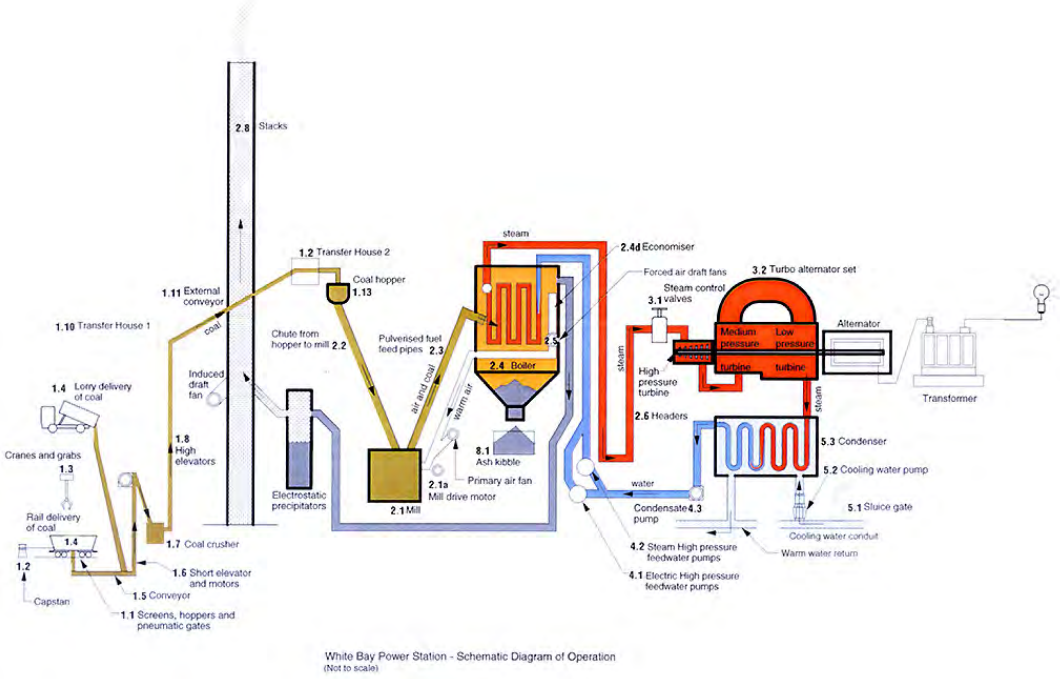


Figure 3.4.1.1
Diagram of the process of electricity generation from coal

3.4.1 White Bay Power Station

Power houses, more than any other specific industrial complex, are composed of a series of completely interdependent operating systems. Each of these systems is composed of a number of interdependent items, assemblages and collections of machinery, plant and equipment.

In all large power stations there is often more than one example of each operating system such that there may be, for example, four steam raising systems and four power generating systems. At White Bay, when it was determined that the majority of equipment was to be disposed of, a single representative example of each operating system was retained. Each of the retained systems was substantially intact. Hence, although many items, assemblages and systems have been removed from the Power Station, a set of substantially complete systems remains which allow, the generating process to be interpreted. The nature of this resource is such that it cannot be appreciated, understood or interpreted merely as individual component parts, but must be understood as a series of integrated operational systems within which are a subset of contributing elements. As the oldest extant power station in New South Wales, White Bay Power Station retains a complete operational complex of equipment and machinery, some of which dates from the early twentieth century phase of power generation. The extant equipment and machinery used in the generation of electrical power at White Bay Power Station represents an invaluable resource to enhance the understanding of the history and development of power generation in Sydney and New South Wales which is not available from other sources.

Figure 3.4.1.2
Pump House machinery
(Design 5 - Architects)

The complex of historic machinery extant at White Bay Power Station is a rare collection of exceptional significance because of its ability to demonstrate the history of twentieth

century power generation in New South Wales. The historic machinery is significant for its ability to demonstrate technological and engineering advances in power generation and the working conditions and practices which evolved in tandem both for the workers at White Bay Power Station and the expanding industrial workforce of New South Wales. The production of electric power at White Bay Power Station, and its increasing reticulation and availability, stimulated associated industrial and suburban growth in the Sydney region throughout the twentieth century.

The exceptional aesthetic value of the machinery and equipment is enhanced by the landmark value of the buildings within which they are housed. The extant items within the operating systems are of an impressive scale and exhibit a high degree of creative and technical achievement in their design and configuration. These operating systems, comprising interdependent items, assemblages, documentation and collections of machinery and plant equipment, are of exceptional technical significance with research potential to yield information not available from any other source.

The extant interdependent operating systems which comprise the machinery and equipment which generated power at White Bay Power Station represent a unique and comprehensive resource of equipment and machinery which is no longer to be found at rural or suburban power stations. The extant equipment and machinery encompasses all aspects of the generation of electrical power as well as representing all phases from the inter-war period through to the increasingly sophisticated and less labour intensive methods and technologies of the later twentieth century. The collection of machinery and equipment at White Bay Power Station has exceptional historic, technical and aesthetic value representative of the technological advances and influences of English technology and engineering design. This suite of machinery in its original working location with the suite of intact power station buildings and structures is now a rare survivor at a state level. But it is also more at a national, and even international level with machinery now removed from most similar sized redundant power stations.

White Bay Power Station is the last of the early Sydney power stations to retain extant vital items associated with the developmental history of electricity generation during the early decades of the twentieth century and into the post-war era when the power industry became increasingly automated leading to the demise of equipment more closely associated with a labour intensive phase in the history of electrical generation.

These elements *in situ*, which are now a substantially intact representative sample of the operating system, contribute to the overall rarity of the machinery and equipment extant at White Bay Power Station now. They are complete systems which would be diminished if any parts were removed. They are:

The coal handling system is an integral part of the White Bay Power Station, and has an historical association with the beginnings of the electrification of the Sydney rail and tramways systems. The system is indicative of engineering design principles. It is a rare demonstration of the changing patterns of materials handling that can yield information on the development of the less labour intensive practices of the post-war period. The coal handling system evidences the need for locating medium voltage power stations in metropolitan areas close to the consumers.

The steam raising system is an integrated system composed of a number of elements which evidences early-mid twentieth century advances in engineering development of electrical energy and the electrification of Sydney tram and rail systems. When introduced, it was the latest technology in steam power generation.

The feedwater system is an integral part of the power station complex. It demonstrates the technology by which feedwater is constantly re-cycled via a change in state. It has the ability to enhance our understanding of the technology of power generation that is not

available from other sources.

The cooling water system is an integral part of the power station operating complex. The system evidences the way in which steam was converted to water in order to recycle it through the massive cast iron condensers. The cooling water system has the potential to yield information on the technology of power generation that is no longer available from other sources.

The power reticulation system retains elements which are over forty years old and which are evocative of the technological developments in the management of the reticulation of electrical power. Elements associated with the power reticulation system demonstrate the transition from the early phase of power reticulation to the increasingly sophisticated developments in the electrical distribution system from the post-war period to the later twentieth century

The electricity supply and auxiliary systems demonstrates the historical development of increasingly complex methods of electrical energy production and reticulation. The power station retains elements contemporary with the earliest phase in electrical power generation which are now rare in a process increasingly dependent on automatic systems. The system retains diverse elements that are now extremely rare and have a high technical value, particularly as they are in situ at the power station.

The ash handling system is demonstrative of early attempts efficiently to dispose of industrial waste and to reduce pollution. The system has been depleted by the removal of the precipitators which were integral and vital component parts, that demonstrated changing attitudes to, and methods in the management of industrial pollution. The retained elements are demonstrative of an operational system developed specifically for White Bay.

The chimney stacks associated with the modern boilers are significant not only as a visible reminder of the modernisation of the Power Station but also as an integral part of the system for exhausting waste gasses.

3.4.2 White Bay Hotel

The White Bay Hotel was of standard construction, style and technology typical of the era in which it was built. There are many other surviving examples of this type of building.

3.5 Social/spiritual significance

Two main communities have demonstrated associations with White Bay Power Station:

- Former workers, including contractors
- Residents of the areas adjoining the power station.

Through questionnaires, information has been gathered from 'representatives' of each associated community. The small sample of former workers limits the conclusions that can be drawn. Further work is recommended.

Analysis of the social significance of White Bay Power Station involved consideration of the following value which are embodied in the NSW State Heritage Register Criteria:

Community esteem: Items that are esteemed by the community for their cultural values. This would include places representing any cultural value held in high esteem by the community.

Sense of loss: Items which if damaged or destroyed would cause the community a sense of loss, and/or

Community identity: Items which contribute to a community's sense of identity. This would include:

- Important to a community as landmark, marker or signature
- Important as a reference point in a community's identity

Strong or special attachment developed from long use and/or association.

3.5.1 Community esteem

White Bay Power Station is of *high social significance* for the associated communities because of the esteem in which it is held for its cultural values:

- It is recognised as an important surviving example of the power stations that once were prominent in the inner Sydney landscape.
- It is regarded as an important surviving element of the industrial history of Sydney Harbour, and of this locality.
- It is valued for its powerful physical presence and industrial aesthetic.

These values are widely held across all of the 'associated communities' that were surveyed as part of this project.

For the former power station employees, White Bay Power Station is of *exceptional social significance* for its ability to demonstrate the development of power industry technology of a particular era, providing outstanding evidence through the retention of machinery and associated systems, artefacts and work spaces.

Figure 3.5.1.1
Visitors for the Open Day - June 2002
(Design 5 Architects)

Recent open days held in February and May 2011 highlighted strong community interest in the place, with an excess of 1000 visitors taking part in both events. The majority of visitors expressed enthusiasm towards retention of the building and re-use possibilities. A number of people were keen to see the power station adapted for a future use that would ensure its longevity, whilst maintaining public access to the site.

3.5.2 Sense of loss

White Bay Power Station is of *high social significance* for the local community as a rare survivor. The loss of other industrial structures in this locality has increased the significance of White Bay Power Station. For this community, White Bay Power Station symbolically represents these lost places and lost connections to the locality's industrial past. The possibility that White Bay Power Station may too be lost appears to be a strong concern throughout the questionnaire responses, with people expressing a strong desire for the buildings and machinery to remain and be interpreted.

Figure 3.5.2.1
Former workers at the Workshop October 2002
(Design 5 Architects)

For the former power station employees, White Bay Power Station is of *high social significance* as a place that represents past working lives, practices and technologies that 'redundant' and are therefore in danger of being lost.

3.5.3 Community identity

3.5.3.1 Importance as a landmark, marker or signature

White Bay Power Station is of *exceptional social significance* for both local residents and former employees as an important landmark, one of few surviving industrial structures that were once the signature of this locality. As a landmark it is a highly visible and widely recognised.

White Bay Power Station is of *exceptional social significance* for local residents as the most prominent entry marker to the Balmain peninsula; it signifies the transition from the inner city to the suburbs.

3.5.3.2 Importance as a reference point in a community's identity

White Bay Power Station is of *high social significance* for the local community as a potent symbol of the area's industrial origins and working traditions which have influenced domestic and community life, and is associated with a 'working class' character.

White Bay Power Station is of *high social significance* for the local community because it represents an historical connection with the past, and is highly valued by newer and older residents alike.

White Bay Power Station is of *exceptional social significance* for former power station employees for its ability to demonstrate technological systems and processes that were a feature of their working lives in this era of power stations and that create for them an important and highly valued connection between the past and the present.

White Bay Power Station is of *high social significance* for former power station employees because of the ability of the site to evoke their experience of working at the power station.

The power station retains a prominent place in their lives and working history, despite the time that has elapsed since they worked at the site. It evokes memories of their working lives, of people and events that still resonate for them today.

Figure 3.5.3.1
White Bay Power Station as both a Landmark and a prominent entry marker
(Design 5 - Architects)

3.5.3.3 Strong or special attachment developed from long use and/or association.

White Bay Power Station is of high social significance to the local community and former power station employees as a place associated with an important public function that has over time, gained important associations and meanings for these two communities.

3.5.4 Significant areas and elements

3.5.4.1 The setting

The harbour-side location, relationship between the buildings and the water, and the views out from and to the power station are highly valued by local residents. The setting and historical connections between the power station, waterfront, docks and railway are valued as evidence of the industrial history of the locality.

The mulberry trees, with only one surviving, are an important part of the site for some people. They were highly valued by those who worked on site recently (eg. film crews) and by local residents (but not by the former power station workers). Residents recall more extensive gardens, creating a small green oasis around the power station and within this highly built up area.

3.5.4.2 The complex of buildings

The complex of buildings is highly valued as a landmark, because of its size and visual dominance, and as an entry marker to the locality by local residents. Its historical associations to this locality add to its significance for local residents. The 'industrial aesthetic' of the exterior of the complex of building is much admired by locals, especially the Federation façade, some of the qualities of the building fabric (windows, architectural detailing), the chimney stacks and the coal conveyor.

Former power station workers also value the complex of buildings, but more for the technology they contain and their historical role in the power industry. It also has a landmark value for them.

3.5.4.3 *Interiors generally*

For most local residents, the 2002 Open Day provided a first look at some of the interiors of the power station. While not part of its social significance, its is worth noting that the interior spaces and volumes and retained machinery made a strong impression on visitors.

3.5.4.4 *Boiler House*

The section of the Boiler House containing the surviving boiler (and associated equipment) is of exceptional significance to former employees as a key aspect of the technological significance of the site (see below). Loss of the outer casing of the boiler has not diminished its significance, and has added to its interpretive potential.

3.5.4.5 *Turbine Hall*

The Turbine Hall with the surviving turbine is of exceptional significance to the former power station workers; for them it is the heart of the system and a key component of the technology. It is also highly significant as a monument to the working people of that time in the power station, and in recognition of their abilities and skills in successfully managing these difficult technologies. The Turbine Hall is also important as the public face of power production, seen by visitors through the observation window in the administration area.

3.5.4.6 *Switch House & Switch House Alley*

The Switch House is of exceptional significance to the former power station employees. It formed a key part of the overall power generation and distribution system. Important areas include the control room, the workshops (most internal fittings have gone), the pyrotenax cabling, the switch gear rooms.

3.5.4.7 *Administration & Staff Areas*

For former workers, the Administration and Staff Areas are of high significance for those with associations with this part of the site. These areas contained the canteen which served as a meeting place for many (but not all) workers; the main entry which was one of several entries used by some workers everyday; the lift; and the Entertainment Hall which served as an important social focus for many years (but apparently not in the later periods as the power station was winding down). The Entertainment Hall retains a series of murals created by a worker in his own time, demonstrating a sense of community and camaraderie that is part of a past era in workplaces.

Figure 3.5.4.1
Entertainment Hall
(courtesy Pacific Power archive)

3.5.4.8 *Control Room and Switch House*

For former workers, the Control Room and its contents are of exceptional significance. It's intactness is remarkable and it contains evidence of the processes and work practices, as well as evidence of the changes in technology over time. The cable room below is regarded as providing remarkable evidence of a high level of workmanship that is now rare, as well as representing the technology of a recently past era.

3.5.4.9 Significant processes and technologies

For the former employees, the site is of exceptional significance for its ability to demonstrate power station technology. While the technologies at White Bay were once represented at a number of power stations, they are now rare. These technologies are of exceptional significance because they were central to the operation of the power station and represent certain historical phases in the power industry.

Specifically, these technologies are demonstrated on the site by:

- The survival of and relationship between each of the following key areas associated with power production and supply: railway, coal handling and pulverizing, boilers, turbines, switching and control functions
- The survival of machinery, systems (eg. conveyors, walkways etc) and other equipment and contents associated with each area.

3.5.4.10 Work places

For each of the former workers, their own workplaces are of high significance. This means that areas unfamiliar to a particular worker may be regarded as insignificant, whereas for another worker the same place may be highly significant.

Specific aspects of each work area enable former workers to:

- demonstrate their work procedures and skills (eg. "flying the place by the seat of your pants")
- recall memories of particular events (eg. the discovery and repair of a fault).

These aspects may include specific machines, gauges, switches, walkways, benches etc. Given the complexity of the site and the size of the sample of former workers, it is not possible to fully define the extent of significance in each work place. (See Conservation Policies)

3.5.4.11 Areas of moderate or little social significance

Based on the evidence collected during the present study, the following areas of the site are considered to have moderate or little no social significance. Further consultation is warranted in relation to the coal areas and railway prior to major changes being undertaken.

Coal areas	Coal yard and coal wash pit
Railway	Railway corridor and cutting
Exterior Yards	West, South West, North West, North, Upper South
South & North Transformer	

3.5.5 White Bay Hotel

The Hotel had strong associations with the workers of the White Bay Power Station and other nearby dockside Industries. The Hotel was a strongly working class Hotel and so had a particular relationship with the workers, who lived in nearby suburbs.

These connections had lessened over recent years as the social demographics of the area changed. While further social research may help to understand the detail of these connections, the pub was in its later years mostly unloved and anecdotal evidence suggests that it was not highly valued by the local community as a hotel.

While the White Bay Hotel retained some social significance for its connection to the social history of the local area, these connections were reduced as a result of the Hotel being vacant for an extended period of time before being destroyed.

The significance as a local landmark and as a marker of a significant point in the journey to the city appears to have been important to the community, both locally and further afield.

3.6 State heritage register criteria

3.6.1 Discussion of assessment against SHR Criteria

The above discussion and values of the place are now tested against the criteria for listing on the State Heritage Register, to determine whether they meet the threshold for listing.

Criterion (a) -important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)

White Bay Power Station is important as part of the States development of electrical power for industry and the growth of local and capital development across the State in the first 70 years of the 20th century. It is the only power station in NSW to retain in situ a full set of both structures and machinery from this period.

Criterion (b) - 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)

White Bay Power Station has a rare ability to demonstrate once common and standard work practices of the early to middle 20th century which are now almost entirely discontinued through changes in technology and occupational health and safety. It is a rare surviving element in an area of Sydney which was once almost entirely dependent on such industries for its livelihood.

Criterion (c) - important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)

White Bay Power Station retains a broad range of spaces and elements including machinery, which are exceptional for their raw industrial aesthetic qualities. As an assemblage of structures the White Bay Power Station retains exceptional aesthetic value as an icon of early to mid 20th century industry, an important component of a rare group of harbour side industrial structures, and a prominent marker in the cityscape signifying the entry point from the west. In particular the two chimney stacks are visible from many parts of the inner west and are a constant point of reference.

Its design and construction while typical for its time is now a rare surviving example of such industrial buildings and machinery complexes. It also demonstrates technological achievements of its time in the erection of the 1927 reinforced concrete structures and the 1958 boiler house, with its large areas of steel framed and glazed curtain walling.

Criterion (d) - strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons

White Bay Power Station has strong and special associations and meanings for the local community, for former power station workers and for others who have used the site, and is of high social significance. It is a potent symbol of the area's industrial origins and working traditions, aspects of community identity that are strongly valued today by both older and new residents. It is one of few surviving features that provide this symbolic connection.

For former employees at White Bay Power Station, this place provides a link to their past working lives and evokes memories of people and events that remain important to them today. It represents the post-war period of power station operation, and through the retention of technologies, systems and machinery it has the ability to evoke this period and demonstrate the production methods and working conditions of the time.

White Bay Power Station is a widely recognised landmark, the most important surviving industrial signature building locally and the marker of the entry to the Balmain peninsula and its industrial harbour. It retains a powerful physical presence and industrial aesthetic.

Criterion (e) - potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)

As a now rare and intact surviving early 20th century industrial complex in the inner Sydney Harbour region and particularly in Balmain, White Bay Power Station contributes considerably to our understanding and appreciation of these areas and foreshores as formerly places of heavy industry and intense port activity.

As an early power station for the early 20th century tram and rail network, it was a vital component in the expansion and daily life of suburban Sydney.

White Bay Power Station contains a complete and in situ assemblage of machinery, spaces and elements comprising all the systems and processes for generation of coal-fired electricity from the early to mid 20th century. This is the only surviving assemblage in NSW and it has the potential to yield information not found anywhere else in the State.

Criterion (f) -possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)

As the only intact Power Station of its type left in NSW, with one complete power generating system retained in situ for conservation, its rarity is firmly established.

Criterion (g) -important in demonstrating the principal characteristics of a class of NSW's

- **cultural or natural places; or**
- **cultural or natural environments.**
  (or a class of the local area's cultural or natural places; or cultural or natural environments.)

Retaining as it does a complete system of steam turbine generation of electricity from burning of fossil fuel, the White Bay Power Station is highly representative of this generation of Power Station. Other modern power stations use similar technology, albeit more modern and efficient. White Bay represents that type of early electricity generating technology which required the building of power stations close to the customer. As a complex of structures, buildings and machinery, it demonstrates the full configuration and processes of an early to mid 20th century city power station.

3.7 Assessment for Listing on the NSW State Heritage Register

The discussion of the significance of the White Bay Power Station against the Criteria set by the Heritage Council of New South Wales to determine significance are summarise below. This table provides a summary of the justification of the Listing of the Power Station on the NSW State Heritage Register.

NSW Heritage Significance Criteria - Gradings of Significance for						
Grading		Exceptional	High	Moderate	Little	Intrusive
	Justification	Rare or outstanding item of local or State significance. High degree of intactness. Item can be interpreted relatively easily.	High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance.	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	Alterations detract from the significance. Difficult to interpret.	Damaging to the item's heritage significance.
	Status	Fulfils criteria for local or State listing.	Fulfils criteria for local or State listing.	Fulfils criteria for local or State listing.	Does not fulfil for local or State listing.	Does not fulfil criteria for local or State listing.
(a)	the Item is important in the course, or pattern, of NSW's cultural or natural history	√				
(b)	the 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	√				
(c)	the Item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievements in NSW	√				
(d)	the Item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons	√				
(e)	the Item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history	√				
(f)	the Item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history	√				
(g)	the Item is important in demonstrating the principal characteristics of a class of NSW's - cultural or natural places; or - cultural or natural environments	√				

3.7.1 State and National Themes

The White Bay Power Station is overwhelmingly a story of industrialisation, construction, power reticulation, work practices, social change and their environmental issues in urban areas as well as many other stories. While most stories may fit into the thematic framework, many important ones may not, and therefore it is a risk they may be left out of any interpretation of the site.

Australian Theme	3. Developing local, regional and national economies
NSW Theme	Science
Description	White Bay Power Station is the last of the early Sydney power stations to retain extant vital items associated with the developmental history of electricity generation during the early decades of the twentieth century and into the post-war era when the power industry became increasingly automated leading to the demise of equipment more closely associated with a labour intensive phase in the history of electrical generation.

Australian Theme	3. Developing local, regional and national economies
NSW Theme	Industry
Description	White Bay Power Station retains a broad range of spaces and elements including machinery, which are exceptional for their raw industrial aesthetic qualities. As an assemblage of structures, the White Bay Power Station retains exceptional aesthetic value as an icon of early to mid 20th century industry, an important component of a rare group of harbour side industrial structures, and a prominent marker in the cityscape signifying the entry point from the west.

Australian Theme	3. Developing local, regional and national economies
NSW Theme	Technology
Description	Retaining as it does a complete system of steam turbine generation of electricity from burning of fossil fuel, the White Bay Power Station is highly representative of this generation of Power Station. Other modern power stations use similar technology, albeit more modern and efficient. White Bay represents that type of early electricity generating technology which required the building of power stations close to the customer.

Australian Theme	3. Developing local, regional and national economies
NSW Theme	Transport
Description	As an early power station for the early 20th century tram and rail netxwork, it was a vital component in the expansion and daily life of suburban Sydney.

Australian Theme	4. Building settlements, towns and cities
NSW Theme	Towns, suburbs and villages
Description	White Bay Power Station has strong and special associations and meanings for the local community, for former power station workers and for others who have used the site, and is of high social significance. It is a potent symbol of the area's industrial origins and working traditions, aspects of community identity that are strongly valued today by both older and new residents. It is one of few surviving features that provide this symbolic connection.

Australian Theme	4. Building settlements, towns and cities
NSW Theme	Utilities
Description	White Bay Power Station is important as part of the States development of electrical power for industry and the growth of local and capital development across the State in the first 70 years of the 20th century. It is the only power station in NSW to retain in situ a full set of both structures and machinery from this period.

Australian Theme	5. Working
NSW Theme	Labour
Description	For former employees at White Bay Power Station, this place provides a link to their past working lives and evokes memories of people and events that remain important to them today. It represents the post-war period of power station operation, and through the retention of technologies, systems and machinery it has the ability to evoke this period and demonstrate the production methods and working conditions of the time.

Australian Theme	7. Governing
NSW Theme	Government and Administration
Description	White Bay Power Station was originally built by the NSW Rail Commissioners to supply power to the rail and tramway system. The location was determined by the establishment of the Rozelle Rail Yards and the Glebe Island Wheat silos and shipping terminal. It was not long before it began to supply power also to the domestic, commercial and industrial sectors via the municipal electrical distribution system.

3.8 GRADING OF SIGNIFICANCE

The former White Bay Power Station includes external and internal spaces, structures and elements of varying cultural significance within this overall significance. These gradings are shown on the diagrams following the summary table. For detailed information on these grading refer to Volume V for machinery elements and Volume III for structural, spacial and other elements.

A Table setting out the Grading of Significance for each space and element, according to historic, technical, aesthetic and social values is included in Volume III.

The Grading is as follows:

1 Exceptional
2 High
3 Moderate
4 Little/Neutral
5 None

Grade 1: *Spaces/structures/elements of Exceptional significance*

These spaces, structures or elements are of exceptional cultural significance for at least three of the four categories of historical, technical, aesthetic or social values **or** they contain significant machinery/plant. They play a crucial role in supporting the significance of the place.

Examples of Grade 1:

Coal Handling Tower

Boiler No. 1

Turbine Hall – space and machinery

Control Room – total environment

All images (Design 5 - Architects)

Grade 2: *Spaces/structures/elements of High significance*

These spaces, structures or elements are of high cultural significance but slightly less than those in grade 1. They retain exceptional level rankings (1) for no more than two of the four categories of historical, technical, aesthetic or social values **or** have high level rankings (2) for at least two of these categories. They may also retain significant machinery elements. They play an important role in strengthening and supporting the significance of the place, but less than that for grade 1.

Examples of Grade 2:

1948 Switch House top level

Boiler House – spaces formerly occupied by Boilers 2, 3 and 4

Boiler House floor - spaces formerly occupied by Boilers 2, 3 and 4

Turbine Hall – platform areas where turbine generators have been removed

All images (Design 5 - Architects)

Grade 3: *Spaces/structures/elements of Moderate significance*

These spaces, structures or elements retain a moderate level of cultural significance. They retain moderate level rankings (3) for at least three of the four categories of historical, technical, aesthetic or social values. They play a moderate role in supporting the significance of the place.

Examples of Grade 3:

South-west Transformer Yard

Coal Wash tank

1948 Switch House ground level south end

White Bay Hotel site, 2010 (plinth and archaeology)

All images (Design 5 - Architects)

Grade 4: *Spaces/structures/elements of Minor significance*

These spaces, structures or elements are of minor cultural significance. They retain minor level rankings (4) for at least three of the four categories of historical, technical, aesthetic or social values. They play a minor role in supporting the significance of the place.

Examples of Grade 4:

Pump House south end

Former locker room level 2, Admin Building

1948 Switch House corridor top level

Grade 5: *Spaces/structures/elements of No significance/Intrusive*

These spaces, structures or elements retain level 5 rankings for at least three of the four categories of historical, technical, aesthetic or social values and may in fact be intrusive or damaging to the cultural significance of the place. They are of no significant value and may obscure rather than support the significance of the place.

Examples of Grade 5:

Added raised concrete plinth in 1958 Boiler House

All images (Design 5 - Architects)

3.8.1 General Grading of Significance

Item	Grading of Significance
Major elements:	1
Site overall	1
Coal Handling Shed	1
External Conveyor	1
Boiler House	1
Pump House	1
Turbine Hall	1
Admin and Staff Accommodation	2
1912-1927 Switch House	1
1948 Switch House and Control Room	1
White Bay Hotel Site (plinth and archaeology)	3
Machinery:	1
Coal Handling System	1
Ash Handling System	1
Chimney Stacks	1
Feedwater System	1
Steam Raising System	1
Power Generating System	1
Cooling Water System	1
Power Reticulation System	1
Electricity Supply System	1

3.8.2 Specific Gradings of Significance

Plans of the site, the structures thereon and spaces within those structures are shown in the following pages. Each space is numbered and given a Grade of Significance.

Policies covering these areas are given in Section 5

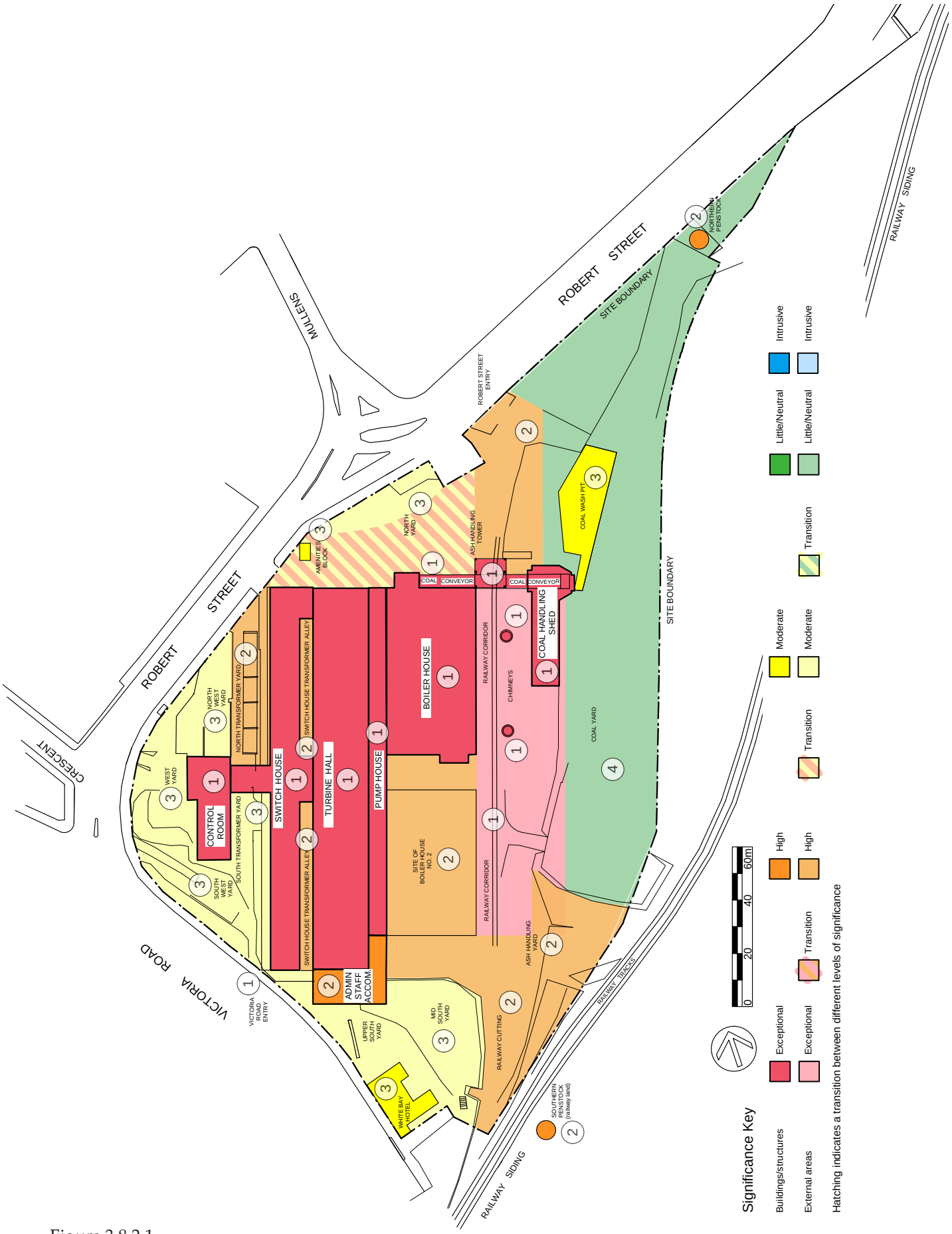


Figure 3.8.2.1
Site Plan Significance Gradings

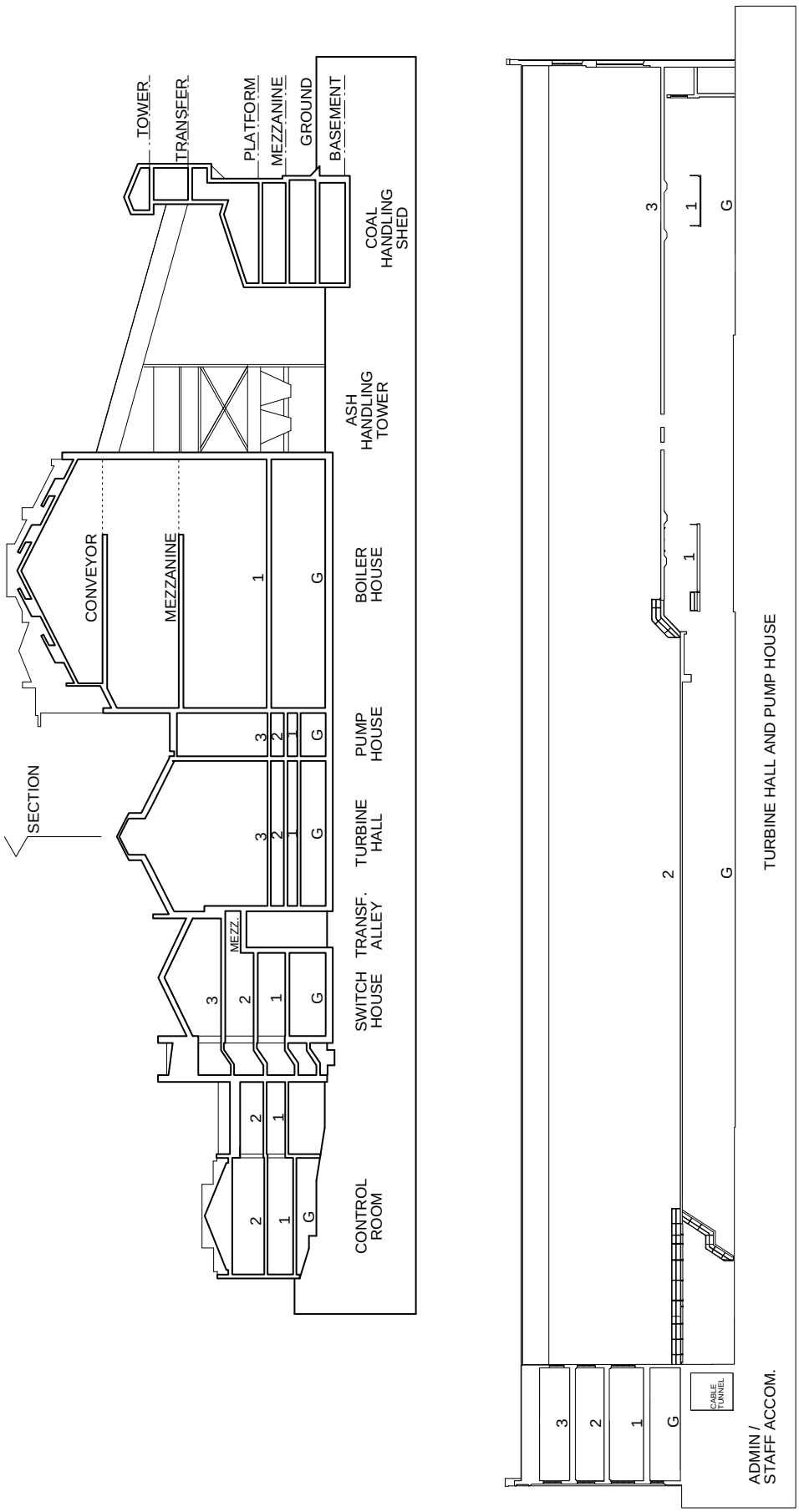


Figure 3.8.2.2
Key Sectional Diagrams

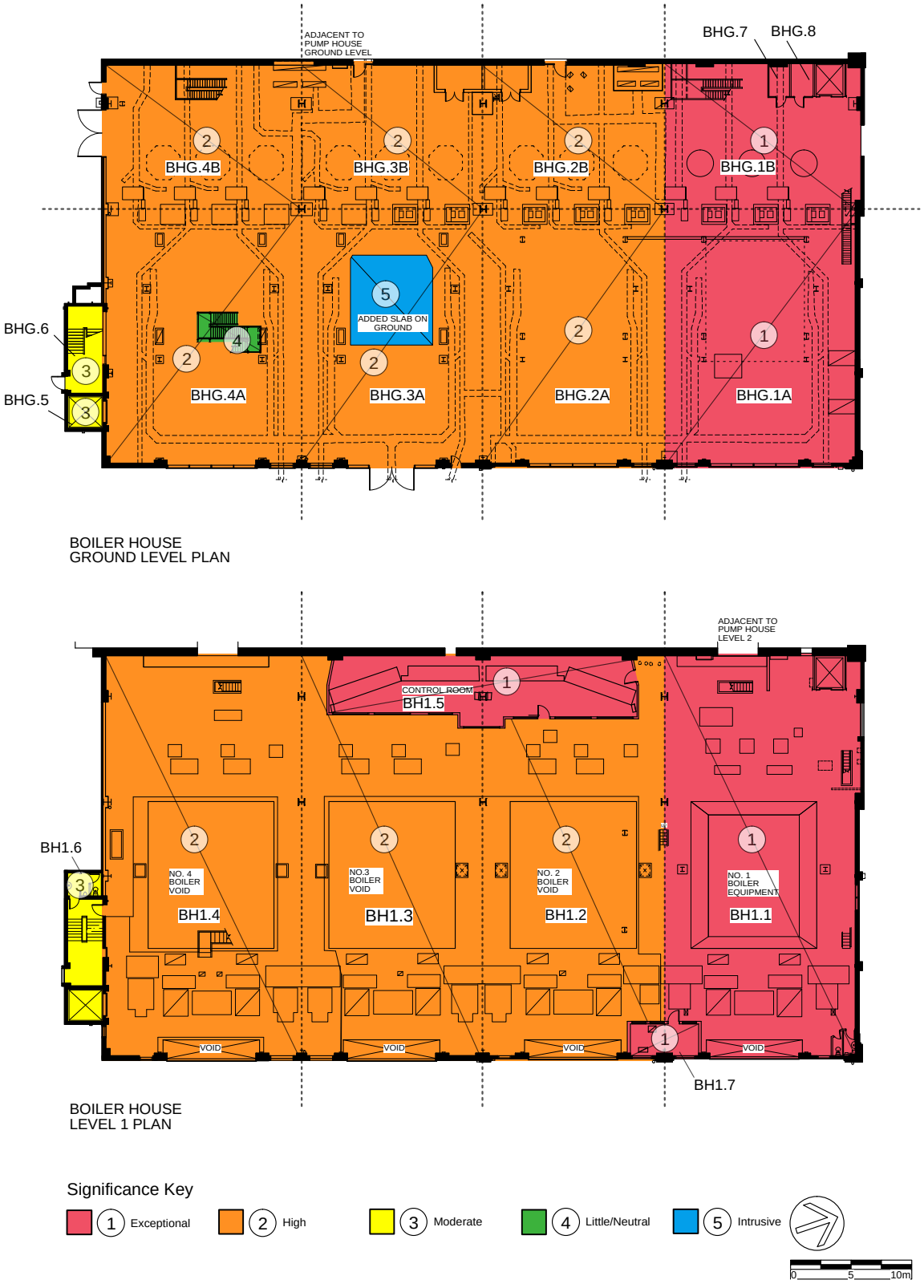
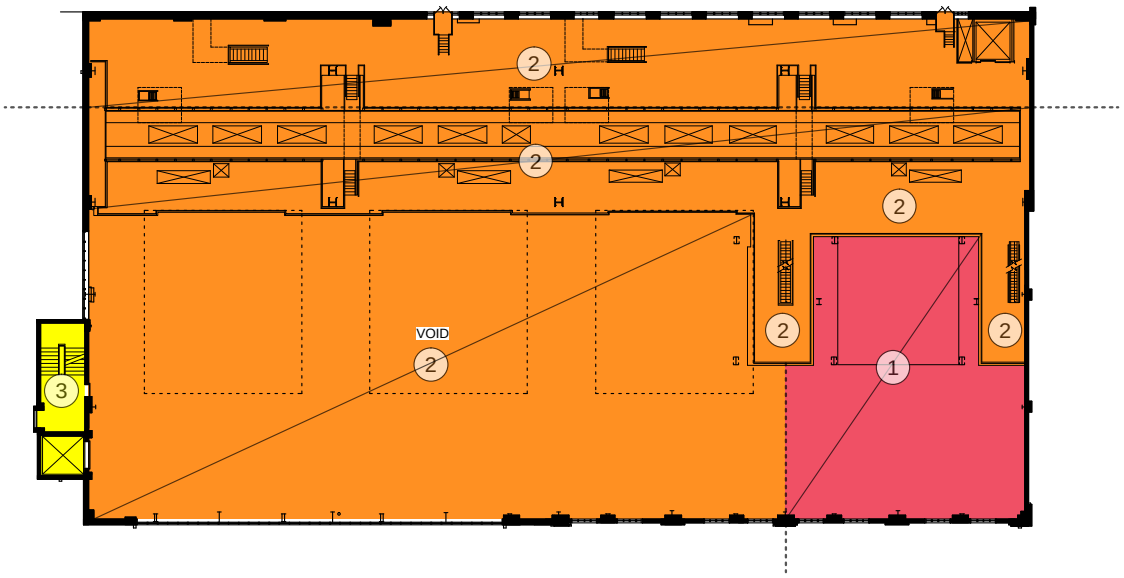
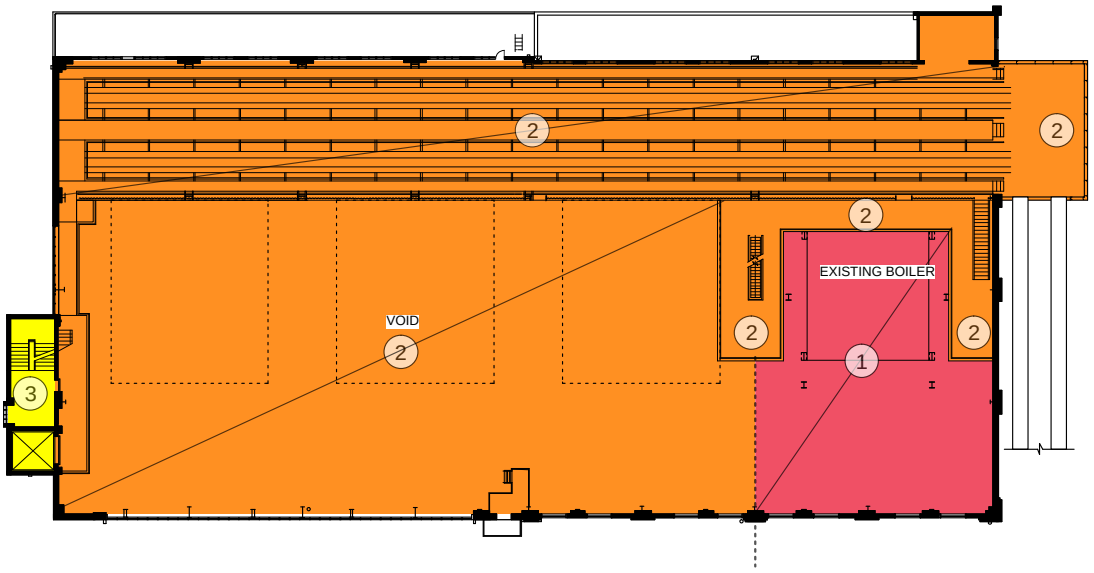


Figure 3.8.2.3
Boiler House Lower Levels Significance Gradings



BOILER HOUSE
MEZZANINE LEVEL PLAN



BOILER HOUSE
CONVEYOR LEVEL PLAN

Figure 3.8.2.4
Boiler House Upper Levels Significance Gradings

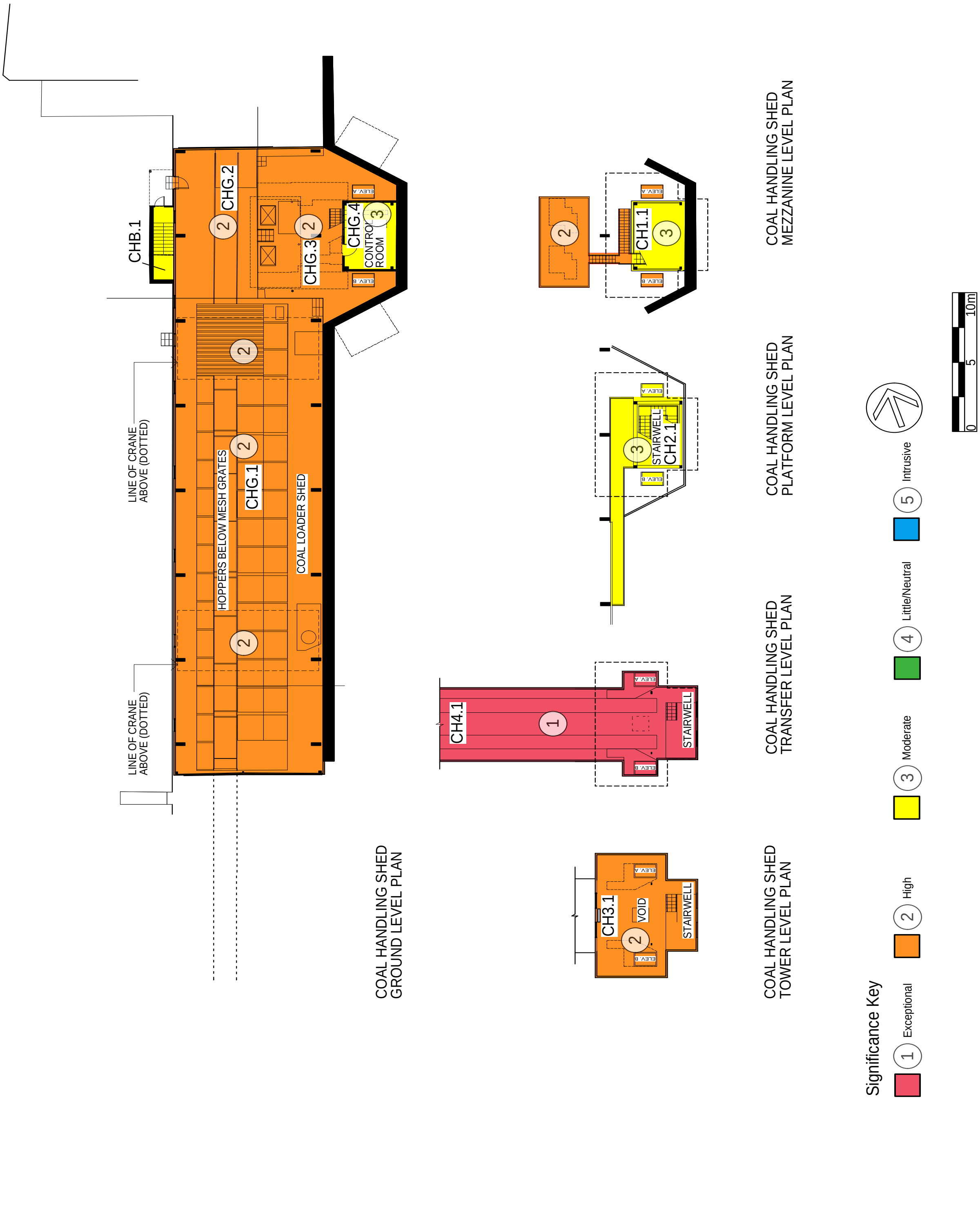


Figure 3.8.2.5
Coal Handling Shed Significance Gradings

Figure 3.8.2.6
Turbine Hall and Pump House Ground and Level 1 Significance Gradings

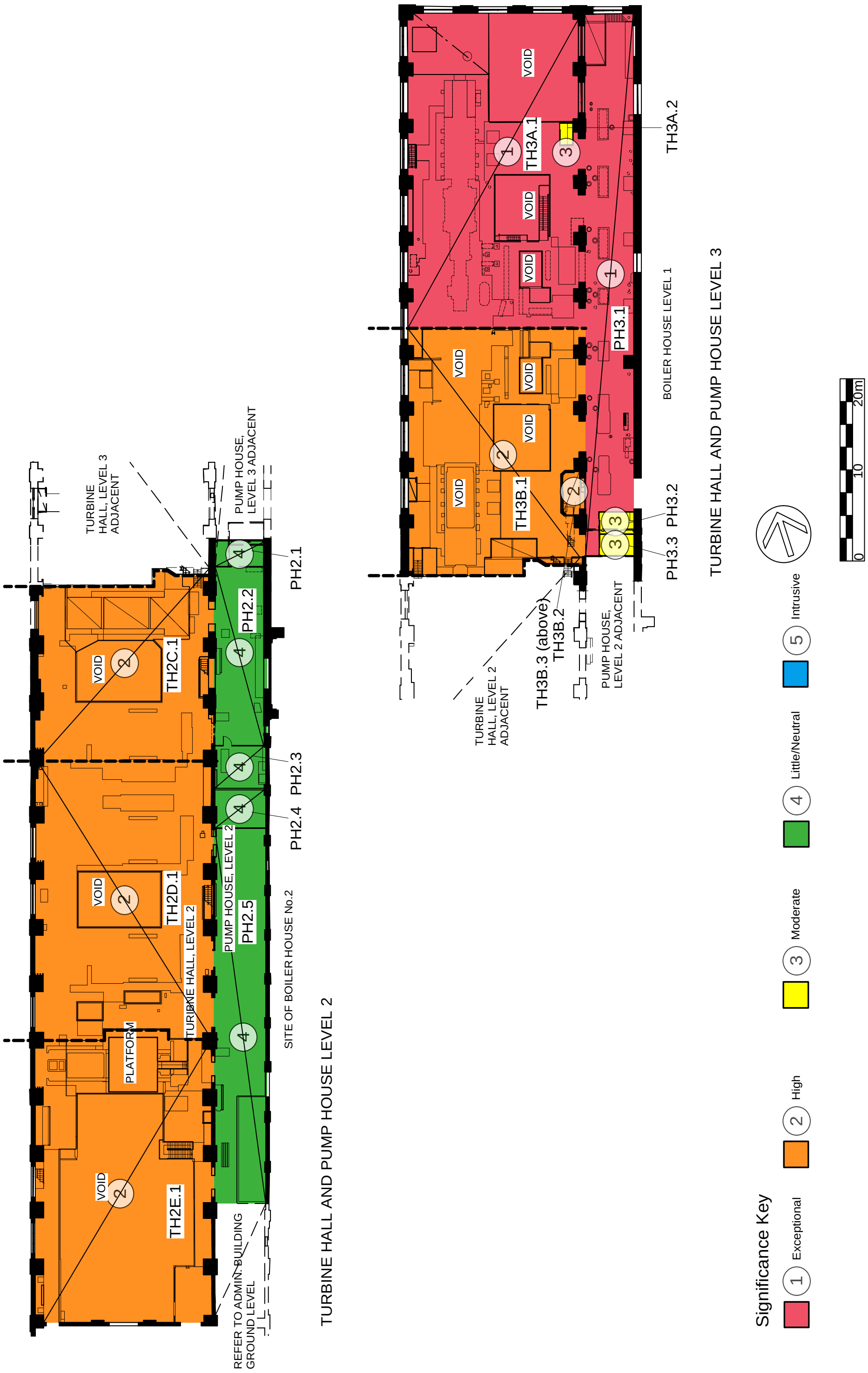


Figure 3.8.2.7
Turbine Hall and Pump House Level 2 and 3 Significance Gradings

Figure 3.8.2.8
Administration and Staff Accommodation Ground and Level 1 Significance Gradings

Figure 3.8.2.9
Administration and Staff Accommodation Levels 2 and 3 Significance Gradings

Figure 3.8.2.10
Switch House Ground and Level 1 Significance Gradings

Figure 3.8.2.11
Switch House Levels 2 and 3 Significance Gradings

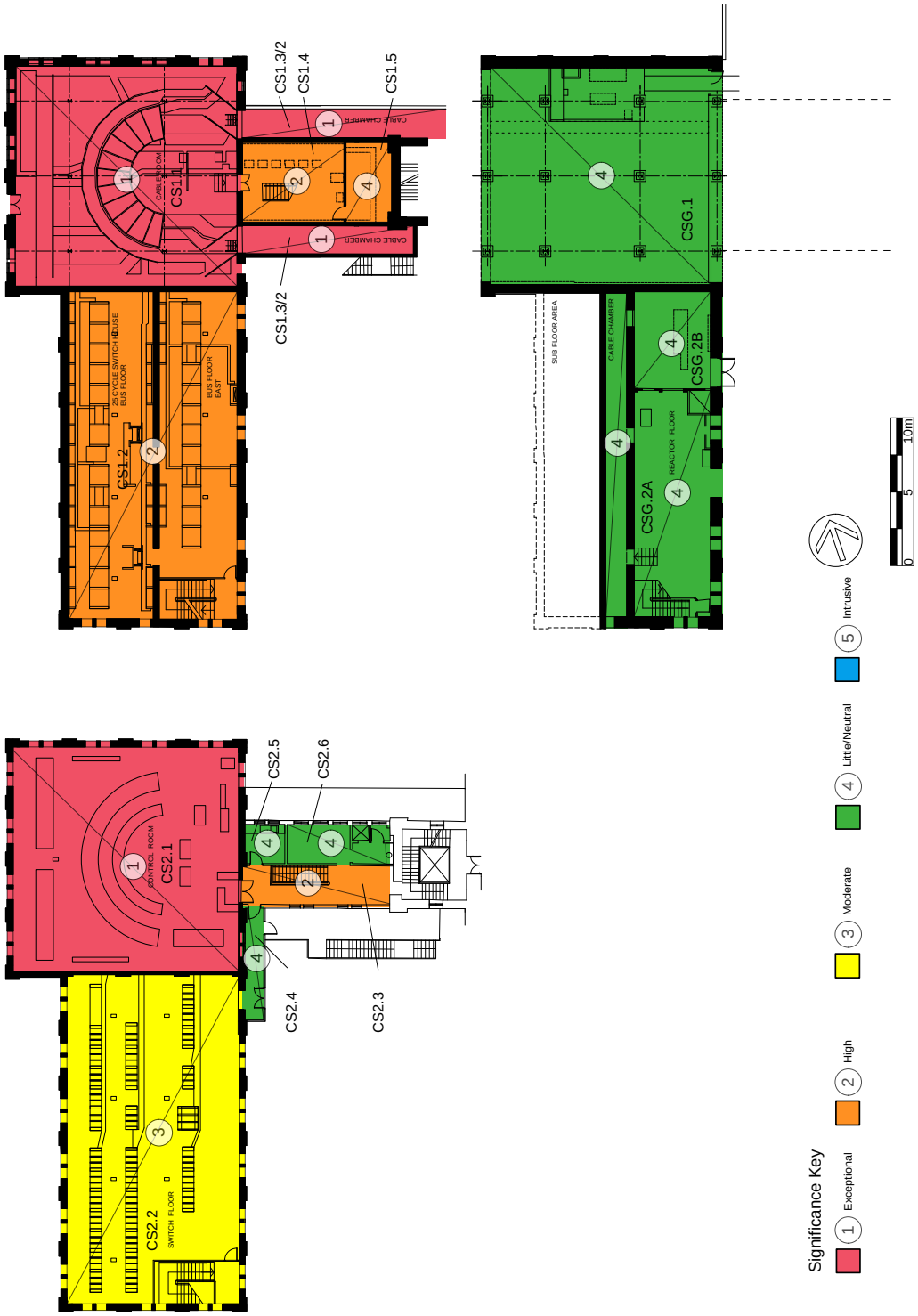


Figure 3.8.2.12
Control Room Significance Gradings

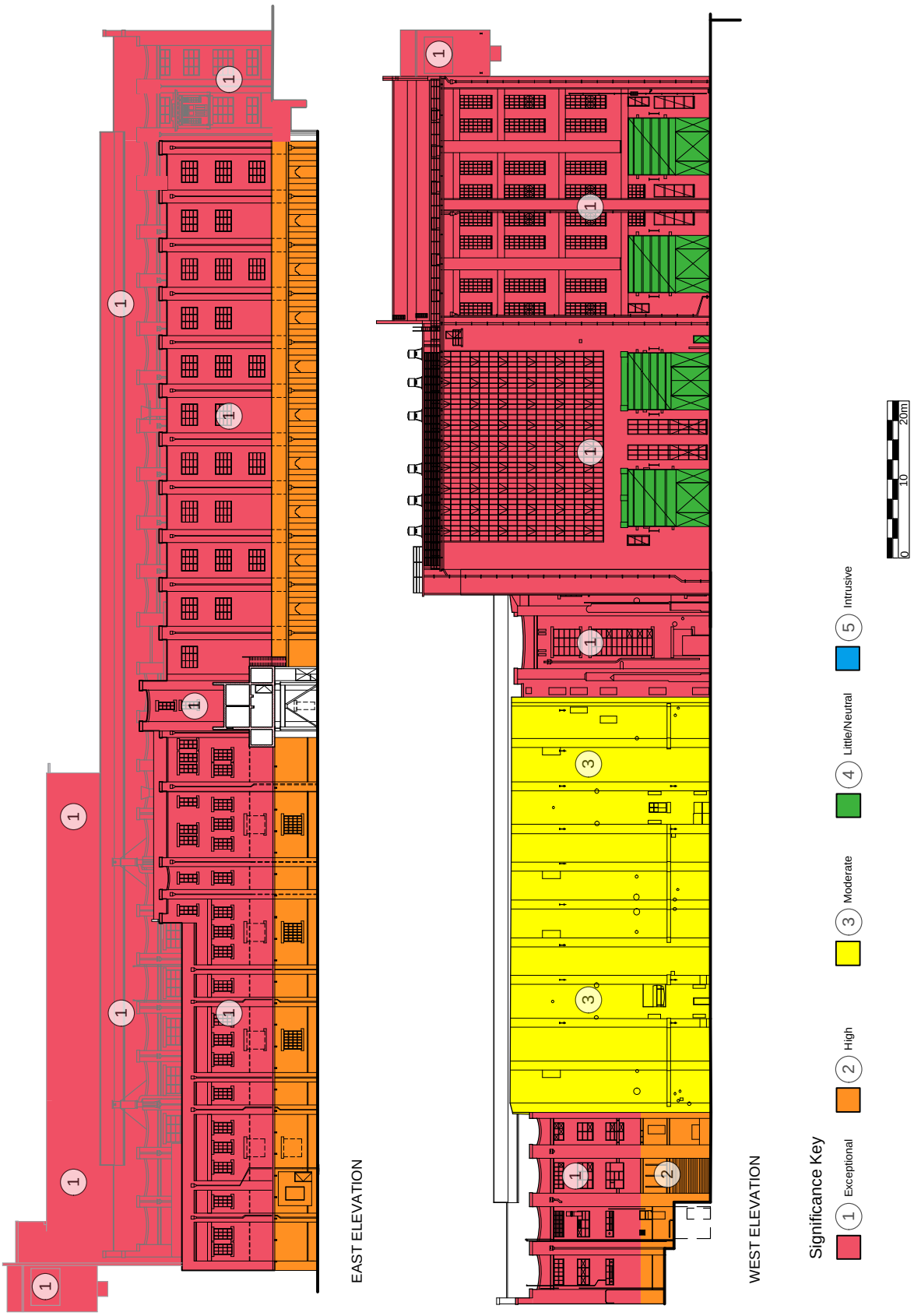


Figure 3.8.2.13
East and West Elevations Significance Gradings

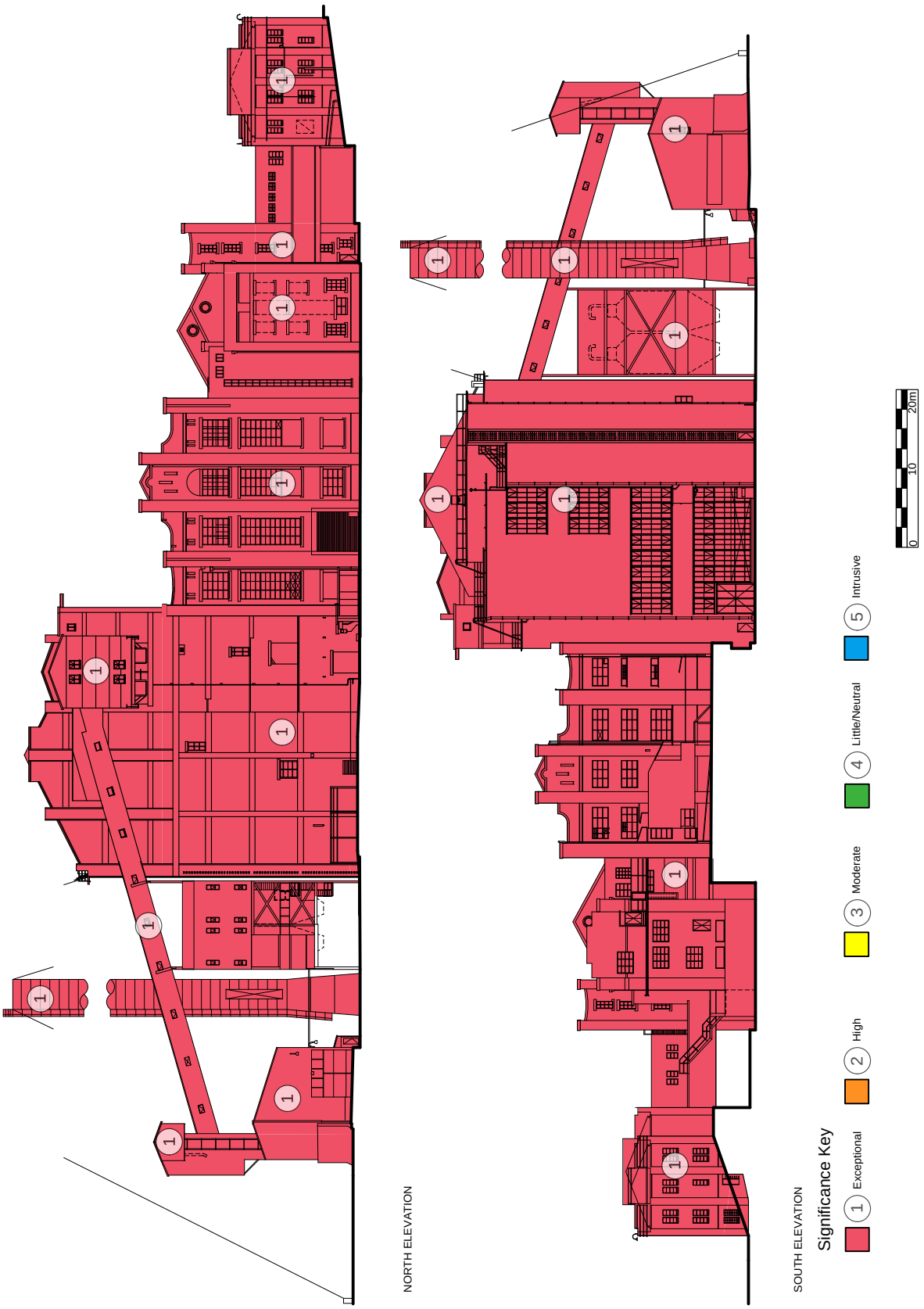


Figure 3.8.2.14
North and South Elevations Significance Gradings

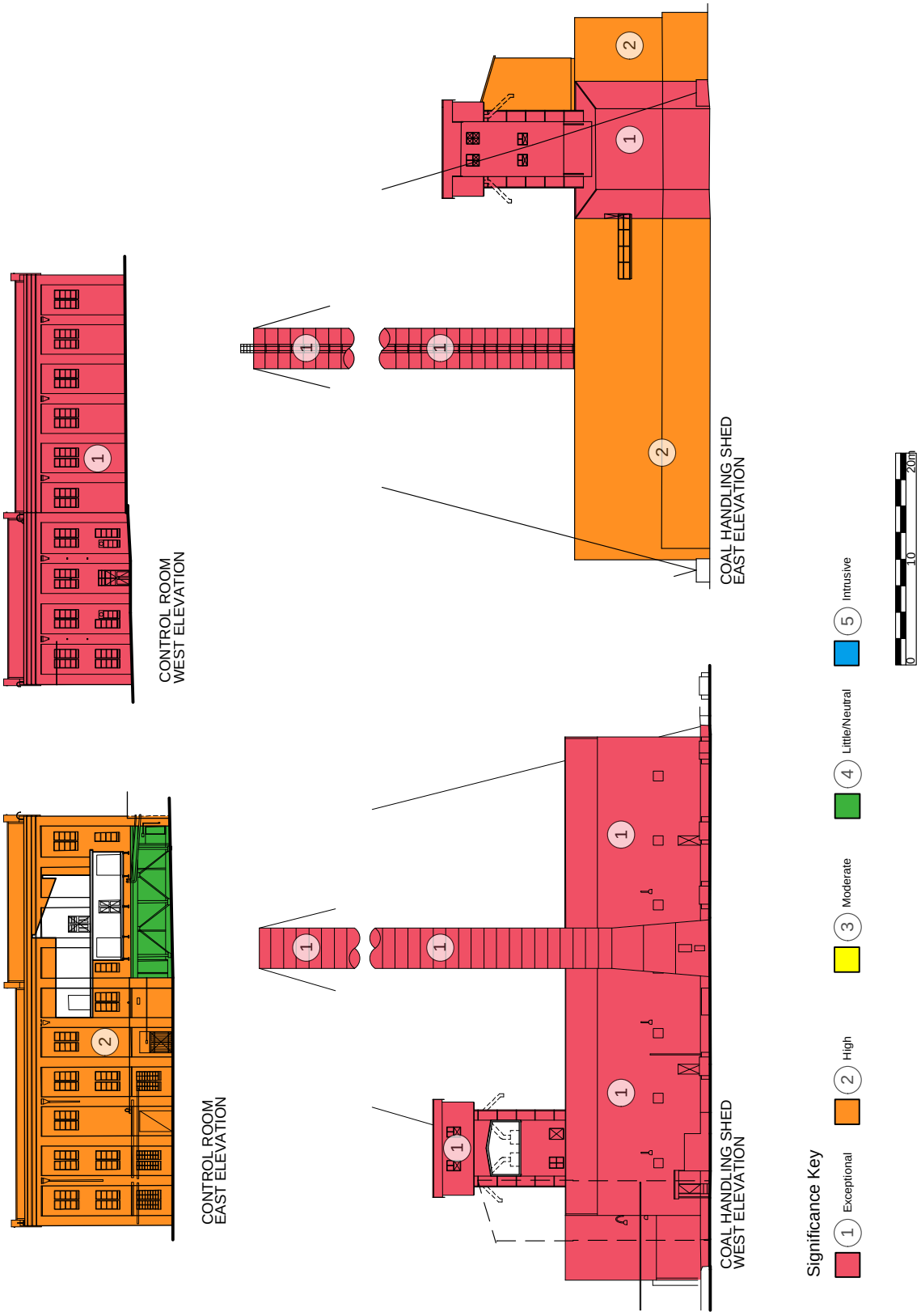


Figure 3.8.2.15
Control Room and Coal Handling Shed Elevations Significance Gradings

Conservation analysis

Section 4
Statement of cultural significance

The statement below has been drafted by the consultant team and revised in 2013. It also draws from the Don Godden and Associates report of 1989.[1]

White Bay Power Station was the longest serving power station in metropolitan Sydney, generating electricity continuously for more than seventy years. Its extant buildings, structures and machinery provide important and rare tangible evidence of the first phase of large-scale power generation in New South Wales. It made a major contribution to the expansion of Sydney's electric tram and rail network and to the daily lives of millions.

It is the only surviving power station in New South Wales from the early and mid twentieth century to retain a substantially intact and representative set of buildings, structures and in-situ machinery that demonstrate the complete operating systems and processes of coal fired power generation and supply. Its extant machinery elements and associated structures are, both individually and collectively, of exceptional historic, technical and aesthetic significance and include a representative sample of the coal, ash and smoke handling systems, boilers and feed water systems, circulating cooling water, turbines and generators, electrical switch gear, and control systems.

White Bay Power Station contains buildings structures, and internal and external spaces of exceptional historic, aesthetic, technical and social significance. They include raw industrial spaces of a scale, quality and configuration which are increasingly rare and which inspire visitors and users alike. The significance of these structures and spaces is greatly enhanced by, and in most cases dependant on their associated, extant, in-situ machinery elements.

White Bay Power Station is of exceptional aesthetic and social significance to Sydney residents as a prominent and widely recognised harbourside industrial landmark, signalling the entry point to the Balmain peninsular from the south and east, and is highly visible from major approach roads, streets and surrounding areas. The form and arrangement of the buildings, and in particular the two chimney stacks, are visible from many parts of the inner west and are a constant reference point. The power station, including the site of the former White Bay Hotel, defines a major entry point to the city from the west. It also forms part of a closely related group of industrial and large scale structures and spaces on this western edge of the city (former White Bay container terminal, Glebe Island silos and the former container terminal, and the Anzac Bridge).

White Bay Power Station is of exceptional social significance for both local residents and former employees as an important landmark, one of few surviving industrial structures that were once the signature of this locality. It is a potent symbol of the area's industrial origins and working traditions which have influenced domestic and community life, and is associated with a 'working class' character. It is of exceptional social significance for those who worked in the power station for its ability to demonstrate technological systems and processes that were a feature of their working lives in this era of power stations and that create for them an important and highly valued connection

1 *Don Godden and Associates & Heritage Consultants, 'The Significance of White Bay and Balmain Power Stations to Sydney's Industrial Heritage: A report to the Electricity Commission of NSW', 1989. pp. 53 - 55.*

between the past and the present.

The body of archives, reports and oral history recordings associated with the White Bay Power Station, provides evidence for the development of technology and work practices at the station and are an integral part of the exceptional significance of the place.

The former White Bay Hotel had strong associations with the recreation activities and the workers at White Bay Power Station and was an important part of the Station's public identity. Its location and elevation made it a prominent landmark in the western approach to the city.

The Hotel was built in 1916, replacing an earlier hotel of the same name, located approximately 100m further south and built in the 1860s. Following its destruction by fire, the remaining fabric of the White Bay Hotel contains little significance.

Conservation Policy

SECTION 5
Issues, Opportunities and Policies Arising

To retain the cultural significance of White Bay Power Station, policies must be developed to guide future decisions and work to the place. Key issues and opportunities arising from its cultural significance, the Burra Charter, statutory controls and requirements, the client's brief and the physical condition of the place are identified and considered and appropriate policies drafted.

In the following discussion, issues and opportunities relating to the cultural significance of the building, structures and machinery, are grouped together as they are inter-related. The discussion begins with the general and progresses to the specific parts and components of the place.

The policies which arise from the following discussion, are included here in italics and are numbered. As their real intent may not be fully understood without reference to the accompanying discussion they must not be separated from it or considered in isolation.

Policy 0.1
Policies should only be considered with reference to the supporting discussion as this will make their context and meaning clear.

In this policy section, the discussion begins with the general and progresses to the specific parts of the place. Thus the relevant policies for specific aspects or elements of the place may be found in more than one location.

For the sake of clarity and brevity, the discussion and policies consider issues and matters relating to adaptation and new work as an integrated part of considerations arising from cultural significance.

Discussion and policies relating to particular elements or issues may be found in more than one place in the CMP and therefore no part of it should be considered in isolation from the whole.

5.1 CULTURAL SIGNIFICANCE

The White Bay Power Station, like many other urban industrial sites, is now redundant and the significance of the place and its component parts is at risk unless and until a new use or uses can be found which will ensure it has a viable future.

It is essential that in considering any future use or uses that constraints, issues and opportunities which arise from the significance of the place are properly understood and

clearly articulated.

The following constraints, issues and opportunities arise directly from Section 3 and 4: Discussion and Statement of Cultural Significance.

5.1.1 Generally

The White Bay Power Station is of exceptional significance to New South Wales and the Sydney region as a remarkably intact surviving urban power station from the 20th century. This intactness is dependent upon the retention of the full suite of structures, spaces and machinery which comprise the complete "slice" of the power generation process from coal handling to power reticulation.

It is a significant landmark in the area and to local communities, marking the border between the industrial waterfront areas to its east and the suburbs to its west and north.

It contains structures, machinery and spaces of exceptional significance, both internally and externally and has strong contextual associations with other former and current industrial and infrastructure sites in the area.

It is therefore essential that in order to retain and respect this cultural significance those elements which embody and or support this significance are retained and conserved. To achieve this the findings and policies of this CMP should guide the process of adaptive re-use.

This CMP will be used to guide the future of White Bay Power Station in 3 distinct ways:

- As part of the process for finding an appropriate new use for the place,
- As part of the master planning and design phase for the site,
- As a management tool for the on-going running of the place.

Policy 1.1.1
White Bay Power Station retains considerable cultural significance and must be retained and conserved. In order to ensure its long term maintenance and survival it must be adapted for an appropriate new use, or uses. Such uses must retain and respect the significant elements and attributes of the place.

Policy 1.1.2
The policies set out in this document should be applied irrespective of the use to which the place, or its parts, are put.

Policy 1.1.3
All volumes of this CMP should form part of any tender documents prepared for seeking expressions of interest for White Bay Power Station. The CMP should not be used in an abridged format.

Policy 1.1.4
Master Plan design proposals or any plans which set the framework for the future of White Bay Power Station should be developed in response to this CMP and in conjunction with appropriate conservation advice.

The detailed issues regarding changes to areas and elements of varying significance are discussed in the Sections which follow, however new interventions in those areas of exceptional to moderate significance must be well considered by designers with proven experience of working in architecturally sensitive environments. In other areas and spaces of lesser significance these restrictions do not apply and will, in any case, be approved or not by the NSW Department of Planning and Infrastructure and the Heritage Council. However any work in those areas should not compromise more significant elements or the significance of the place as a whole.

Policy 1.1.5
The integrity of those structures, spaces, elements and machinery which comprise the complete representative "slice" of the power generation process from coal handling to power reticulation must be retained and respected in any future use or development on the site.

Policy 1.1.6
White Bay Power Station must retain a use or uses, which allow reasonable public access to, and interpretation of, those significant spaces, elements and machinery that represent the component parts of the power generation process. Such access should not place significant fabric or qualities of these areas at risk of alteration, damage or removal.

Policy 1.1.7
The aesthetic (including the sensory aspects of visual, aural and tactile) qualities of the internal and external spaces and elements of exceptional and high significance must be retained and respected, viz. the visual and spatial qualities of the Turbine Hall.

Policy 1.1.8
The significant historic, technical and contextual associations between the White Bay Power Station and other places must be retained and respected, viz. its relationship to the port and railways.

Policy 1.1.9
The principal and exceptional spaces of the building should house a use or uses which are preferably inspired by and respond to the character and quality of the spaces and their significant elements. All uses should respect the qualities, character and significance of those spaces and elements in their fitout and presentation.

Policy 1.1.10
Any new interventions, alterations and additions to significant areas must be exceptionally well designed by designers with proven experience of working in architecturally sensitive environments.

Any proposal for change to the place must be considered with regard to its impact on the significance of the place, its spaces and elements. As changes will be necessary in order to adapt the place for a new use or uses, these must be assessed in the broadest sense to determine whether the proposed changes respond to and support the significance of the place and whether or not they are reversible.

The issue of reversibility is an important one, in that future generations should be given as a starting point for their adaptations, a place which is no less significant than what survives now, a place which has retained its present significance. If this principle is ignored, the place and its component parts could progressively lose significance to the point where it is severely compromised or even lost. The location and configuration of fittings, machinery and structural elements are important in demonstrating the process of power generation. This is of the highest significance and must not be compromised or put at risk.


Figure 5.1.1.1
Boiler House machinery
(Design 5 - Architects)

This does not prevent change or alteration to the spaces which house them, but such changes should not diminish the significance of the place, its significant spaces or elements.

It may be that a proposal for change may include alteration to some highly significant spaces. Where such changes retain and, most importantly, respect the overall significance and quality of the space, and are ultimately reversible (i.e. the removed or altered elements can be returned to their original configuration should the use or requirement change again) then such changes may be considered acceptable.

Restoration of machinery or elements which have been removed and are presently stored elsewhere, could be considered where such elements are of high significance, or are part of an assemblage of high significance, and such restoration would enhance the significance

and/or understanding of the place.

Policy 1.1.11
Any proposal for change to the place must be considered with regard to its impact on the significance of the place, its spaces and elements. As change will be necessary in order to adapt the place for a new use or uses, these must be assessed in the broadest sense to determine whether the proposed changes respond to and support the significance of the place and whether or not they are reversible. In principle, those changes which are minimal with least impact are preferred to those with greater impact on the significance of the place, its spaces and elements.

Policy 1.1.12
It may be that a proposal for change may include alteration to some highly significant elements or spaces. Where such changes retain and, most importantly, respect the overall significance and quality of the space or element, and are ultimately reversible (i.e. the removed or altered elements can be returned to their original configuration without damage should the use or requirement change again) then such changes may be considered acceptable.

Policy 1.1.13
Restoration of elements which have been removed and are presently stored elsewhere, could be considered where such elements are of high significance, or are part of an assemblage of high significance, and such restoration would enhance the significance and/or understanding of the place.

Policy 1.1.14
Original or early elements stored on site must be retained on site. They must be either kept in safe and secure storage on site or preferably returned to their original locations in accordance with the previous policy.

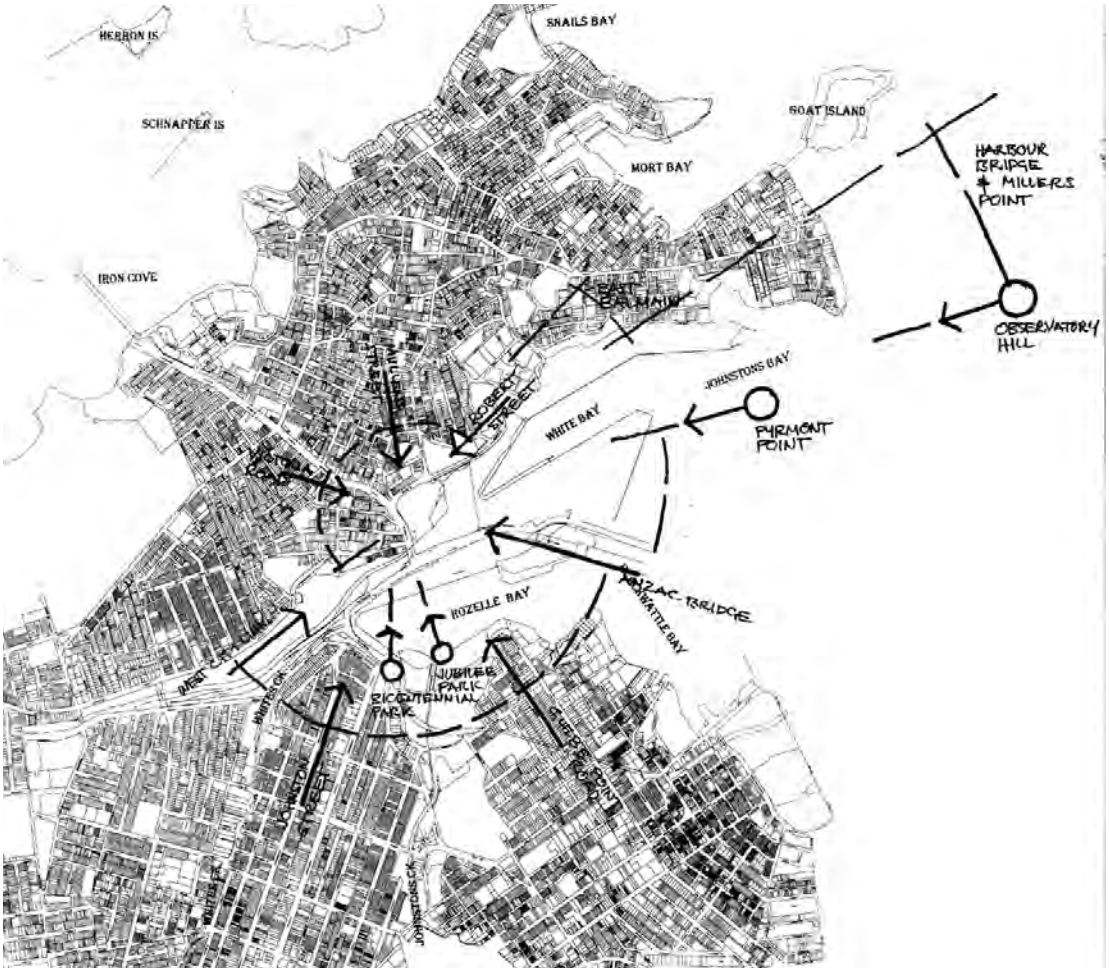


Figure 5.1.1.2

Views to White Bay Power Station showing major axial and general views which is also the Visual Curtilage of the Power Station..

5.1.2 Context and setting

5.1.2.1 Views of the Power Station

In order to retain the visibility and prominence of the White Bay Power Station as a harbourside landmark, it should not be substantially obscured by any development on nearby sites. All too often those landmarks which define an area or have for a long time formed the focus of views and axis along major roads and from major public spaces are diminished by inappropriately placed or scaled development in their vicinity. Thus any development being proposed in the vicinity of the White Bay Power Station must carefully consider its bulk, scale and placement in order to respect its landmark values.

Policy 1.2.1
Any development being proposed in the vicinity of the White Bay Power Station must carefully consider its bulk, scale and placement in order to respect the visibility and prominence of the power station as a harbourside landmark.

Figure 5.1.2.1
View from North East
(Design 5 - Architects)

Those views from major axial approaches such as Anzac Bridge, Glebe Point Road, Johnston Street Annandale, City West Link, Victoria Road (from north west) Mullens Street and Robert Street must be maintained as substantially unobstructed views. Any new structures in the vicinity of the White Bay Power Station must not substantially mask the visibility of the power station or threaten its landmark qualities as the major focal element in these views.

Policy 1.2.2
Those views from major axial approaches such as Anzac Bridge, Glebe Point Road, Johnston Street Annandale, City West Link, Victoria Road (from north west) Mullens Street and Robert Street must be maintained as substantially unobstructed views. Any new structures in the vicinity of the White Bay Power Station must not substantially mask the visibility of the power station or threaten its landmark qualities as the major focal element in these views.

Those views which are general or changing views from The Crescent, Bicentennial and Jubilee Parks in Glebe, Blackwattle Bay, Pyrmont Point, Darling Harbour, Observatory Hill, Millers Point, Sydney Harbour Bridge and East Balmain provide many opportunities to see White Bay Power Station in its harbourside industrial context. In each view, there are other elements which frame the White Bay Power Station, however the massive boiler house, coal handling conveyors and the two chimney stacks still clearly define it as a landmark in its context. Other elements may partially mask its visibility but from any of these broader vantage points it quickly becomes visible again as one moves. This is particularly clear when considering the views to White Bay Power Station as one moves across the Harbour Bridge. It is still important, however, that general and changing views towards White Bay Power Station from the harbour, major parks and public areas of the southern edge of Balmain and Rozelle, Glebe Point, Pyrmont Point, Observatory Hill and Darling Harbour, as well as from the Harbour Bridge, Anzac Bridge, City West Link road, The Crescent and Victoria Road, should be retained substantially unobstructed by other large elements, existing or future. Such elements should be sited, so as to be seen as part of its industrial context, framing the power station and strengthening its maritime related industrial character.

The former White Bay Hotel building was, before its destruction by fire, a significant associated landmark on Victoria Road – the last structure on this road before the corner where it turns towards the Anzac Bridge. There is potential for this 'landmark' to be reinstated with a new structure.

Policy 1.2.3

General and changing views towards White Bay Power Station from the harbour, major parks and public areas of the southern edge of Balmain and Rozelle, Glebe Point, Pyrmont Point, Observatory Hill and Darling Harbour, as well as from the Harbour Bridge, Anzac Bridge, City West Link road, The Crescent and Victoria Road, should be retained substantially unobstructed by other large elements, existing or future. Such elements should be sited, so as to be seen as part of its industrial context, framing the power station and strengthening its maritime related industrial character.

In summary, the following major views should be preserved as far as possible, in accordance with Policies contained herein and in the Glebe Island and White Bay Master Plan November 2000 (Sydney Ports):

Axial Views

- View of chimneys, coal handling unit and turbine/boiler halls from Johnston Street Annandale
- View from Glebe Point Road
- View of the building from Anzac Bridge, the road and cycle/footpath
- Views from Pyrmont Point
- Views from Victoria Road

General/changing Views

- View from south edge of Balmain and Rozelle, and along Robert Street
- View from Glebe peninsula
- View of the building from Anzac Bridge, the road and cycle/footpath
- Views from Pyrmont Peninsula
- Views from east from Darling Harbour and Observatory Hill
- Views from the Harbour Bridge
- Views from City West Link road and the Crescent
- Views from water to north east and south east of WBPS
- Views from Victoria Road

Figure 5.1.2.2
Distant View
(Design 5 - Architects)

It is important when considering new development in the vicinity of the WBPS to be aware of this "changing view" nature of the Power Station and to avoid broad and high blocks of new structures which may mask the view over a larger area. Singular or smaller elements, placed with their narrow width on or close to the line of view will help to lessen this visual impact. This already occurs in some respects with the present row of silos on Glebe Island. Although they do block the view of White Bay Power Station from the west side of the Pyrmont Peninsula, they also frame the view from other vantage points, and in fact strengthen the industrial nature and scale of its context.

It is noted that silo structures are exempt from the height guidelines of the Sydney Ports Glebe Island and White Bay Master Plan. If any such structures are considered, they should be located in accordance with the guidelines above and in such a way that does not substantially obscure the main elements of the power station which define it as a landmark from this side, when viewed from the main axial views and the major parks and public areas mentioned above.

Policy 1.2.4

If any large silo structures are considered (as provided for in the Glebe Island and White Bay Master Plan November 2000), they should be designed and located in accordance with the guidelines above and in such a way that does not substantially obscure the main elements of the power station which define it as a landmark from this side, when viewed from the main axial views and the major parks and public areas mentioned above.

The principal elements of the power station which should be visible in distant views from

the north east to the south east are:

- 2 chimney stacks
- Boiler House - east and north walls and gabled roof profile
- Coal handling elevator, elevated conveyor and transfer house

(Other important structures and elements are discussed below in Section 5.1.2.2.)

Lower level structures between the Anzac Bridge (western approaches) and the White Bay Power Station could be constructed as long as they do not substantially obscure the major view of the east front of the power station. The full height of the glass curtain wall to the 1958 boiler house should be visible from the western approaches to the Bridge.

Policy 1.2.5
Lower level structures between the Anzac Bridge (western approaches) and the White Bay Power Station could be constructed as long as they do nor substantially obscure the major view of the east front of the power station. The full height of the glass curtain wall to the 1958 boiler house should be visible from the western approaches to the Bridge.

While there has been a reduction in large scale shipping and industry on Glebe Island, traditional port activities will continue for the foreseeable future. Large scale shipping is supported by the Glebe Island & White Bay Master Plan. The recent proposals by The Ports Corporation for a new Cruise Passenger Terminal in Wharf 5 and overflow in wharf 4, will introduce large cruise ships to the area and added infrastructure to the east of the site.

Activities which also require the retention and ongoing use of rail access to the port should also be retained. This will retain the industrial context and historical association of the power station and maintain the rail link adjacent.

Policy 1.2.6
Neighbouring Councils and authorities should be informed of the need to respect these views in accordance with the above policies, and negotiations should be undertaken with them to ensure that relevant planning legislation is put in place to ensure this preservation.

5.1.2.2 Visible elements of the Power Station

Whilst it is important to retain certain views to the Power Station as discussed above, there are structures within the site which must be retained in order for the Power Station to remain identifiable as a Power Station. These important structures and elements are:

Chimney stacks

The most visible components of WBPS are the 2 chimney stacks. These are visible above other buildings even when the other parts of the Power Station are not seen. They are seen on axis from a number of important approaches and are a powerful marker of place. They should both be retained as they are a crucial element in the identity and landmark qualities of the place.

Policy 1.2.7
The two chimney stacks should be retained and conserved as they are a crucial element in the identity and landmark qualities of the place.

Roofs

The long pitched roofs to the 1953 section of the Boiler House, the Turbine Hall and Switch House, with their vented ridges and gabled ends are also prominent elements, because of both their scale and their height. These should also be retained as elements visible from afar.

Policy 1.2.8
The long pitched roofs to the 1953 section of the Boiler House, the Turbine Hall and Switch House, with vented ridges and gabled ends should be retained as elements visible from afar.

Coal Handling Unit

The coal handling unit, specifically the elevator tower, inclined shaft conveyor and the motor room and transfer house at its top end attached to the Boiler House, are all clad in now rusting galvanised steel. For the 2004 report, these elements were identified by the local community as highly significant in terms of their being part of the visual identity and sculptural outline of the WBPS. From a distance, particularly to east and north, they are prominent and distinctive, and should be retained. The present rusted finish has also been identified as significant, however its unchecked deterioration is allowing water to enter and thus threaten the internal structure.

Figure 5.1.2.2.1
Coal Handling Shed and Conveyor
(Design 5 - Architects)

Policy 1.2.9

The coal handling unit, specifically the elevator tower, inclined shaft conveyor and the motor room and transfer house at its top end attached to the Boiler House, are all clad in now rusting galvanised steel. These elements have been identified by the local community as highly significant in terms of their being part of the visual identity and sculptural outline of the WBPS. From a distance, particularly to east and north, they are prominent and distinctive, and should be retained. The rusted finish has also been identified as significant. Rusted steel cladding components should be managed in accordance with subsequent policies relating to rusted steel cladding and roofs.

The high level inclined external conveyor is an important element in understanding the scale and nature of the former use of the place. As a visual element, it relates closely to nearby sites such as the inclined chute from the north side of the silos and the cranes on White Bay Container terminal and is associated with the bulk transfer of raw materials within a site and between processes.

Masonry Walls and Building Mass

Each elevation of the power station complex presents a different characteristic of the place and relates in a different way to its context. The east and north elevations are massive and dramatic in their scale and their relationship to the surrounding areas. These are visible and appreciated from some distance and this aspect of the place should be retained and respected.

Policy 1.2.10

The east and north elevations are massive and dramatic in their scale and their relationship to the surrounding areas. These are visible and appreciated from some distance and this aspect of the place should be retained and respected.

The west and south elevations are seen as less dramatic but their overall massing, configuration and visibility is equally as important in the identity of the place and should be retained and respected.

Policy 1.2.11

The west and south elevations are seen as less dramatic but their overall massing, configuration and visibility is equally as important in the identity of the place and should be retained and respected.

The remnant landscaped elements and associated structures from the power station use should also be retained and conserved.

Policy 1.2.12

The remnant landscaped elements and associated structures from the power station use should also be retained and conserved.

Issues and Opportunities for future development externally are discussed in Section 5.10.

Masonry walls: East elevation

- Highly visible from Anzac Bridge approach, particularly the chimneys and the Boiler House with its large and distinctive glass curtain wall.
- Blank wall of Pump House where Boiler House No. 2 removed is a disfiguring element but height of walls is impressive.
- Retain views to Boiler House walls particularly upper parts and glass curtain wall.
- Opportunity to construct new building in front of the blank wall. It should be at least as high as existing wall but no higher than the 1958 Boiler House.
- South gables and parapets to Turbine Hall appear remote from remainder because of blank wall of removed Boiler House.
- South end of the east elevation beyond the blank section is less dominant in distant views than the Boiler House. Still important. Could be masked or left exposed.

Masonry walls: South elevation

- Not fully seen from afar in any meaningful way. Visible on approach from south along Victoria Road. Significant as defining south extremity of built form of WBPS. Could be partially masked except for upper west section. The south elevation is more visible now after the demolition of the White Bay Hotel. However, this view could be framed or partially screened again by new structure in a similar manner to that provided by the White Bay Hotel.
- South end of 1958 Boiler House plays lesser role in this view except from Victoria Road cycle path. Could be masked.
- Sense of linearity of face of Boiler House, and axis of chimneys set against coal handling facility is striking from this southern direction. Should not be lost. New elements possible but retain views to allow axis to be appreciated.

Masonry walls: West elevation

- Generally appears as a two storey high building due to the steep fall of the land and deep cutting which encloses buildings. Significant elements are modulated parapets of Turbine Hall, Switch House and original lift tower, all with roofs rising behind, regular steel framed window openings; regular rainwater heads and downpipes.
- The 1948 Control Room and Switch House structure is lower and less prominent in this view.
- When approaching from north west down Victoria Road the large billboards, remnant trees and blank walls from the transformer yards are also strong elements. Billboards effectively define the edge of Victoria Road with WBPS rising beyond. Billboards have been there since at least the early 1980s.
- Retain views of continuous wall lengths, parapets and roofs of Switch House and Turbine Hall.
- Retain large billboards but must see WBPS above them from further up Victoria Road.
- Opportunity to locate lower structures in foreground.

Masonry walls: North elevation

- This elevation is the iconic diagram of the WBPS when viewed from far and near particularly from the Mullins Street approach.
- Should remain as strong clear element with hierarchy/height difference between major components respected.
- Opportunity to put lower structures in foreground but retain clear view access along ash handling tracks.

External corrugated steel cladding and roofs

In the 2004 report, aged and rusted components including cladding and roof sheeting were identified as a distinctive and significant aspect of the power station. Of particular interest was the rusted cladding to the Coal Handling Unit, inclined elevator and transfer house prominent on the north elevation. Also relevant was the Turbine Hall, Administration Building and the Switch House roofs which are seen from western approaches, namely, Victoria Road.

Since the 2004 assessment, the extent of rust is now threatening the integrity and weather tightness of the building and has already resulted in corrosion of structural and other internal elements. While treatment of existing material with rust converters, stabilizing treatments or patch repairs is preferred, in many cases the cladding is now beyond repair and will require full or partial replacement so as not to risk further deterioration and corrosion of structure and interiors.

An important aspect of the industrial aesthetic of the place is as an assemblage of parts, all industrial and utilitarian, tough and robust, of different materials and from different periods. For this reason, replacement with new corrugated galvanized steel is considered to be the most appropriate method for the long term repair and maintenance in terms of compatibility, honesty, and retaining the sense of industrial layering, which, in itself is a major significant aspect of the place. The weathering process on galvanised steel adds its own, slowly evolving patina and this is an important aspect of the aesthetic qualities of the place. Materials such as Zincalume may be more durable in terms of corrosion, but they are often not as strong, and they present as a very uniform surface with no change from patination.

Consideration of alternative materials would only be acceptable where they will achieve a more durable and sustainable outcome and do not diminish the significant values of the place or cause corrosion of adjacent existing material. An example of an acceptable change to roofing material is the substantially concealed roof over the main Control Room, replaced c1990s with a metal deck profile. Another would be replacement of the roof over the Turbine Hall with new colorbonded corrugated Zincalume steel of a strength that does not require additional supports or altered structure, as long as the colour is recessive and sits well with the nearby aged (but not corroded) galvanised steel.

Issues of metal compatibility and galvanic action are important considerations. For example, contact between or run-off from a more inert metal such as zincalume onto a more reactive one such as galvanised steel would cause corrosion and early failure.

New material should be appropriate for its intended purpose and suit the site conditions. For example, where exposed roof purlins are prominent elements in significant interiors such as the Boiler House or Turbine Hall, any proposed replacement sheets must be able to span between existing support purlins without the need for additional supports.

As well as the above, cost considerations will also be important when looking at alternative materials. Some options may provide potential for cost savings that could provide opportunity for further heritage benefits (maintenance and/or repair) elsewhere on the site, particularly prior to any proposed viable reuse. However the goal should always remain retention of the significant values of the White Bay Power Station.

Figure 5.1.2.3.1
Axis of Ash Handling Unit
(Design 5 - Architects)

Policy 1.2.13
The extent of complete re-sheeting or isolated patch replacements should be considered on a case-by-case basis. Adequate

waterproofing of the roof should be considered with the highest priority for the protection it provides to structure, significant interiors and fabric generally. Complete replacement of the galvanized steel roof over the Pump House, Turbine Hall, the Administration building (including box gutters and rainwater goods) and cladding to the Coal Handling Tower should be carried out as soon as possible with new steel sheets. Further analysis of steel cladding to the Coal Handling shed, coal conveyor, transfer tower, ash handling tower in terms of either repair, partial or complete replacement should be considered.

Policy 1.2.14

Any replacement of existing roof and wall cladding to the Coal Handling shed and tower, Coal Conveyor, Ash Handling Tower or the Transfer Shed (all currently galvanised steel) should be carried out with galvanised corrugated steel with a galvanising equal to or better than the Z600 material currently available.

Policy 1.2.15

Any replacement of existing roof sheets should preferably be corrugated galvanised steel (as per original roof and cladding steel), however, an alternative material may be considered depending on visibility, suitability, compatibility and durability.

Policy 1.2.16

Alternative roofing materials may be considered acceptable to areas not covered by Policy 1.12.14 only when they can meet the following criteria:

- *Any new material must be compatible with adjacent or other existing materials and not cause corrosion through galvanic or other action.*
- *Where only partial replacement of existing roofing or cladding is required, new material must match exactly (material and profile) of the remaining retained material.*
- *No existing significant fabric or structure should be altered, or additional structure such as closer spaced purlins added, to accommodate the limitations of replacement alternative materials, in spaces of exceptional or high significance where these will be visible.*
- *Durability should exceed that of the original material.*
- *Replacement material must not damage or negatively impact on the significant views or values of the White Bay Power Station.*

Figure 5.1.3.1
Control Room Machinery
(Design 5 - Architects)

5.1.2.3 Views within the site

The principles views within the site were identified in Section 3.2.1 They are:

- north elevation including coal and ash handling structures
- along axis of ash handling area between chimney stacks and boiler house. Sense of scale is increased by framed view on this axis and under ash handling unit
- from south east looking towards pump house wall and admin area across vacant site of Boiler House #2
- along open space between Turbine Hall and Switch House
- along west wall of Switch House from north on axis with original lift/stair tower
- along axis with tracks within transformer yard towards and under connecting structure to the 1948 Switch House
- Distant views to Glebe Island, Darling Harbour, Millers Point, Harbour Bridge from Bus Stop between the former White Bay Hotel and White Bay Power Station along Victoria Road.

Few of these significant views are from south looking north. Views/vistas within the site along these axes and elements should be retained in order to retain an understanding of the connections and processes within the site and their significance. There is an opportunity to further modulate some of these vistas by inserting new structures which could add interest, colour and texture and announce a change in activity or a new entry point as long as these

do not confuse the significance of the place. Whenever possible such new elements should aid interpretation of this significance.

5.1.3 Heritage Machinery Generally

The conservation planning process established by the guidelines of the *Burra Charter* of Australia ICOMOS requires that relevant constraints and opportunities be identified as part of the process for developing conservation policies for places of significance. They are as follows:

- constraints arising from the heritage significance of the place and its component elements;
- physical constraints arising from the condition of the buildings and structures;
- external factors, including relevant statutory and non-statutory controls; and
- feasible uses and client requirements.

This section of the report sets out the key constraints and opportunities that affect the extant machinery associated with the eight operational systems at White Bay Power Station (refer to Section 3.4).

Figure 5.1.3.2
Coal Handling Shed Equipment
(Design 5 - Architects)

White Bay Power Station retains extant components of eight operational systems which are a representative sample only of the original machinery at White Bay Power Station. These systems are described in Section 3.4 of this volume of the report. In most instances there is a single extant item where once there were multiple examples. These now rare items are integral to, and enhance the overall significance of White Bay Power Station. No item may be removed without depleting the integrity of the power station. They must be retained in situ. They cannot, and must not, be adapted for a new function.

The eight inter-dependent operational systems are evocative of the industrial qualities of the place and contribute to its interpretability as a power station. Each individual element of machinery, or item, has characteristics and qualities which are similar to many items of portable cultural heritage in that they cannot be adapted to a new function.

The opportunities available at White Bay for these operational systems and their associated component elements are in their interpretability and educative ability to contribute to an understanding of the historical development and function of the White Bay Power Station as an industrial site which played a significant role in the generation of electrical power in Sydney and in the expansion of Sydney's electric rail network. This must be interpreted to future users of the place and also to the visiting public.

Various disparate items outside these major pieces of machinery (for which inventory sheets have been prepared), which have the ability to contribute to the interpretability of the machinery at White Bay Power Station, are those smaller movable elements which may not have been specifically identified as having an association with a particular operational system. Such items as are to be found in the Boiler House, the Turbine House and the Switch House and especially in the old Control Room and the Battery Room include:

- all signage, including labels and tags;
- switch boards and associated switches etc;
- power points and associated electrical equipment;
- meters and dials;
- cabling;
- valving; and

- tables, tanks and sinks associated with the Battery Rooms.

These small and, in some cases apparently nondescript, items contribute to an understanding of the significance and operational role of the eight operational systems at White Bay Power Station. The issues and opportunities for the eight identified operational systems are discussed below in relation to their spatial environments.

The extant machinery, that is the single representative sample of the complexes retained at White Bay Power Station generally, except for parts of the switch house, occupies the northern section of the buildings in which they are housed. Hence the machinery associated with coal handling is located at the northern end of the coal handling shed, the boiler, pulverising mills and associated machinery and equipment is housed in the northern section of the Boiler House. The turbo-alternator set, the condensers and associated machinery and equipment are in the northern section of the Turbine House. The equipment associated with the in-house electrical supply and the power reticulation system are not, generally, so conveniently located.

Although it may be possible that an item or piece of machinery may be relocated, this should not be undertaken without consideration of its total environment. In the majority of instances an item will not be able to be moved, or relocated. If an item must be moved this may not be done without the associated machinery and equipment that comprise its total environment.

The opportunities available for the machinery that comprises the representative slice of the functioning power station are discussed below.

Discussion

White Bay Power Station retains a sample of the historic machinery responsible for the power generating process, represented in eight operational systems housed in four of the extant structures at White Bay Power Station. These operational systems have been identified as having Exceptional and High significance and, the nature of the systems is such that they are composed of interdependent elements with each system also being operationally interdependent.

The extant machinery and associated equipment provide a representative slice of the overall functional operations at White Bay Power Station and as such should be retained in situ and conserved, maintained and interpreted as recommended in this report. Although it may be argued that some items may be relocated to enhance their interpretability, or to provide greater scope for the adaptive re-use of the buildings, no item may be removed without depleting the integrity of the place of the power station.

It is also important that all existing machinery be properly catalogued. Any other machinery elements brought on to the site must first be tagged and noted in a separate inventory or catalogue to avoid later confusion.

An Interpretation Plan and program for the eight operational systems should be prepared as an essential contribution to an understanding of the electrical power generation through the use of coal and steam for the Sydney community. The significance of the White Bay Power Station would be enhanced by an interpretation of the technology and processes represented in the extant machinery at the site.

Whilst each inventory sheet (refer to Volume V) provides general directions and guidance for the maintenance of each element of the historic machinery, assessment by a materials conservator will be necessary to initiate detailed conservation and maintenance action. It is not proposed to attempt re-activation of any of the machinery in situ. Rather, interpretation triggers such as sound, light and smell will be needed as well as the use of text and photographic media.

To further the understanding of the interpretability of the extant machinery at the site it is essential that a detailed investigation be undertaken of each item to determine the maintenance required, and to clarify the technological fabric of each item. This process would further enhance the depth of understanding, and hence interpretability, for each item and its relationship with its operational system and the generation process in its entirety.

The general policies which arise regarding the machinery are as below. Detailed policies are included later.

Policy 1.3.1
White Bay Power Station retains extant components of eight operational systems which are a representative sample only of the original machinery at White Bay Power Station (as described in Section 3.4 of this volume of the report). In most instances there is a single extant item where once there were multiple examples. These now rare items are integral to, and enhance the overall significance of, White Bay Power Station. No item may be removed without depleting the integrity of the power station. They must be retained in situ and conserved in accordance with the guidelines set out in the inventory sheets in Volume V of this report. They cannot, and must not, be adapted for a new function.

Some items of the machinery and elements associated with the power reticulation and electrical supply systems, may be moved to facilitate interpretation but only if really necessary and only after full assessment of the impact has been made.

All machinery elements are in need of cleaning and conservation. This should be carried out by suitable professionally qualified persons.

Policy 1.3.2
The eight operational systems and their associated component elements and the historical development and function of the White Bay Power Station must be interpreted to future users of the place and also to the visiting public. They must be retained in situ and conserved in accordance with the guidelines set out in the inventory sheets in Volume V of this report. They cannot, and must not, be adapted for a new function.

5.1.4 Grading of Significance

The general overarching principle underpinning the guidelines and policies in this Conservation Management Plan is that spaces, elements and items within areas of significance are to be conserved in a manner which retains and respects their significance. Generally this also means that they should be conserved in their current state and, when applying this principle to objects and items, they are to remain in their present position unless removal to another location is covered by a separate policy for that element. Ongoing weather protection and security are also essential to its retention of significance.

The machinery elements in each space are assessed separately and their grading of significance can be found in Volume V of this report.

The significance of each machinery element must be respected and considered in its own right, regardless of the grading of its enclosing space.

The Policies listed below refer to the Gradings of Significance shown in the diagrams in Section 3.8. The following general policy statements have been formulated to guide works on the place. They have been formulated to ensure that the integirty and significance of the space or element is not compromised and that any negative impact is minimised.

Policy 1.4.1
The significance of each machinery element must be respected and considered in its own right, regardless of the grading of its enclosing space. They must be retained in situ and conserved in accordance with the guidelines set out in the inventory sheets in Volume V of this report. They cannot, and must not, be adapted for a new function.

These policies have been refined for specific elements by specific policies later in Section 5 of this

volume of the report. Reference should be made to Figures 3.8.2/1 - 3.8.2/15 in Section 3 of this volume of the report, showing the Gradings of Significance for all structures and spaces on the site.

Spaces/elements graded 1 Exceptional

These spaces, structures or elements are of exceptional cultural significance. They play a crucial role in supporting the significance of the place, and should be retained in their existing configuration. *They are essential to an understanding of the significance of the place and demonstrate the process of power generation. Surviving original machinery, fabric and finishes should be conserved in situ and the integrity of the spaces or elements retained and respected. They should not be obscured nor their significance diminished. The appreciation of the spatial quality and detail of these spaces should not be obscured or diminished. The design intent and integrity of the original work should also be respected and not obscured. Any proposed use must focus on in situ preservation and interpretation as the primary objective.*

Figure 5.1.5.1
Coal Handling Shed Machinery
(Design 5 - Architects)

Spaces/elements graded 2 High

These spaces, structures or elements are of high cultural significance and retain a high degree of significant fabric. They play an important role in strengthening and supporting the significance of the place, but less than that for Grade 1. *In some cases their reduced significance may result from the absence of significant machinery. Where these spaces or elements form part of a space of higher significance or contain machinery or equipment elements of higher significance, any action must respect that higher significance. Retention of surviving significant fabric in situ is preferred to relocation or removal.* ***Adaptation and alteration of these spaces and elements is possible and new elements may be introduced which alter them as long as the integrity of the spaces and fabric and their original design intent is respected and, if possible, strengthened.*** *Evidence of removed significant machinery should be retained in situ. Relocation or removal of these elements may be considered but only if it is necessary in order to achieve retention and conservation of qualities and aspects of space and elements of higher significance. Adaptation of these spaces or elements would be preferred to their loss or removal. Walls and other elements shared between these and other spaces of higher significance should be treated in accordance with the higher ranking as it affects that higher ranked space.*

Spaces/elements graded 3 Moderate

These spaces, structures or elements retain some integrity but are of lesser cultural significance. They play a moderate role in supporting the significance of the place. *Significant fabric may have been altered or obscured. Where these spaces or elements form part of a space of higher significance, any action must respect that higher significance.* ***These spaces and elements can be adapted and changed for other uses, and new openings made, but fabric or machinery of higher significance should be retained in situ in accordance with their ranking.*** *The qualities and integrity of the spaces or elements should, if possible, be respected.* ***Adaptation of these spaces or elements would be preferred to their loss or removal.*** *Relocation or removal of evidence of removed machinery may be considered to allow adaptive reuse of the space however retention and adaptation would always be the preferred option. Walls and other elements shared between these spaces and other spaces of higher significance should be treated in accordance with the higher ranking as it affects that higher ranked space.*

Spaces/elements graded 4 Little/neutral

These spaces, structures or elements retain only minor or neutral significance and may be retained or adapted substantially. *Elements or fabric of higher significance should be retained if possible. Adaptation is preferred to complete removal. Walls and other elements shared between these spaces and other spaces of higher significance should be treated in accordance with the higher*

ranking as it affects that higher ranked space.

Spaces/elements graded 5 Intrusive

These spaces, structures or elements retain virtually no significance, and in some cases may be considered intrusive. *They may be either removed or altered substantially. Elements shared between these spaces and other spaces of higher significance should be treated in accordance with the higher ranking as it affects that higher ranked space.*

Since closure of the power station in 1983 there has been a gradual deterioration in the roof coverings and roof drainage systems, and in a number of areas, particularly over parts of the Turbine Hall and Administration Building, these systems have completely failed.

Policy 1.4.2

In order to retain and protect both the buildings and their significant interiors and machinery from water damage and vermin, all buildings should be made weathertight (unless they were designed to be open) and all roof and stormwater drainage systems put in working order.

Policy 1.4.3

All buildings should be made secure from unauthorised entry and strong security maintained over the whole site.

5.1.5 The Coal Handling Shed and External Conveyor

Of Cultural Significance Grade 1 (refer to Figures 3.8.2.5 & 3.8.2.15 for detailed significance rankings)

The coal handling shed and its associated elevators and overhead conveyor have an iconic quality in the visual identification of the function of the White Bay Power Station. The overhead conveyor provides a visual and physical connection to the Boiler House. Their configuration, form, texture and, if possible, their rusting steel surfaces, should all be conserved.

Both the north and south ends remain open as a rail corridor and this should be retained to respect and not confuse the significance of the structure. If these openings are to be blocked to provide weather protection, they should remain clearly as openable and preferably not solid or opaque panels.

The structures contain large underground areas which still retain machinery but are filled with water. These areas should be drained, the ingress of water stopped, and the structures and machinery conserved, in accordance with the condition survey by Hughes Trueman (see summary in Section 5.3 of Volume II of this report; full report found in Volume IV).

In order to retain and respect the significance of the Coal Handling Shed and at the same time allow its adaptive re-use, the guidelines and policies below should be followed.

Policy 1.5.1

The coal handling shed and its associated elevators and overhead conveyor have an iconic quality in the visual identification of the function of the White Bay Power Station. The overhead conveyor provides a visual and physical connection to the Boiler House. Their configuration, form, texture and, if possible, their rusting steel surfaces, should all be conserved. These elements should be conserved and adapted in accordance with Policy 1.4.1.

5.1.5.1 Building

The north 5 bays should be retained as existing for interpretation purposes.

A new light industrial use could be accommodated at the south end which retains rail tracks, grating and does not require partitions or linings to existing structure. The crude 'shed' character must be maintained.

5.1.5.2 Machinery

The coal handling shed houses machinery and equipment associated with the coal handling system. The preferred option for the shed and the machinery contained within is for retention of the whole. There are, however, opportunities which include the retention of the machinery while exploring alternative avenues for adaptive re-use of the larger part of the shed.

As the major part of the machinery and equipment associated with the coal handling is generally confined to the northern end of the shed, the opportunity exists for this to be retained and interpreted in situ. The capstan is, however, sited on the east side toward the delivery area in the south and should be retained in situ. An overhead crane, control cabin and grabs should be moved adjacent to the machinery to enhance the understanding and processes of coal delivery and handling for interpretation. The northern limit of the overhead crane's position should be such that it defines the functioning parts of the coal handling shed to the north.

Other elements associated with the coal handling shed include the overhead coal conveyor which provides a functional and visual connection between the Coal Handling Shed and the Boiler House; the next phase in the power generating process. These elements have an iconic quality in the visual identification of the function of the White Bay Power Station. Their configuration, form and surface texture have all been identified as having high significance to the community.

Although the coal handling shed itself appears to be in a relatively poor physical condition the machinery which it houses, with the exception of the hoppers and underground conveyors, is in good condition.

The assessed significance of the machinery and equipment associated with the Coal Handling Shed and external conveyor is such that they should all be retained in situ to enhance an understanding of the operation of the power station in its entirety.

Policy 1.5.2
The coal handling shed should be retained as evidence of one of the site's principal operational systems and conserved as such. The machinery and equipment should be retained in the northern part of the shed and an overhead crane is to be moved to define the space and to enhance the understanding and processes of coal handling for interpretation. The machinery and equipment is to be retained and conserved in situ to enhance an understanding of the operation of the power station in its entirety.

5.1.6 The Chimney Stacks and Ash Handling System

Of Cultural Significance Grade 1 (refer to Figure 3.8.2.1 for detailed significance rankings)

The chimney stacks have a strong visual association within the community of the identity of the White Bay Power House. The two extant chimney stacks, with the ash tower, are the reminders of the end process of the generation of electrical power through coal firing and steam raising. The intactness of this process has been significantly depleted by the removal of the precipitators and the induction fans as part of the site decontamination process. Although this depletion detracts from the overall integrity of the power station, those extant representative elements have the potential to contribute to an understanding of the final process of waste elimination in the generation of electrical power at White Bay Power Station. The connection provided by the overhead conveyor provides a physical link with the Ash Tower thus linking the

Figure 5.1.6.1
Chimneys
(Design 5 - Architects)

beginning and end of the process of electrical generation at White Bay, from coal delivery to ash waste. These elements have an iconic quality in the visual identification of the function of the White Bay Power Station.

The condition of the chimney stacks should not be a hindrance to their retention in situ and these should be retained and conserved as part of the visual identification of the place of White Bay Power Station.

In order to retain and respect the significance of the chimney stacks and ash handling system, and at the same time allow its adaptive re-use, the guidelines and policies below should be followed.

Policy 1.6.1
The two extant chimney stacks are a major contributing element to the visual identity of the White Bay Power Station and should be retained in situ and conserved and interpreted as an integral part of the significance of the power station.

Policy 1.6.2
The ash tower is a strong visual element in the identity of the power station and should be retained and conserved in situ and interpreted as part of the operational system of the place.

5.1.7 Boiler House

Of Cultural Significance Grade 1 (refer to Figures 3.8.2.3 & 3.8.2.4 for detailed significance rankings)

The Boiler House is a large masonry structure, the first floor of which is essentially a void broken up by walkways. The voids identify the location of the other three original boilers, while the upper floors, which had originally consisted of metal open-grid flooring, have been removed except where these are associated with the extant boiler and the coal hoppers. The magnitude of the internal space is such that there is enormous potential for adaptive re-use of this structure.

Figure 5.1.7.1
Boiler House Void
(Design 5 - Architects)

The significant elements of this building include:

- extant Number 1 Boiler and associated machinery at north end of space.
- extant Boiler House Control Room along west wall at first level compelete with fitout finishes and equipment.
- coal hoppers and associated conveyor and machinery along west side of space.
- evidence of original 1914 Boiler House along west wall.
- evidence of use and evolution and changes in technology and management in built structure, fabric and signage.
- perception and character of enormous space, particularly height, where Boilers Number 2,3 & 4 have been removed.
- steel framed structure defining location and support for extant and removed boilers.
- large steel framed glazed walls to east and south with wire reinforced obscure glass providing generous and even natural lighting throughout space, particularly in southern half.

The significant machinery and evidence of evolution and use is confined to the north and west and around the perimeter, the huge space they enclose is both an asset and an opportunity. Before the boilers were removed this vast space was full of machinery and open grid walkways. The significance of the space and the machinery could still be retained and respected if some of this void were once again filled with a machine-like structure. To assist interpretation and respect the significant scale and rhythm of the place, these new structures should be of steel and glass with no masonry.

Figure 5.1.7.2
Existing Boiler
(Design 5 - Architects)

The intent of any new floor space or structures in these areas should be to interpret the mass and voids of the original boiler machinery and their vertical continuity from floor to roof.

The voids in the floors could be closed to create a floor space which would provide an opportunity for a variety of uses. However those areas that were voids will need to be differentiated to indicate their locations. The original open grid upper floors could also be re-constructed or interpreted, however this should be executed in such a way that allows for an adequate physical and visual curtilage for an appreciation of the extant boiler and its interpretation. This could be achieved by retaining the void of Number 2 Boiler.

In order to retain and respect the significance of the Boiler House and at the same time allow its adaptive re-use, the guidelines and policies below should be followed.

5.1.7.1 Building

The following actions are recommended:

- Retain full height space at least in part and particularly within 2.5m of glass curtain wall to allow a sense of openness next to the glass wall and a clear visual separation between it and the new structure, at a similar scale to the removed machinery.
- Retain full height view of Number 1 Boiler by retaining void of Number 2 Boiler.
- Retain existing void between 1st level and underside of coal hoppers along west side in the positions of Numbers 1 and 2 Boilers.
- Retain all existing grated walkways and bridges.
- Retain Boiler House Control Room intact including fitout, equipment and signs and all finishes and its supply air duct and machinery above.
- Potential to fill centre of voids where Numbers 3 & 4 Boilers have been removed with new structure but retain clear or grated void for 1m on all 4 sides to edge of existing concrete cut out on 1st level (see Figures 5.1.7.1 & 2 above). Potential to extend floor plates beyond these void areas but without opaque partitions so that transparency is retained.
- Original grated voids around boilers can be interpreted by a number of solutions, including steel grates, glass (clear or frosted) mesh, voids etc.
- Potential to remove redundant concrete plinths and fixings on floors but retain evidence for location by marking out patch with incised line.
- Potential to floor over smaller, and parts of larger, voids but retain evidence by using different material – e.g. steel plate or steel mesh.

- Potential for daylight to penetrate full depth of space where machinery has been removed, particularly between "solid" areas of former boilers to be retained.
- Retain all walls (especially original 1914 Boiler House wall) as unpainted masonry. Retain all evidence of fixings and signage.
- All new surfaces to stand apart from existing surfaces and machinery by use of finish and colour. They must not overpower the existing work.
- New structures to be modern of steel and glass (no masonry) and clearly an insertion or addition.
- New structures inside this building should have a sense and aesthetic of being a machine-like structure.
- Surviving obscure glass should be retained and missing panes replaced by new matching glass.
- Up to 10% of area of glass curtain wall in 1958 section can be glazed in clear glass. This 10% is to be scattered in small areas, not exceeding 3 panes contiguously.

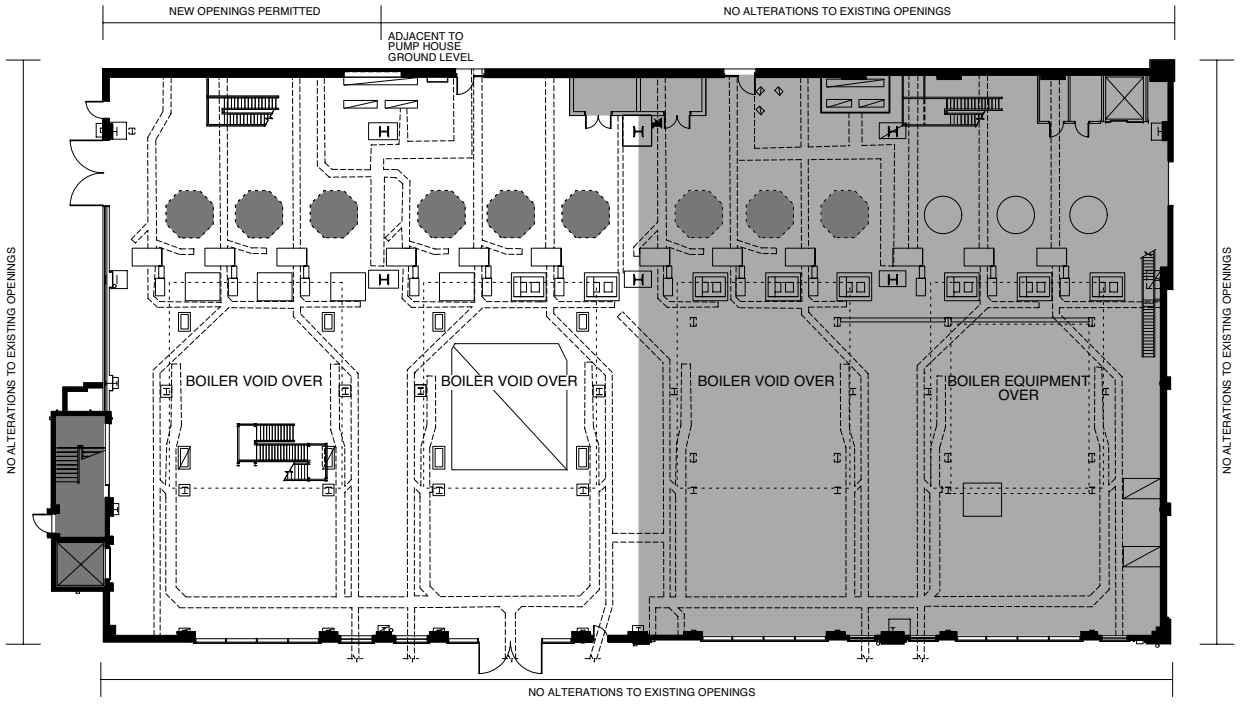
Policy 1.7.1
The Boiler House should be conserved and adapted in accordance with Policy 1.4.1.

Policy 1.7.2
The Boiler House is an exceptionally significant structure and space with exceptionally significant machinery, and it can be adapted for a new use or uses as shown on Figures 5.1.7.3 and 5.1.7.4 and as follows:

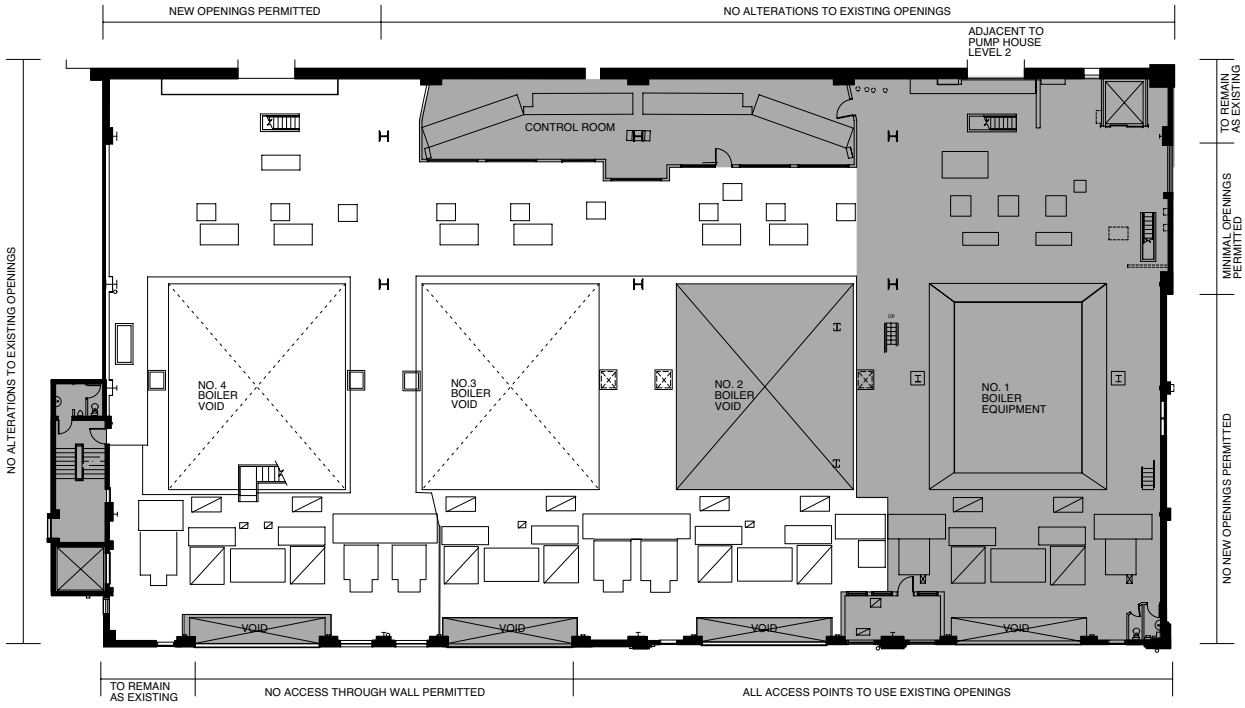
- *Retain full height space at least in part and particularly within 2.5m of glass curtain wall to allow a sense of openness next to the glass wall and a clear visual separation between it and the new structure, at a similar scale to the removed machinery.*
- *Retain full height view of Number 1 Boiler by retaining void of Number 2 Boiler.*
- *Retain existing void between 1st level and underside of coal hoppers along west side in the positions of Numbers 1 and 2 Boilers.*
- *Retain Boiler House Control Room intact including fitout, equipment and signs and all finishes and its supply air duct and machinery above.*
- *Retain all walls (especially original 1914 Boiler House wall) as unpainted masonry. Retain all evidence of fixings and signage.*
- *Opportunities for adaptive re-use are available through the insertion of distinctive fabric in the voids in the floors, and for additional floors to be added that respect and enhance the spaces around the extant boiler and associated equipment.*

See following Figures for diagrammatic expression of the above Policies.

Policy 1.7.3
Steel mesh walkways should be maintained in safe condition able to support pedestrian traffic.



BOILER HOUSE GROUND LEVEL PLAN



BOILER HOUSE LEVEL 1 PLAN

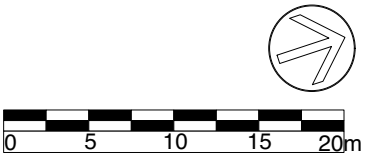
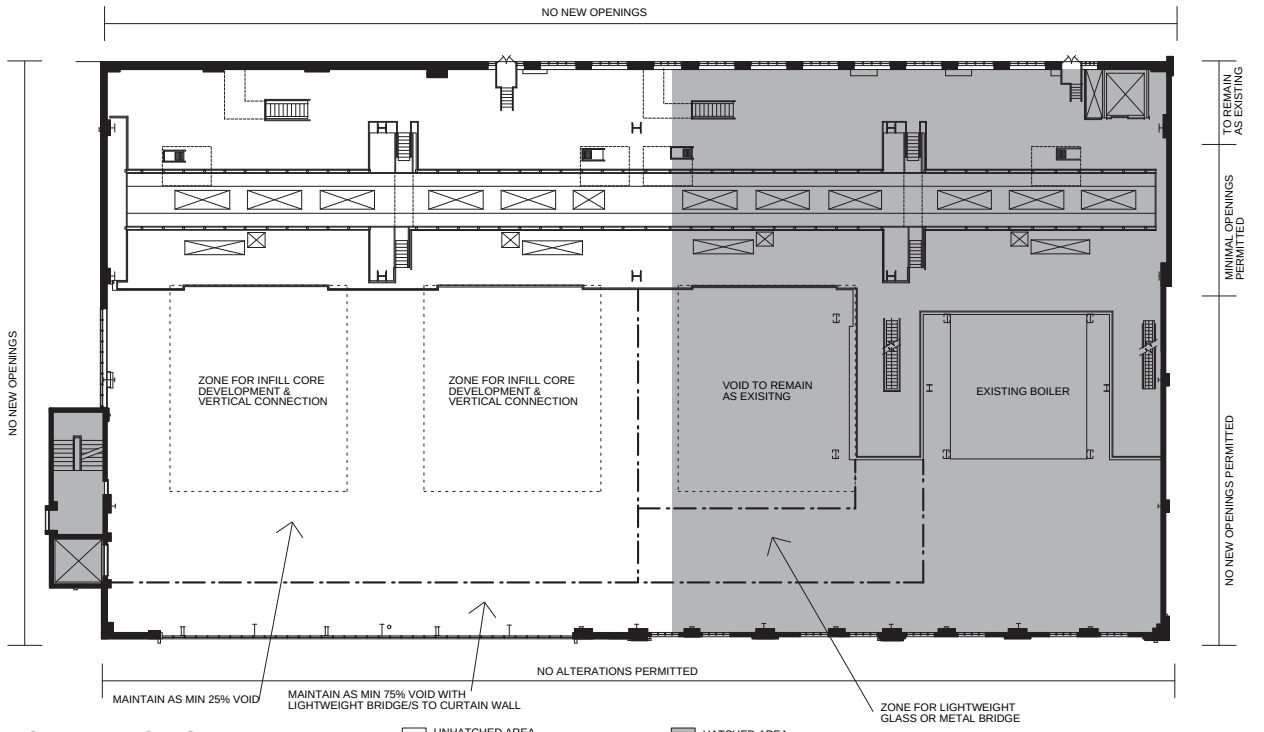


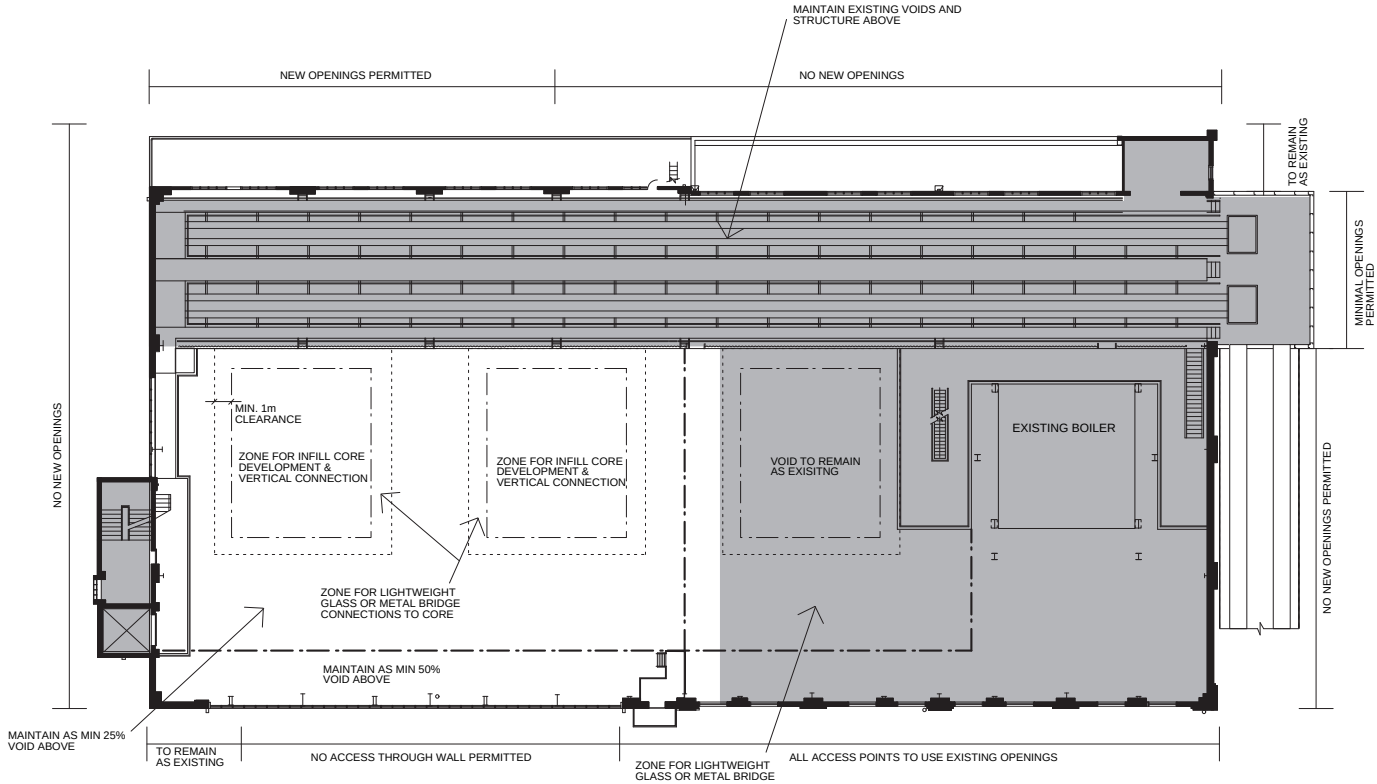
Figure 5.1.7.3
Areas of potential development
Boiler House



BOILER HOUSE
MEZZANINE LEVEL PLAN

UNHATCHED AREA
• MAINTAIN EXISTING VOIDS AND STRUCTURE ABOVE
* ZONE OF REMOVED BOILERS MAY BE ENCLOSED (GLAZED OR SOLID WALLS) MIN. 75% VOID FOR 1m CLEARANCE

HATCHED AREA
• TO REMAIN AS EXISTING



BOILER HOUSE
CONVEYOR LEVEL PLAN

UNHATCHED AREA
• BOILER OPENINGS MAY BE ENCLOSED (GLAZED OR SOLID WALLS) MIN. 75% VOID FOR 1m CLEARANCE

HATCHED AREA
• TO REMAIN AS EXISTING

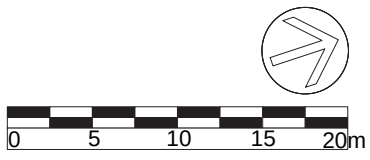


Figure 5.1.7.4
Areas of potential development
Boiler House

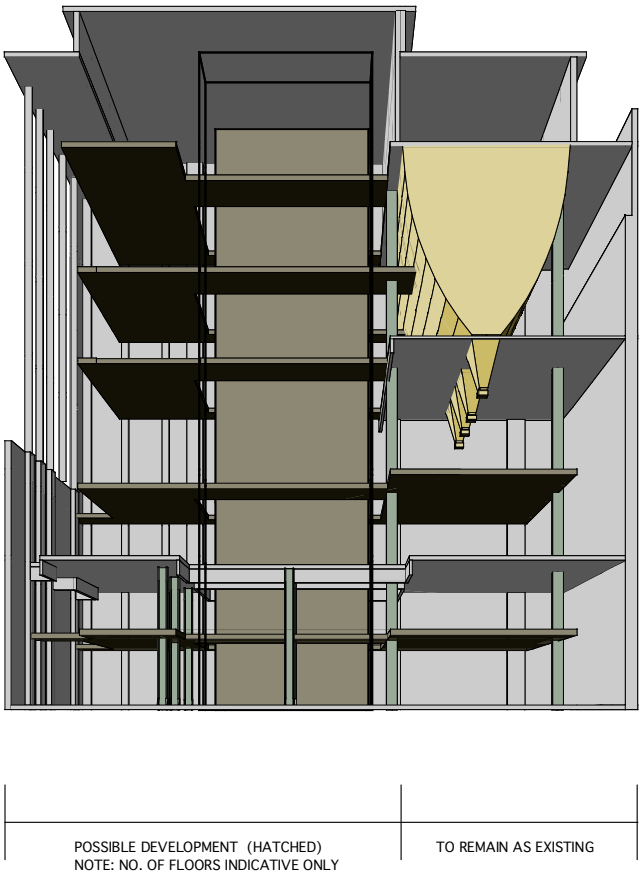


Figure 5.1.7.5
Areas of potential development
Boiler House

Figure 5.1.7.6
Areas of potential development
Boiler House

5.1.7.2 Machinery

The extant Babcock and Wilcox boiler, the pulverising mills and the various items of machinery and equipment associated with the steam raising and the coal handling systems housed in the Boiler House, occupy the northern section of the building. The boiler house control room retains its original fitout, equipment and finishes, and is centrally located against the west wall on the first floor. It should be retained intact in its entirety as a discrete total environment. The integrity of the Babcock and Wilcox boiler has been compromised by the removal of elements such as the furnace and the iron sheet and asbestos cladding. Although the removal of integral elements detracts from an understanding of the original function and process, it allows for a more vivid interpretation of the boiler operation. A visual and physical connection with the Turbine House is provided by the headers and piping against the west wall of the Boiler House carrying the steam to the steam high pressure feedwater pumps and the next stage in the operation systems.

The Boiler House and the machinery and associated equipment appear to be in a moderate or good physical condition. A conservation and maintenance schedule would return many elements to good physical condition. This would entail a detailed investigation of items of machinery and cleaning of the items and their environment.

The items of machinery and associated elements within the Boiler House contribute to the assessed significance of the power station such that no element can be removed without detracting from the overall significance of this structure and the power station.

Policy 1.7.3
The significance of the extant machinery and equipment housed in the Boiler House is such that no item may be removed without depleting the integrity of the whole. All machinery and associated equipment is to be retained in situ and conserved, maintained and interpreted.

5.1.8 Turbine Hall & Pump House

Of Cultural Significance Grade 1 (refer to Figures 3.8.2.6, 3.8.2.7, 3.8.2.9 & 3.8.2.10 for detailed significance rankings)

The Turbine Hall and Pump House compromise two parallel spaces, each the full height and length of the building. The Pump House is a narrow space between the Boiler House and the Turbine Hall but built contiguously with, and opening directly onto, the latter.

Policy 1.8.1
The Turbine Hall and Pump House should be conserved and adapted in accordance with Policy 1.4.1.

Figure 5.1.8.1
Turbine Hall Interior
(Design 5 - Architects)

5.1.8.1 Pump House

The Pump House floor levels align with those of the Turbine Hall with the tall void above the main turbine floor filled with pipe work and large rivetted iron water tanks supported on steel beams and associated platform areas. The various pumps, controls and water tanks remain in the northern part of the space, adjacent to the extant boiler house. However they have been entirely removed from the southern half adjacent to the now demolished second boiler house. The original 1920s roof profile survives in a damaged state over this southern section. This provides a narrow, soaringly high, space providing considerable opportunity for a creative use and infill structure. The roof to the northern section was replaced with a concrete slab in the 1950s work. The southern end contains the laboratories, accessed via the administration block and these overlook the Pump House at high level.

Access to the Gantry Cranes in the Turbine Hall is via ladders and platforms in the Pump House.

In order to retain and respect the significance of the Pump House and at the same time allow its adaptive re-use, the guidelines and policies below should be followed (refer to Figures 5.1.8.3 & 5.1.8.4 which further explain these policies).

The significant elements and qualities of the Pump House include:

North Half

- Significant machinery and components of the steam raising and feedwater systems, associated cranes and access platforms
- Dense configurations of structure and machinery
- Limited natural daylight except from north wall and openings to Turbine Hall
- All walls, structures and ceiling – painted

This northern section retains such a dense configuration of significant machinery that a new use other than interpretation within this area would be difficult to accommodate. However, access through the north end is possible at many levels and some small workshop or office type of activity may be possible as long as it fits in and around the machinery and does not obscure it or place it at risk.

The openings to the Turbine Hall and Boiler House at platform and lower levels should remain in their present configuration.

Policy 1.8.2
The northern section of the Pump House with its dense configuration of significant machinery provides little opportunity for a new use other than interpretation.

Existing painted finishes should be retained.

South Half

- All Machinery and pipework except for some workshop benches removed but evidence for this on walls and floors
- Soaring void space with remnant steel beams traversing space at high levels
- Limited natural daylight except from damaged or missing roof sheeting, various holes in east wall and opening to Turbine Hall at platforms and lower levels
- Painted wall surfaces in damaged condition
- Direct access to floor levels in Turbine Hall to west, and to ground level to east
- Access to Administration wing
- Laboratory overlooks from south end of space

The southern section offers considerable opportunity for adaptive reuse. It could be either retained as a single space with partial floors added within it, or divided into separate levels and spaces. The existing openings to the Turbine Hall should be retained and opened up where blocked. Limited new openings could be made at high level to the Turbine Hall but must respect the significance of the larger space. New openings could be made to the east (former Boiler House wall) and in the roof.

The visual relationship to the laboratory at the upper level should be retained and not obscured.

Policy 1.8.3
The southern section of the Pump House could be either retained as a single space with partial floors added within it, or divided into separate levels and spaces.

All finishes may be retained or removed.

5.1.8.2 Turbine Hall

The configuration of the Turbine Hall consists of a series of partial, or broken up floor spaces, some of which are mezzanines rather than complete floors, up to the main floor level of the extant turbo-alternator set. The space above this main turbine platform is completely open giving a uniquely large and long space of great aesthetic significance. The ceiling soars above with a series of three overhead gantry cranes.

Figure 5.1.8.2
Openings through to Turbine Hall
(Design 5 - Architects)

The voids to the north and east of the turbo-alternator set enhance the interpretability of the cooling water and power generation systems. The relationship of these voids to the rest of the space is very important.

In order to retain and respect the significance of the Turbine Hall and at the same time allow its adaptive re-use, the guidelines and policies below should be followed (refer to Figures 5.1.8.3 & 5.1.8.4 which further explain these policies).

5.1.8.3 Building

- Retain void above turbine platform level for full length of the Turbine Hall.
- Retain existing voids and platforms around and north of Unit #1.
- Potential to introduce vertical access (lift) within north void as long as main space is respected.
- Retain 1950 turbine platform. Potential to infill selected sections of voids where #2 unit has been removed with steel sheet to provide additional floor area if required. Clarity of original voids and all 1950s hand-rail sections to be retained.
- Retain remaining sections of earlier (lower) turbine platform (south of 1950 platform). Potential to extend this over void to south end of hall in new and different material, or to construct new at a higher level. Definition/evidence of existing voids to be retained.
- Retain evidence for removed plinths/fixings/hatches as Boiler House.
- Retain set of 8 large plinth blocks in situ at lower level, which once supported the condensers for Unit #2.
- Potential for new openings to Pump House and Boiler House south of #1 Unit below turbine platform level – also to open yard to west.
- Retain and respect rhythm of openings above platform level. New openings could be made while respecting rhythm.
- Retain window openings to Admin section.
- Retain projecting observation windows of original Control Room.
- Retain and respect original handrail details. If required add glass panels to achieve BCA compliance.
- Retain ability of at least 1 and preferably all 3 gantry cranes to operate along full length of hall for maintenance and adaptive use purposes.
- The northern-most crane should remain close to the No. 1 Turbine to enhance interpretation.
- Potential to temporarily divide hall space using curtain type partitions or screens suspended from gantry cranes, installed and removed as required. These may be of flexible or rigid material, transparent or opaque.
- The space from the bottom of the gantry crane to the roof line is to be left open at all times.
- If divided as above, such elements should not remain in place for more than a total of six months in each year.

- No partition or platform higher than 2200mm high to be placed on the existing platform levels and these always to be easily removable if required.
- Potential to construct higher level observation platforms along east, south and west walls, as long as these are clearly a discrete new element, attached to the wall, and extend no further than 2m into the void, and are below gantry crane level, to allow their continued operation.
- Potential to extend the 1950 turbine platform level along part of east, south and west wall as long as it is no more than 50% of remaining section of east or west wall.
- Potential to articulate voids at south end to increase experience of space and provide vertical access between levels.
- Potential to insert new levels and enclosed spaces below 1920s and 1950s turbine platform levels south of No. 1 turbine machinery.
- Remains of early light fittings and other fixtures to be retained in situ.
- Remaining areas of original tiling to walls to be retained in situ.
- Painted finishes to walls and structure to be repaired or repainted.

Policy 1.8.4
The Turbine Hall is an exceptionally significant structure and space with exceptionally significant machinery, and it can be adapted for a new use or uses as shown on Figures 5.1.8.3 & 5.1.8.4 and as follows:

- *retain void above turbine platform level for full length of the Turbine Hall*
- *retain 1950 turbine platform. Potential to infill selected sections of voids where #2 unit has been removed with steel sheet to provide additional floor area if required.*
- *retain remaining sections of earlier (lower) turbine platform (south of 1950 platform). Potential to extend this over void to south end of hall in new and different material, or to construct new at a higher level. Definition/evidence of existing voids to be retained.*
- *retain ability of at least 1 and preferably all 3 gantry cranes to operate along full length of hall for maintenance and adaptive use purposes.*
- *potential to temporarily divide hall space using curtain type partitions or screens suspended from gantry cranes, installed and removed as required. These may be of flexible or rigid material, transparent or opaque.*
- *potential to construct higher level observation platforms along east, south and west walls, as long as these are clearly a discrete new element, attached to the wall, and extend no further than 2m into the void, and are below gantry crane level, to allow their continued operation.*
- *potential to insert new levels and enclosed spaces below 1920s and 1950s turbine platform levels south of No. 1 turbine machinery.*

See following Figures for diagrammatic expression of the above policies.

5.1.8.4 Turbine Hall Machinery

The Parsons turbo-alternator set is a vital component part of the power generating system at White Bay. The significance of the turbo-alternator set and the associated and integral component elements within the Turbine House are such that no element may be removed without depleting the significance of the power house or detracting from an understanding of the process of electrical generation through harnessing steam.

The Pump House and Turbine Hall retains single representative items and elements associated with the cooling and feedwater systems and includes the condensers, the high pressure feedwater pumps, the condensate pump and sluice gates. Interpretation of the feedwater and cooling water systems would contribute to an understanding of the operation of the steam raising system. All of these extant items and associated elements are located in the northern section of the Turbine Hall. The configuration of the floor spaces

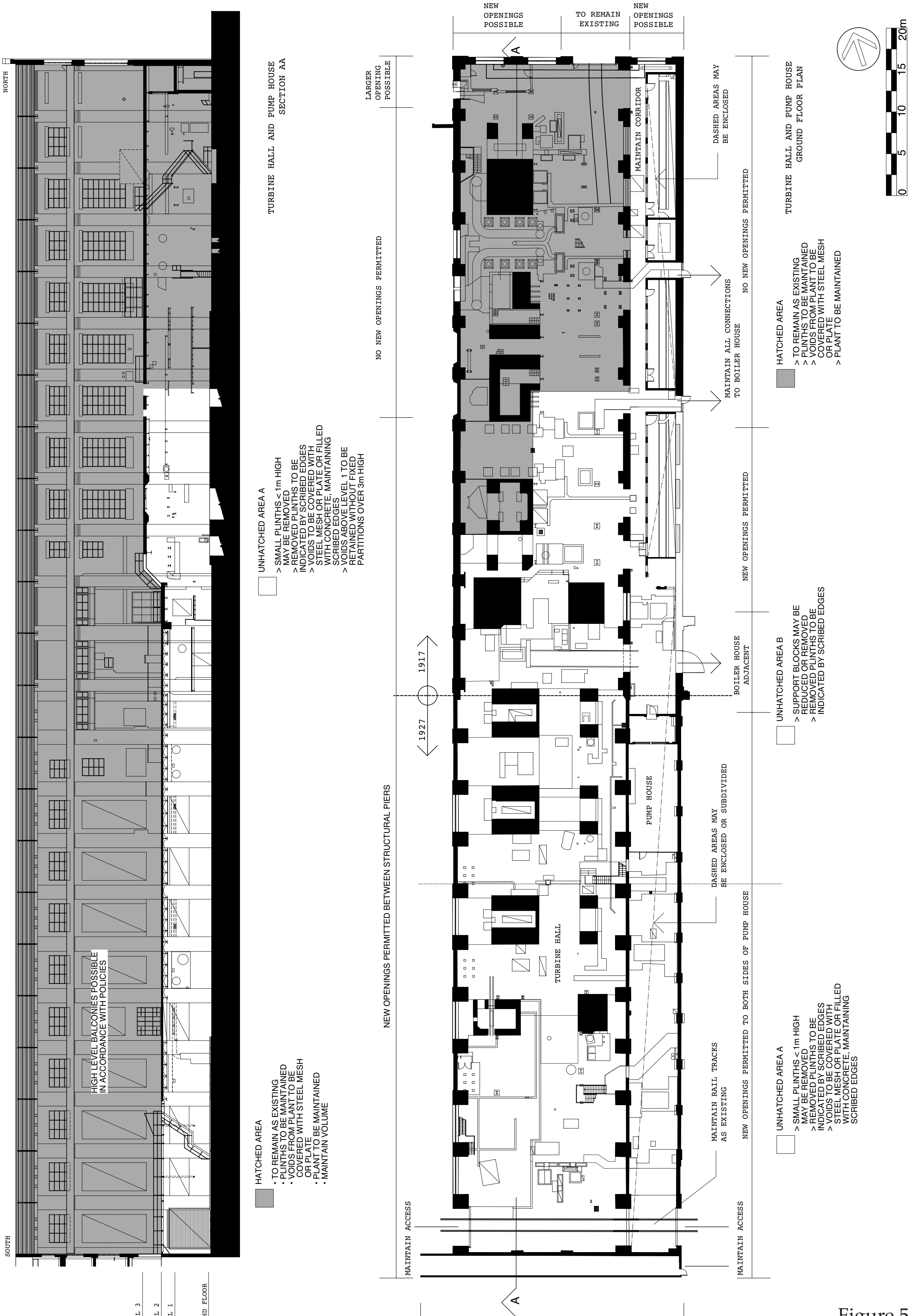


Figure 5.1.8.3
Areas of potential development
Turbine Hall

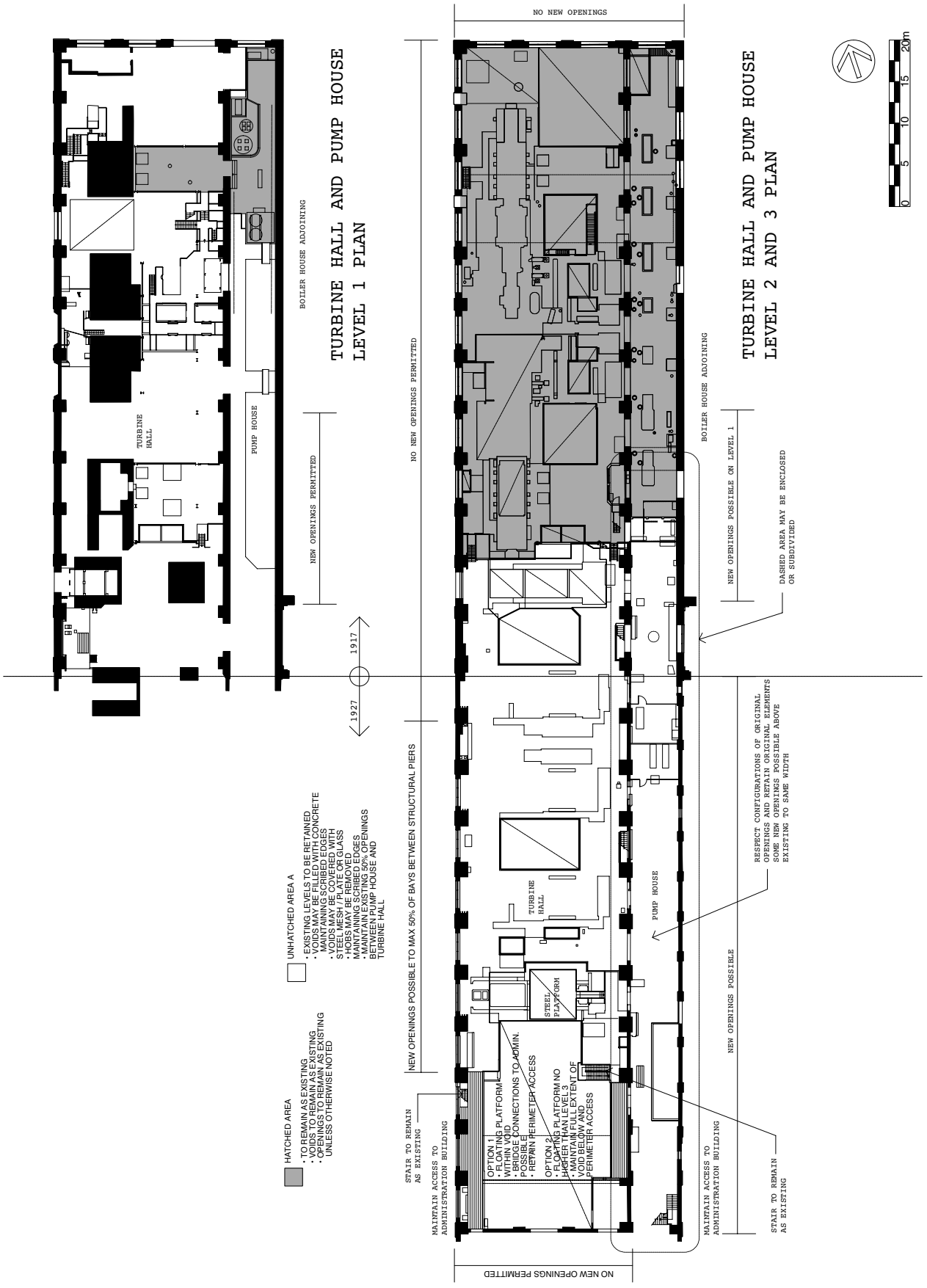


Figure 5.1.8.4
Areas of potential development
Turbine Hall

and voids is such that a relationship between the turbo-alternator set on the first floor and the condensers below on the ground floor may be readily interpreted.

Figure 5.1.8.5
Turbine Hall Machinery
(Design 5 - Architects)

At least one of the overhead gantry cranes should remain in the northern section so that the role in the maintenance regime of the machinery and equipment of the Turbine Hall may be readily understood and interpreted. To further enhance the interpretability of the machinery and to offer opportunities for future use of the building, a high mezzanine floor may be incorporated into future designs to overlook the turbo-alternator set. The mezzanine should respect the air space above the turbo-alternator set and recognise the voids through to the basement. This would have the potential to offer a clear view of the interrelationship with the condenser and associated elements. Both the cranes and the mezzanine have been discussed earlier.

The exceptional significance of the items of machinery and associated elements representing the operational systems housed in the Turbine Hall is such that these items should be retained in situ, conserved and interpreted.

Policy 1.8.5
The significance of the machinery and associated equipment in the Turbine Hall must be maintained by their retention in situ and conservation, maintenance and interpretation.

An interpretation of the cooling water system will not only contribute to an understanding of the processes of power generation at White Bay, but would also provide for an understanding of the relationship between the operations of the power station and its broader environment. The water for the feedwater system is derived from White Bay and returned after use. The physical connection is provided by the subsurface channels leading from the power station to and from White Bay. There is potential for enhancing this direct link between the operational systems associated with steam raising and the local community (which made use of the warm water for swimming) in the interpretation of the cooling water system as an integral part of the operations at White Bay Power Station.

5.1.9 Administration Block

Of Cultural Significance Grade 2 (refer to Figures 3.8.2.8 & 3.8.2.9 for detailed significance rankings)

From the completion of the 1920s extensions until the closure of WBPS, this area housed the administration and main staff facilities. Apart from steel lockers, lunch tables, bathrooms and the laboratories, very little significant fitout remains. Some significant spaces remain but in general these can be adapted for new uses. It is important in understanding the whole White Bay Power Station story that evidence for the use of these areas for administration and amenities is retained and respected. However this can co-exist with a new use. In order to achieve this, the guidelines and policies below should be followed.

The damaged and missing elements of the polished joinery in the Main Entry and public areas should be reconstructed to their original detail as this was the public "Front Door" of the whole station.

This original entry from Victoria Road should ideally be reinstated as a major entry. This could be associated with a new set-down and/or bus lay-by in the street as a means of making this entry more viable. This should be investigated further.

Evidence in the way of fixtures and fittings in the Laboratory should be retained for interpretation and may be available for some new and compatible use.

The relationship between these offices and the Turbine Hall and their large overlooking windows should be retained.

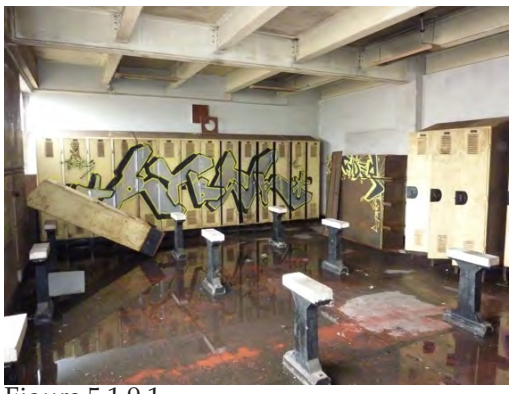


Figure 5.1.9.1
Admin Locker Room
(Design 5 - Architects)

Many of the steel lockers in this area are early and are worthy of retention, preferably in the former locker room. However, this may not be compatible with a new use, in which case they could be re-located to an appropriate place elsewhere in the complex. The lockers and the early shower complex demonstrates the importance of these amenities in the daily routine of the power station and are a direct result of the nature of early coal fired power generation. While not highly significant in themselves, they are an important part of the story and worthy of retention and, if possible, re-use.

The power output indicators in the former chief engineers office on the top floor are significant and should remain in situ. The remains of the early phone system are interesting relics of the operation of the place and are also worthy of retention, particularly in relation to the main offices on the top floor. Every effort should be made to retain surviving evidence and fittings in situ, even in the midst of new fittings for a new use. Notwithstanding this, retention of these elements should not prevent viable and appropriate new uses.

The existing floor, wall and ceiling materials and electrical fittings should remain exposed and functional wherever possible, particularly in public and circulation spaces and where significant fitout survives. Where these materials require replacement or repair as a result of damage or decontamination, the existing patterns and jointing configurations should be retained and respected.

The early fibro ceiling linings on the top level should if possible be retained and encapsulated by stabilisation or painting.

The 1927 glazed timber partitions also on the top level should, wherever possible, be retained in situ.

New wall openings can be made in accordance with the significance of each space and as indicated in Figures 3.8.2.8 & 3.8.2.9.

The former kitchen for the Canteen is housed in a somewhat incongruous timber structure which is attached to the south wall of the Admin Building. Although it appears to date from at least the mid-twentieth century, it has had many alterations and is not of great significance. It could be repaired and adapted for a new use or alternatively it could be removed. In the greater consideration of the major significance of the place it plays a very minor part.

Policy 1.9.1
The Administration Block should be conserved and adapted in accordance with Policy 1.4.1

This area contains some significant spaces and fitout elements but in general the spaces can be adapted for new uses.

5.1.10 1912 - 1927 Switch House

Of Cultural Significance Grade 1 & 2 (refer to Figures 3.8.2.10 & 3.8.2.11 for detailed significance rankings)

Built in two stages, the first of brick in 1912-1917, and the second of reinforced concrete in 1927, this structure has been much altered and reconfigured over time. The building's west and south elevations were, and still remain, one of the most visible elements from Victoria Road. It is the 'public face' of the power station.

It retains a small number of highly significant spaces including the remains of the original 1917 control room. Some highly significant machinery and fittings remain in situ from the power reticulation, electrical supply and auxiliary power supply systems.

In order to retain the significant elements and values of the Switch House while allowing its adaptive re-use, the following guidelines and policies below should be followed.

5.1.10.1 Building

Ground Floor

This floor retains no significant machinery except at the north end. Most of the interior receives very little day light. This level has opportunities for direct access to the switch house (transformer) alley to the east and access to the west for the northern half. Access to the west for the south half is prevented by the cable tunnel which runs along this side however the height of the space would allow access and light over the tunnel.

Figure 5.1.10.1
Switch House Interior
(Design 5 - Architects)

Apart from these areas which house significant machinery, all other spaces on this level may be adapted and reused including the presently flooded corridor on the west side of the north section.

The existing workshop area at the north end retains elements from elsewhere on the site as well as much written (on the walls) evidence of the earlier use. These should be retained in any adaptation and where possible the loose elements returned to their original location.

The 1917 lift and stair well

The 1917 lift and stair well is a significant element which should be retained, conserved and maintained as an operational element. Although the existing lift cage and enclosure no longer complies with the BCA it should not be removed.

As part of any use for the place this lift should be brought up to current compliance standards using glass linings or other clearly modern and preferably transparent elements to enable ongoing use. All old door plates, tiles, signs and display boxes in this area should be retained and conserved.

The projecting cable trays at the lower level of the stair may be cut back closer to the wall to enable compliance of this space for width of access. Evidence for their existence must be retained and where possible the loose elements returned to their original location.

The First Floor

This floor presently admits little daylight in some areas due mainly to alterations for later equipment. This is particularly the case in the northern section where concrete and steel

enclosures, their equipment now gone, are arranged along the centre of this wing. The northern most of these wire door and concrete enclosures with its circle of support blocks should be retained and the remainder of these enclosures could be removed or reconfigured if they cannot be adapted. Earlier window openings could be re-opened.

The tool store area in the centre of this floor retains much significant material. The earlier location and significance of the stored elements should be researched and understood before any decision is made to retain, dismantle or relocate this material. In the absence of such an understanding, it should be retained where it is.

The southern section of this level retains no significant material and can be adaptively reused.

The Second Floor

This floor retains, in part of the southern section, very early switch gear (from the late 1920s) which should be retained in situ, complete with all its attendant cabling, timber and glass covers etc. The existing chain wire enclosures should also be retained to the south and north of this intact space to retain the sense of limited access. The tiled floor should be retained and conserved.

The other elements in this southern second floor section which have the empty concrete enclosures for this switch gear should, if at all possible, be retained and adapted for a new use in a creative manner which responds to their configuration. Their complete removal should only be considered as a last resort.

The Third Floor

This floor retains the space and remaining evidence of the original control room and its layout. It also retains the more recent platforms used by the workers for carpet bowls. This should remain as a single space and the windows and relationship to the Turbine Hall retained. The timber and glass partitions to the west should also be retained along with the associated fitout where this is possible.

The roof structure shows evidence of numerous skylights and these could be reinstated if required.

The Motor Generator Room to the south of the original control room retains all of its significance machinery and equipment in situ. This space should be retained and conserved without alteration.

The Workshop and Battery Room adjacent retain evidence in the floor for both having once been battery rooms however the only remaining batteries are in the southernmost room. While these are somewhat isolated from other significant spaces, the batteries close to the motor generator room, situated on the lead floor with its sink and perimeter drainage allows a degree of interpretation which would be diminished if they were moved. Other uses could be introduced into this space as long as the batteries, sink and lead floor were retained and available for interpretation. The area retains some significant elements but could be adapted to house more use which preferably allowed the drills etc. to remain in place.

To the north of the control room is an intact WC and washroom with fine details – all dating from the first phase of the power station. If possible this facility should remain intact and functioning, changing as little as possible to achieve compliance and privacy.

The workshop spaces to the north retain timber block floors, suggesting that these were once covered with lead and used as a battery room. These spaces could be adapted for new uses.

The Mezzanine Floor – former cable room (under Third Floor)

This shallow space beneath the earlier control room can be adapted for new uses and configured as required.

The Third Floor - 1927 Entertainment Hall (access: Victoria Road entrance bridge)

The 1927 Entertainment Hall on the top level is a unique space and has the ability to interpret the social activities of the power station workers. The space, accessed only from the south end, off the original main entry bridge, retains its original perimeter seating, painted wall murals, light fittings, pin ball machine, stage and tea room area. There are some leaking roof and gutter areas but the hall retains a remarkable intactness from the 1950s period when it was regularly used for social activities.

This space should be retained and conserved, including its stage, painted murals, fittings and furniture. It is possible that it could once again be used by the community as a social gathering place and this should be encouraged. It may be adapted for use as a social activity space, either for private or preferably public use and kept in its existing configuration with its simple and bare finishes. Windows may be double glazed, skylights added, additional doors added to achieve compliance as long as the significant elements of the space are retained and respected. For example, some of the windows may be extended to the floor to access exits or balcony areas but the painted murals between them and the wall seating should be retained and conserved.

Figure 5.1.10.2
Entertainment Hall Interior
(Design 5 - Architects)

The open truss ceiling should be retained, as well as the lights and other fittings.

New services may be added to enable viable new uses.

The Switch House Transformer Alley

This space could be roofed with a clear material and the space adapted to house lifts, stairs and other equipment. Its sense of being a mechanical service space should be respected.

All access ways, stairs etc. should be retained and conserved and if possible made useable.

Policy 1.10.1
The 1912-1917 and 1927 Switch Houses should be conserved and adapted in accordance with Policy 1.4.1.

This building contains some significant spaces, machinery and fitout elements but in general the spaces can be adapted for new uses.

Policy 1.10.2
Significant spaces include the following which should be retained in situ and conserved as total environments:

- *The second floor retains, in part of the southern section, very early switch gear (from the late 1920s) and should be retained in situ, complete with all its attendant cabling, timber and glass covers etc.*
- *The Motor Generator Room to the south of the original control room on the top level retains all of its significant machinery and equipment in situ. This space should be retained and conserved without alteration.*

Policy 1.10.3
The Switch House Transformer Alley should be kept as an open space but could be roofed with a clear material and adapted to house lifts, stairs and other equipment.

5.1.10.2 Machinery

The Switch House and Control Room Machinery

Both the in-house electrical power system and the Control Room for the electrical reticulation system are located within the Switch House. The power reticulation system is central to an understanding of the extent of the operational capacity of White Bay Power Station, while the in-house electrical supply system retains elements from the earliest phase in the development of the power station.

The former control room overlooks the Turbine House through three floor-to-ceiling bay windows and, contains the switch house lighting board and an early motor generator set. To either side of the old control room are associated rooms. The main room to the north had been a battery room, as evidenced by the imprints of the battery legs in the brick floor, but which had subsequently become a store and workroom with shelving containing sundry dials, meters and associated equipment. To the south are the motor generator room, the workshop and, the battery room. The battery room retains the lead sheeting floor covering but has been depleted of all machinery and equipment other than a single battery unit (containing batteries 51-56), a sink and cupboard. The workshop has also been depleted of all meaningful equipment other than a pedestal drill, and the old No. 1 battery booster set. The motor generator room retains its total environment including the marble switchboard, the motor generators Nos. 3 and 4 and their associated switchboards.

The items and associated elements within the electricity supply and auxiliary systems encompass a wide range of functions and fabrics which are in variable condition. Items such as the sole extant battery in the Battery Room is in a poor to moderate physical condition, while the fabric of items such as the air compressor on the ground floor of the Switch House is in a comparatively good condition. All items associated with these systems do, however, require cleaning and conservation to restore them to a readily interpretable state. Some items within these systems, such as the No.1 battery booster in the workshop, have been moved from their original positions and may need to be relocated, as appropriate, for interpretation purposes. Items such as the air compressor on the ground floor of the Switch House may be relocated to a more convenient location where the function may be more readily accessible for interpretation purposes.

The depleted nature of the machinery and equipment scattered throughout the Switch House is such that these may be relocated in a manner that enables interpretation. The intact nature of the Motor Generator Room, on the other hand, is such that this is a total environment that should be retained in situ and intact.

The machinery and elements associated with the power reticulation and electrical supply systems contribute to the assessed significance of the electricity supply and auxiliary systems such that, although it may be possible to move or relocate some items, no item can be removed without detracting from the overall significance. Therefore, any such decision must be based on a thorough assessment of the impact of any proposed move.

Significant machinery and evidence survives at each level. They include the following:

- 1st Level – retain 1 surviving footing and enclosure for Reactor Tie and Tool Room area
- 2nd Level – retain remaining BUS switches and enclosures; adapt other area for new use
- 3rd Level – retain original Control Room, House Supply Switch Room and Battery Room. Other areas may be adapted.
- The Motor Generator Room is to be retained in situ in its entirety as a total environment. Other machines and associated equipment as well as assorted dials, meters etc in the Switch House should be conserved in situ to enhance the interpretability in the context of the in-house electricity supply systems.

5.1.11 1948 Control Room & Switch House

Of Cultural Significance Grade 1 (refer to Figure 3.8.2.12 for detailed significance rankings)

This addition was built as part of the major upgrade in 1948-1950 which installed the new boilers and turbines. It is therefore part of the slice of operational systems that survive from this period. The control room survives with its original equipment and cabling room intact. However, the adjacent switch house has been cleaned out.

In order to retain the significance of this building, the following guidelines and policies should be followed.

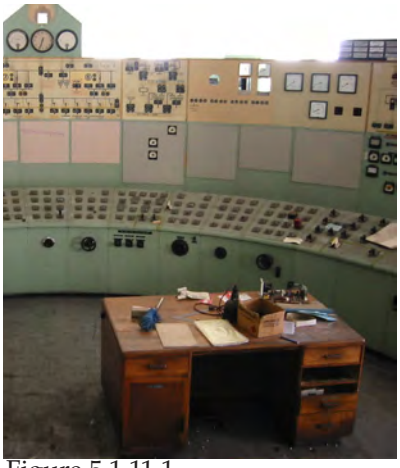


Figure 5.1.11.1
Control Room Interior
(Design 5 - Architects)

5.1.11.1 Building

1948 Control Room

This space retains machinery, fittings, furniture, documents, parts and finishes which are all in situ and in context. This space has considerable interpretation ability however it is presently at some risk of damage due to its fragility and its isolated location. Security to this area and the spaces below should be improved (refer to later section) and the spaces fully secured against unauthorised entry.

This space should be retained and conserved in its existing configuration with all machinery, fittings, furniture, documents, signage and finishes in situ. Those elements which have been temporarily relocated for safety should be returned to the space once it is properly secured. All documents should be copied, the place fully recorded photographically and these copies and records securely archived.

Elements such as indicator bulbs, knobs, handles etc. from the equipment in this space should also be returned or stored securely for later use.

Components which have been smashed or broken should be retained unless an appropriate replacement piece can be substituted for it.

The floor wall and ceiling finishes should be retained and conserved. Recent graffiti should be carefully removed.

Door and window elements should be retained and conserved in situ. The existing configuration of openings should be retained and no new openings should be made, however additional glazing could be added to improve climate control and security.

Cable Room and Tunnels

These spaces are an integral part of the Control Room above and retain the original and later cabling which connects it to the rest of the power station. The design and workmanship of the very early pyrotenax type cabling is of extraordinarily fine quality and should be retained with labels, tags and fixings in its entirety in these areas.

The recent grey sprayed paint should be removed very carefully so as to retain all tags, labelling and finishes with as little damage as possible. All other equipment, fittings and furniture should also be retained in situ. All finishes prior to the sprayed paint should be retained and conserved.

These spaces should be interpreted. No other use or function should be introduced unless it allows all of the existing elements to remain in site without risk of damage. Existing openings should remain unaltered (except to upgrade security) and no new openings made.

Rheostat Room and Stair

The rheostats should be retained in situ. The simple and bare qualities of this space should be respected however it could house other uses.

Upper Corridor and bathroom facilities

The bathroom facilities have been upgraded since they were built and their present configuration and fabric is not significant. These spaces could be reconfigured however the role of the main corridor linking the Control Room with the earlier Switch House and adjacent spaced must be retained and respected.

1948 Switch House – Lower Level

The electrical equipment at this level dates from the most recent power use of the site, as a substation. This equipment has not been identified as significant and could be retained to assist interpretation of this last phase of use or alternatively it could be removed and the space adapted for other uses

There is also an early mobile workbench at this level which may date to the earliest phase of power station use and should be retained on site to assist interpretation. It could be relocated to an appropriate and secure place elsewhere on the site.

The spaces themselves retain much graffiti from use however they may be reconfigured and new finishes applied. A complete early telephone and switch mechanism survives next to the stair and this should be retained and if necessary relocated to a position which will allow it to assist and strengthen the interpretation of more significant spaces.

1948 Switch House – Middle Level

While no significant equipment survives on this and the level above, the labyrinth and empty concrete enclosures for the former bus bars creates a visually exciting spaces which could and should inspire a very creative approach to adaptive re-use in these areas. Uses which require large amounts of storage or display could retain and make use of a large amount of the existing fabric.

The spaces could be creatively reconfigured with selective retention of some of this original fabric. This would be preferred to its complete removal.

The severed cables, with their oozing fluids along the west wall where these feed into the external power reticulation system present an apparently macabre image of the closure of the power station. These have interpretation potential but in such an isolated location this may prove difficult. Nevertheless a substantial section of one of these cables should be retained and used as part of the interpretation of the place in a more accessible and appropriate location.

1948 Switch House – Top Level

Like the level below this space retain the concrete enclosures for the bus bars but all of the equipment has been removed. This space could and should be adapted for reuse in a creative manner which preferably retains in some part some of these enclosures. The cable trays can be retained and reused, adapted or filled as required.

The finishes to walls and ceilings may be covered or renewed as required.

In terms of a creative approach to reuse, it would be desirable to retain the stair and at least part of its heavy mesh enclosures at this and the level below.

The rhythm and location of window openings should be respected however openings may be altered or enlarged if required. Evidence of the original configuration should be retained. Access may be made to new balconies or adjacent structures as long as the highly significant Control Room fabric and spaces to the north are respected.

Transformer Yard

This area is traversed by rail tracks for the movement of transformers and equipment and these tracks should be retained.

Figure 5.1.11.2
Transformer Yard
(Design 5 - Architects)

Each transformer was separated by a large brick wall, most of which survive. As an element in the landscape here, they strongly define and articulate this area. These blades should be retained but could be used as the extremity of new building envelopes which fill the spaces between the walls. The blade walls should still dominate and should project beyond the wall face or roof of new structures. These new structures should be lightweight, of steel and glass, and machine like in their character.

The floors of the existing transformer spaces may retain contaminated material and an added new structure over these may provide a solution to this.

The regular modular nature of the paving, as trench and tunnel covers, should be retained and respected in any new work.

The linearity and order of this area should be respected in any new work as well as the relationship of this area to the Switch Houses and Control Room, the distribution tunnels and surviving power poles.

Policy 1.11.1
The 1948 Control Room & Switch House should be conserved and adapted in accordance with Policy 1.4.1.

Policy 1.11.2
This building contains spaces and machinery of exceptional significance to White Bay Power Station as well as spaces which can accommodate considerable adaptation.

- *The 1948 Control Room retains machinery, fittings, furniture, documents, parts and finished which are all in situ and in context with considerable interpretation ability. Security to this area and the spaces below should be improved (refer to later section) and the spaces fully secured against unauthorised entry.*
- *This control room space should be retained and conserved in its existing configuration with all machinery, fittings, furniture, documents, signage and finishes in situ. It should be interpreted along with the cable spaces below, as a significant part of the power reticulation system and not adapted for new uses in situ. No other use or function should be introduced unless it allows all of the existing elements to remain without risk of damage.*
- *The Cable Room and adjacent Tunnels are an integral part of the Control Room above and retain the original and later cabling which connects it to the rest of the power station. They must be retained and conserved in their entirety except for the possible removal of the recent grey spray painting.*
- *The design and workmanship of the very early pyrotenax type cabling installation is of extraordinarily fine quality and should be retained in situ with labels, tags and fixings in its entirety in these areas.*

The transformer yard could be adapted to accommodate new uses as follows:

- *This area is traversed by rail tracks for the movement of transformers and equipment. These tracks should be retained as should the blade walls which originally separated the transformers. The spaces between these could be adapted for new uses.*
- *The linearity and order of this area should be respected in any new work as well as the relationship of this area to the Switch Houses and Control Room, the distribution tunnels and surviving power poles.*

5.1.11.2 Machinery

Control Room

While they are of exceptional significance, the machinery and associated elements of the Control systems are not conveniently located such that a representative slice may be readily identified for interpretation by elements retained in situ in close juxtaposition. Access to these spaces is presently circuitous; however, their configuration, scale and significance means that they cannot be relocated. The Control Room is located in a centrally placed square building attached to the west side of the Switch House by a connecting hallway which also houses the rheostats. The in-house electrical supply system and the auxiliary system are, however, dispersed at a number of locations throughout the Switch House.

Although the integrity of the later Control Room has been depleted by the removal of a number of elements, both as part of the decommissioning process and through vandalism, the Control Room is functionally evocative. This room should be retained in its entirety, including tags, personal paraphernalia as well as the equipment associated with its function. Innovative interpretative devices such as a soundscape, could highlight its significance.

5.1.12 Landscaping and Site Generally

The power station site is generally a degraded industrial landscape with numerous remnants of earlier site sheds and other structures, While in operation the only area which would have had any soft landscape elements would have been the area north west of the 1948 Switch House and Control Room and its adjacent Transformer Yards. This area was the 'front garden' of the Power Station and was planted with various fruit trees and shrubs, tended by the workers themselves. All other areas were hard industrial surfaces and service and storage areas.

Figure 5.1.12.1
North West Yard
(Design 5 - Architects)

Many industrial sites when undergoing adaptive re-use suffer from a process of well meaning domestication or 'greening'. While this may be appropriate in some areas, it is important that the strength and clarity of the industrial identity of the White Bay Power Station is not diminished or lost.

In order to retain and respect the significance of the place and at the same time allow its adaptive re-use, the guidelines and policies below should be followed.

Policy 1.12.1
The Landscaping and Site Generally should be conserved and adapted in accordance with Policy 1.4.1.

Policy 1.12.2
Those area of the site which originally acted as or housed storage or industry related facilities should remain as hard landscape areas. Soft landscaping should be confined to those areas which were landscaped as such i.e. north and west of the 1948 Control Room and Switch House and their attendant transformer yards.

New landscaping, elements and works should be inspired by and respond to the place and should incorporate interpretation of remnant building elements and removed structures. New work should also strengthen connections and links within and through the site.

Policy 1.12.3
New landscaping should be inspired by and respond to the place and incorporate interpretation of remnant building elements and removed structures.

Policy 1.12.4
Visual and physical links within and through the site should be respected and retained and may be enhanced by new structures and access ways.

Numerous cable and service tunnels traverse the site and link to areas beyond the site. These should be identified, plotted and assessed for condition and conserved.

These should be interpreted in some way, however issues of security, access, and contamination must also be considered and addressed.

These tunnels may be adapted and re-used in any new use as long as their significance and role in White Bay Power Station is respected.

Billboards and Signage

The existing billboards to the north west corner have been part of the streetscape and address of White Bay Power Station for almost 50 years. While billboards are often loathed as disfiguring elements and out of scale and character with their context, these ones are of an appropriate scale and their location is consistent with similar items on similar sites since the late 19th century. They sit comfortably in their industrial Victoria Rd context and do not distract from the White Bay Power Station. They provide both income for the site and an opportunity for interpretation. There are presently 3 billboards and it is recommended that one be used as an information/interpretation board for the Power Station. The other two could remain in use for general advertising.

Figure 5.1.12.2
External Billboards
(Design 5 - Architects)

A further billboard type of sign may be allowed on Robert Street opposite Mullens Street. This should be for interpretation only. No large signage elements should be attached to the building permanently and definitely none should break the existing skyline profile of the buildings.

Policy 1.12.5
It is recommended that one of the existing billboards on Victoria Street be retained and used as an information/interpretation board for the Power Station. The other two could remain in use for general advertising.

A further billboard type of sign may be allowed on Robert Street opposite Mullens Street for interpretation only and should not detract from the view of the Power Station.

No large signage elements should be attached to the building permanently.

No signage element should break the existing skyline profile of the buildings.

(Footnotes)
[1] Section 2.4 - Provisions, *Glebe Island and White Bay Master Plan*, Sydney Ports, November 2000

5.1.13 White Bay Hotel Site

The Hotel is closely associated with the development of the adjacent White Bay Power Station and other local industries.

The former hotel was built on top of an elevated platform formed by a retaining wall on the north, east and south sides. It was a prominent feature on Victoria Road and an important component of the White Bay Power Station identity. It addressed Victoria Road as its main frontage and had aesthetic merit as a good example of the Edwardian Free-style adapted to an early 20th Century hotel. The hotel was the last building in Rozelle on the Victoria Road approach to the City and signaled the junction with the City West Link which immediately followed.

The section of Victoria Road fronting the former hotel is used as a thoroughfare for pedestrians, bicycles and is a high frequency bus stop. Work has recently been completed on the upgrade of the pedestrian/bicycle path and bus shelter which includes a cantilevered bridge that encroaches over the cutting adjacent to the southern edge of the administration building and near the former Hotel site.

There may be opportunity for a new structure on the site with a similar landmark quality to the former hotel in a way that interprets the role it played in the approach sequence to the city. The structure itself, whatever its use, should be the main means of interpretation. This does not mean it should necessarily be a reconstruction of what has been lost but a creative approach to interpretation would be appropriate. Whatever its form, it should respond in some creative way to its context, including its relationship with the power station.

Any new use for the site should relate to the White Bay Power Station and Victoria Road and not turn its back to it.

Policy 1.13.1
Opportunity to construct a new structure on the site with a similar landmark quality to the former hotel in a way that interprets its role in the approach sequence to the city. Any new structure or use should sit comfortably in relation to the White Bay Power Station site adjacent and not dominate it.

5.1.13.1 Reuse of the Site

The site has dominant views to the north and east towards the power station as well as Glebe Island and the city beyond. The site may be suitable for the following uses:

- A landmark, pedestrian access to future proposed transport nodes or as a major entry to the White Bay Power Station site and Bays Precinct.
- A base for interpretation of the site/ precinct or as a public viewing platform for the White Bay Bays Precinct.
- A use which relates in a meaningful way to the use of the White Bay Power Station, preferably with public access to the site.

Policy 1.13.2
A reuse that is linked to the White Bay Power Station and allows public access to the White Bay Hotel site is preferred. Private uses such as for dwellings is least preferred.

5.1.13.2 Retaining walls and Archaeology of the former white bay hotel

Unfortunately, little is known of the internal configuration of the former hotel and minimal recording of the building had been undertaken prior to the fire that destroyed it. The site contains retaining walls on the north, east and south sides that provided a level platform on which the Hotel was built.

The retaining walls were apparently built up over several phases which extended the height and the area around the former Hotel. Original sections of sandstone are visible on the south side while later block work make up most of the wall on the north and east walls. Earlier sandstone retaining walls may still exist behind later block work walls and therefore should be treated as archaeologically sensitive.

While the site retains some heritage significance, the retaining walls on the north, east and south sides have some ability to demonstrate this significance. There is also potential for basement archaeology.

Policy 1.13.3
Alteration of the retaining walls may include partial removal of later sections, however, the reading of the surviving "platform" of the White Bay Hotel should be retained and remain identifiable.

Policy 1.13.4
The site (including potential for archaeology and the retaining walls) should be fully recorded (photographically and measured drawings) prior to any site disturbance that may involve partial removal or new structures.

5.2 The Burra Charter

Use of the Burra Charter

The future conservation and development of the place should be carried out in accordance with the principles of the Australia ICOMOS Burra Charter 1999 for the Conservation of Places of Cultural Significance.

White Bay Power Station has been assessed in Sections 2, 3 and 4 of this report, and it has been identified as having an Exceptional degree of cultural significance. It is generally accepted, and in many cases mandatory, that all work on such places should be carried out in accordance with the principles and processes of the Burra Charter.

Apart from the issues already covered by discussion and policies above, the Burra Charter emphasises a cautious approach to change, as well as the need for appropriate skills and expertise and the safe keeping of records and reports.

Policy 2.1
Any and all works to White Bay Power Station should be carried out in accordance with the principles and processes set out in the Australia ICOMOS Burra Charter 1999.

Policy 2.2
Spaces ranked of exceptional, high and moderate significance at White Bay Power Station must be fully recorded photographically for archival purposes before any intervention or works commence. Those spaces ranked as having only little significance require a general photograph only for archival purposes. (Refer to Heritage Office guidelines 'How to Prepare Archival Records of Heritage Items' and 'Photographic Recording of Heritage Items Using Film or Digital Capture'.)

Policy 2.3
A copy of this report and all reports and records, photographic or otherwise, relating to White Bay Power Station should be placed in a permanent archive and be available for public inspection. As a minimum, copies must be lodged with the Heritage Office, Leichhardt Council, City of Sydney Council and the State Library of New South Wales (Article 32).

Policy 2.4
All works to White Bay Power Station must be directed, supervised and carried out by persons with appropriate knowledge, skills and experience in the conservation and adaptation of such elements (Article 30).

Policy 2.5
The conservation and adaptive re-use of the White Bay Power Station must be based on a respect for the existing fabric, its past use, associations and meanings. This requires a cautious approach of changing as much as necessary and as little as possible (Article 3.1).

5.3 Condition of the place

An inspection was carried out on the structure by Hughes Trueman and Design – 5 in 2002 and a report prepared. Inspections were again carried out in 2010 and the 2002 report was updated accordingly. This report is found as Volume IV of this Conservation Management Plan.

5.3.1 Overview

The power station was originally designed for industrial use with facility to handle and store large quantities of coal and safely and reliably reticulate water, steam and electricity.

Consequently construction is robust and many components could be expected to have extensive reserve capacity for adaptive re-use.

In addition the facility is likely to have been well built and maintained. Consequently the majority of deterioration noted probably relates to the last thirty years or so since closure.

Much of the damage evident results from ingress of water from failed windows or roofs or from blocked or failed stormwater systems or drainage, as well as lack of regular maintenance. Site security is also an issue and much glass breakage has been due to vandalism.

The load capacity of all floors should be assessed for specific future use proposals. There has been significant deterioration in some areas of timber flooring due to ingress of water and termites. Such areas include the floor to the inclined conveyor shaft from Coal Loader to the Boiler House and the upper floor of the Administration Building.

Loss of cross-sectional area and section strength of steel columns is locally evident at some base connections due to excessive corrosion. This is significant in the Boiler House and Coal Loader. There is much evidence of corrosion to steel connections, roof and wall cladding, steel reinforcement in some concrete elements, and steel grate flooring. In addition, there are large underground areas which retain both structure and machinery but are now filled with water and suffering corrosion.

Guy ropes for the two chimneys should be immediately investigated to determine if repairs are required. The chimneys themselves could not be inspected as part of this report, and will require a specialised assessment with special access equipment.

Due to the replication of many items and types of defect in the power station, this report identifies both generic structural condition issues and specific issues. This section identifies and categorises the generic issues that occur throughout the site.

5.3.2 Structural Strength Deficiency

Steel Columns

Loss of cross-sectional area and section strength of steel columns is locally evident at some base connections due to excessive corrosion. This is especially significant in the Boiler House, Turbine Hall and Coal Loader. A number of the worst effected columns have recently been repaired with replacement of corroded material and coated with a protective paint system.

Concrete Slabs

The mezzanine slab in the Boiler House has holes punched in it, which may be the result of heavy impacts probably during removal of equipment. These voids have not only reduced the slab strength but also are a serious safety hazard.

Generally, due to the original design loads anticipated for the structure, concrete slabs would be expected to have sufficient capacity to withstand most future use options. Load capacity checks are not however within the scope of this report.

Several areas of slabs in the Turbine Hall have lost concrete cover to the bottom layer of reinforcement. While the slabs are currently robust, ongoing deterioration will eventually lead to loss of strength or failure

Guy Ropes and Shock System for Chimneys

Guy rope anchors from the chimneys to the Boiler House roof slab need detailed investigation immediately as the concrete in the vicinity of the anchors has badly cracked. The significance of this cracking is not known, however the consequences of failure may be serious. Elsewhere on site the anchors are vulnerable to vandalism and general wear. Whether the damping system is still operable is unknown.

Steel Window Frames

Windows on the North-West wall of the Boiler House have lost significant mullion strength due to corrosion. To temporarily increase strength, vertical mullions have been tied with timber members. Excessive corrosion of steel window frames is a general problem throughout the Boiler House, Coal Loader, Turbine House, Switch House and Administration Building.

Floor Grates

In localised areas in the Boiler House, floor grates have deflected excessively and have reduced bearing area onto the supporting beams. Steel beams supporting these floor grates appear currently to be structurally adequate but exhibit significant surface corrosion. Some of the grates themselves may have compromised structural integrity due to exposure and prolonged corrosion.

Water Tank

The concrete water tank attached to the inside face of the southern parapet of the Turbine House above roof level has developed excessively wide cracks and is severely affected by spalling. This requires immediate attention, as the condition of the tank has significantly reduced its structural capacity and there is the danger of collapsing material affecting those areas around and below it.

Figure 5.3.2.1
Failed Water Tank
(Design 5 - Architects)

5.3.3 Corrosion

Roof Beams and Columns

Corrosion of steel beams and columns is one of the critical issues. Due to a number of reasons including water ingress, exposure to weather, lack of maintenance etc. over 90% of the structural steelwork is affected by corrosion. Around 25% of the steelwork has lost sufficient cross-sectional area to affect strength. For example, first floor beams on the North-East side of Turbine House have lost significant section in the compression flange and the beams and columns supporting the first floor concrete slab on the east side of Boiler House have been similarly affected. The beams supporting the southern half of the Boiler House roof are severely corroded. Although surface corrosion is extensive, it is unlikely that a significant amount of steelwork will require replacement after treatment in accordance with this report (Volume IV).

Corrugated Metal Roof

Corrugated metal roofs of the Boiler House, Coal Loader, Conveyor Building, Pump House and Turbine Hall are severely damaged due to corrosion and failure of fixings. Over the years penetrations have formed within the roof that are impacting on the overall corrosion problem to the supporting structure below by allowing rainwater ingress. The exposure of these roofs to strong winds has accelerated their failure. Loose elements have been secured with strong netting but the water ingress remains unchecked.

Structural Connections

Structural connections throughout the Boiler House, Coal Loader and Turbine House are extensively rusted and need immediate detailed inspection and repair. Inspection of these connections show that many of the bolts are also heavily rusted and in future could become a structural strength deficiency issue.

Embedded Steelwork

Corrosion of steel embedded in brickwork, particularly in external walls is causing cracking

of the surrounding brickwork. External masonry walls of the Boiler House on the east side are the most affected.

Chimneys

Base plate and anchor bolts at the base of chimneys are affected by rust. These need to be treated for corrosion with ongoing painting maintenance in the future. We understand from site staff that some connections of the access ladders to the stacks may have failed. This is a significant issue since it may severely restrict access for inspection, maintenance and repairs.

*** Access of the stacks is outside Hughes Trueman's area of expertise and we refer to the Chimney Stacks Condition Assessment of 1995 referred to in Section 1.1.*

The inspection by Hughes Trueman did not include the interior or exterior of the stacks which would require specialised access equipment and should be carried out by a specialist. We have however included general observation in the schedules.

5.3.4 Cracking

Concrete Beams and Slabs

Steel beam-column frames are used throughout the power station except the Switch House, where reinforced beams and columns are used and are an addition at a later stage. A severe cracking problem is evident in the Switch House, especially at the east and west ends of the third floor in the beams and the wall.

The reinforced concrete frame and wall structure of the 1927 work is showing signs of corrosion at sills to windows and around frames, particularly at the south end of the Administration Building.

Masonry Wall

Cracking of masonry walls occurs in various locations around the site. In the Boiler House, the main reason for cracking of masonry walls is the corrosion of the steel beams that are bearing into the east and west walls at mid height. Extensive accumulation of rust on these beams has caused cracking. However, cracking of the Switch and Turbine Houses appears mainly to be due to temperature and moisture effects. Cracking is evident on the south wall of the Boiler House where the cracks are ranging up to 25mm in width. Cracking at other places includes the east wall of Turbine House and in the parapet on the north exterior face of the Turbine House.

5.3.5 Water Proofing

Galvanised Steel Sheet Roof and Walls

The galvanised steel roofs and walls need extensive treatment or replacement throughout the site especially the roof of the Turbine House and the walls of the Elevator Tower. Roof repair is an important and urgent issue that requires early attention. Rainwater ingress is making the corrosion problem worse and in addition to this, wind has the potential to lift off rusted wall panels from the Elevator Tower. This is not only causing damage to the structure and equipment but is also a safety hazard. Wall panels are heavily rusted and/or missing in the Elevator Tower of the Coal Loader. An opening in the north wall of Coal Loader, which used to be an entrance to the building, needs to be covered by sheeting. The roof of Turbine House is affected badly by corrosion and leakage. Missing roof panels are causing ingress of rainwater and allowing access to pigeons.

Stormwater

Leakage of stormwater pipes is an important issue in the Pump House and the south-east section of the Turbine House and the Administration Building. Due to the continuous leakage and build up of water, the timber floor on the third level of Administration Building, which overlies a concrete slab, has suffered extensive decay and much of it has collapsed. The box gutter over this area has failed completely and now directs roof water into the structure. Steel beams and columns in these areas are also severely rusted. Their constant saturation is leading to corrosion and if left unchecked and untreated will lead to failure.

Underground Areas

There are large underground areas which still retain both structure and machinery and are now filled with water. These areas should be permanently drained and all structures, machinery and fabric conserved and repaired.

Unglazed Windows

Unglazed windows are allowing water and pigeons into the building. Other than this, they are also a safety hazard as the left over sections of broken glass can fall off in windy conditions.

Until the building is put to new use the use of perspex panels (as is currently the case) to replace glass is a sensible precaution. Vandalism appears to be a primary cause of glass breakage.

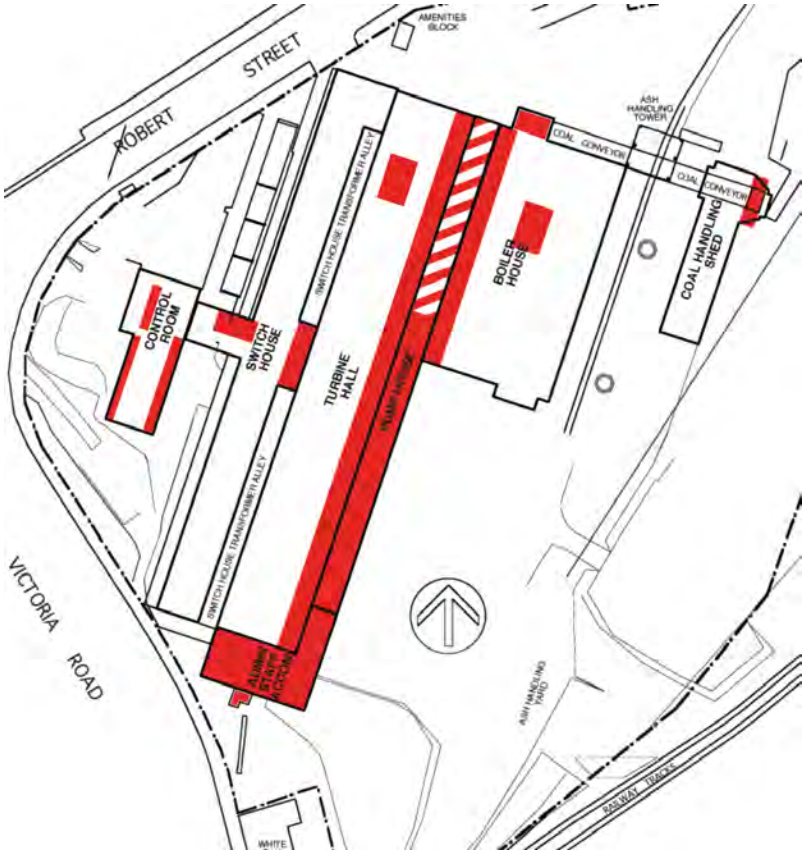


Figure 5.3.5.1
Plan of WBPS. Areas coloured red show areas for major concern in regard to water entry.

5.3.6 Concrete Spalling

Spalling is another critical issue. Spalling of the concrete slabs needs early attention to arrest ongoing deterioration of the reinforcement and slabs due to the corrosion. On the east side of the Turbine House under the Pump Room, the underside of the first floor slab is severely

affected by spalling. Reinforcement is exposed and is badly corroded. The precast roof panels of the southern section of the Boiler House are critically damaged due to spalling. Water is penetrating the roof membrane and also the precast structural beam panels. It is likely that the panels have insufficient cover for exposure to water. The spalling is highly dangerous as lumps of concrete can fall a great distance at high velocity to the boiler room floor. The area of ground floor directly beneath the affected panel has been generally fenced off, however the spalling has not been addressed. The north exterior wall of the Ash plant is also affected.

5.3.7 Safety Hazards

Floor Grating

Floor grating is an important issue in the Boiler House, Coal Loader and the Turbine House. In the Coal Loader, gratings are missing leaving pits uncovered causing a safety hazard. The covers on several pits around the site have severe corrosion and all gratings should be considered suspect. Steel floor gratings of the Boiler House have significantly lost strength at support edges due to corrosion. Areas of floor grates are missing in the Turbine House.

Figure 5.3.7.1
Walkways and Handrails
(Design 5 - Architects)

Timber Floors and Walkways

Timber is severely affected by leakage of stormwater pipes, missing stormwater pipes, ingress of rainwater through the roof and windows, and termites. Timber walkways on the second level of the Turbine House are decayed or damaged and need to be removed and replaced.

The timber floor on the third level of the Administration Building which appears to overlay a concrete slab is severely damaged by water and termites, which has resulted in the formation of voids in the floor

The timber floor of the Conveyor Area is severely affected by termites. Entry to this area should continue to be barred by physical barricades and signage.

Handrails

The condition of handrails is a safety issue in the Boiler and Turbine Houses. Missing and/or broken handrails occur on the upper floors of both buildings. These require immediate repair or replacement.

Handrails which may have been suitable for the use of the facility by trained adult staff are now inadequate for general public access. Handrails complying with current BCA standards are now required.

Open Pits

The Coal Loader and Turbine Hall are affected badly by this problem. Deep pits, some of which are full of water, need to be covered or fenced off with appropriate handrails. Some pits have temporary barricades and covers, however a long-term solution should be developed for the protection of these areas.

Trip Hazards

Trip hazards are an issue throughout the power station. Uneven floors, uncovered openings in the slabs due to the removal of equipment, absence of floor grates and debris on floors and walkways are contributing to this issue. In addition, floor tiles on the southern part of the second floor of Switch House are causing a trip hazard as well.

Headroom Clearance and Projecting Objects

Consideration of headroom clearance and projecting objects is important throughout the site but particularly in the Elevator Tower and on the upper levels of the Turbine House. In the Elevator Tower stairs are narrow and pipes project from the adjacent equipment.

Headroom clearance should be surveyed along all trafficable routes and projecting items should be, as appropriate, either be removed or be padded and marked.

Unsecured Materials and Items

Unsecured material and equipment needs attention. There are shackles and pulleys supported by unmaintained rope and wire slings at various locations.

Site Security and Vandalism

Site security will be an ongoing issue. Multiple access points to the buildings, unglazed windows and unfenced items are all factors. For example, foundations for the guy rope anchors of the chimneys on the east-side are located outside the fence and are vulnerable to vandalism. Until the site is occupied, security remains an important issue.

Since 2004 to present, there have been several instances of vandalism and attempted theft inside the Administration Building, Switch House and the Control Room. The buildings are particularly vulnerable at ground level and along the southern edges. Perimeter and internal security have been strengthened, however these should be further enhanced to protect this unique and exceptionally significant asset/ property.

5.3.8 General work

Waste Removal

General cleaning and waste removal is required. Presence of debris on the stairs of the Coal Loader and the floors of the Turbine House and the Boiler House is a safety hazard. In addition to this, concrete is piled up on the ground on the east side of the Turbine House and needs to be removed because it is a potential safety hazard.

Vegetation

Vegetation growth throughout the site needs to be controlled. For example, growth through the cracks on the roof and north exterior wall of the Turbine House needs to be removed so that cracks can be treated, and further cracking avoided. In addition, the vine on the south and west exterior wall of the building adjacent to the Control Room has to be removed and the wall and parapet should be inspected for cracks.

Floor Tiles

Floor tiles on the south side of second floor of the Switch House are coming off and causing a trip hazard. They need to be removed or repaired.

Bird Proofing

Bird entry (mainly pigeons) to all buildings is an ongoing problem. Roosting causes

damage to fabric and machinery and are a health hazard.

All parts of the building are vulnerable to roosting and excrement; however, particular attention should be paid to protecting un-covered machinery, spaces that contain a higher quality of fitout, and spaces and elements that use less robust materials. Temporary solutions to bird entry and roosting may include repair and sheeting over perimeter openings, and covering or wrapping machinery. All areas where birds have roosted should be cleaned. Most of the openings have been covered in the past with perspex sheet, synthetic fabric or netting, but their exposure to wind and weather and also vandalism has caused their repeated failure. This problem requires strong materials, strong and secure fixings and regular monitoring and maintenance.

Figure 5.3.8.1
Roosting inside entertainment room, top level of Switch House.
(Design 5 - Architects)

5.3.9 Machinery

The machinery which remains within the White Bay complex is largely in a stable but deteriorated condition. As much of the fabric of the machinery is steel, corrosion is an on-going problem and little maintenance has been carried out for many years. A program of catch-up repair and on-going maintenance is necessary to conserve these items for the long-term.

Evidence on site suggests that most of the key machinery elements were properly decommissioned and cleaned out. Therefore, it may only be necessary to turn some of these over and grease and oil them. Regardless of this, all covers should be removed, machines cleaned and dried out and then greased and oiled. Surface finishes, tags, signs etc should all be cleaned and conserved and preferably not refinished unless this is necessary for their survival.

Figure 5.3.9.1
(Design 5 - Architects)

Corroding elements such as the boiler, now fully exposed internally, should be stabilised and treated with tannic acid or similar product such as 'Emertan' and then monitored.

Ongoing issues to do with waterproofing and stormwater (refer to earlier section) are now threatening some machinery including machines in the Pump House, the turbine at the northern end of the Turbine Hall, the boiler in the Boiler House, and the main control room. Issues surrounding waterproofing and stormwater should be addressed as soon as possible or at the very least, affected machines covered over and protected.

A conservation and maintenance strategy will need to be developed for each individual machine, addressing its particular problems and issues.

As part of the conservation works for White Bay Power Station, a repair and maintenance program for historic machinery should be instituted.

It is not intended that they be put back in full working order.

The repair and maintenance programs need to be co-ordinated with each other to ensure that items awaiting repair are preserved from further deterioration until the requisite repairs can be effected.

5.3.10 Summary

The issues and works identified in the Hughes Trueman structural report (Volume IV) should form the basis of a prioritised work schedule and this should be progressively implemented to ensure the survival and structural integrity of White Bay Power Station.

All significant items of machinery and equipment must be cleaned and conserved in accordance with the findings of a condition assessment for each element, consistent with the recommendations in the Godden Mackay Logan report (Volume V).

Policy 3.1
The issues and works identified in the Hughes Trueman structural report (Volume IV) should form the basis of a prioritised work schedule and this should be progressively implemented to ensure the survival and structural integrity of White Bay Power Station.

Works should be broadly prioritised as follows:

1 Weatherproofing of roofs and repair of roof drainage system

2 Removal of failed concrete water tank over Administration Section

3 Birdproofing of all openings

4 Upgrading of site and building security

5 Weatherproofing of openings in walls

6 Structural repairs

All works should be carried out in accordance with the recommendations in the report and also in accordance with other policies in this CMP.

Policy 3.2
All significant items of machinery and equipment must be cleaned and conserved in accordance with the findings of a condition assessment for each element, consistent with the recommendations in the Godden Mackay Logan report (Volume V).

If the site is to remain dormant for an extended period of time, thus without viable reuse or investment, works of a temporary and cost effective nature should be carried out to ensure minimum standards of maintenance are witheld and to ensure no further damage or deterioration of fabric or machinery take place. For example, this might involve sheeting over window openings with polycarbonate material to avoid pigeon and weather entry until a permanent solution can be afforded.

Any temporary work undertaken should be reversible and generally in line with the principles and policies of this CMP. This type of repair and maintenance is allowed up to a point where a proposed reuse or investment allows for proper repair, reconstruction or interpretation.

5.4 Client's brief

The client's brief commissioned a full investigation into the Cultural Significance of the White Bay Power Station and the production of a Conservation Management Plan for the place. The purpose of the CMP is to guide future users and uses of the place with regard to conservation, adaptation, change and development, to ensure that the significant values of the place are retained and respected. It is required that this CMP will be presented to the Heritage Council of New South Wales for Endorsement. Once Endorsed, those policies contained within the report will be used by the Heritage Office to assess any proposal for change to the place. Thus, when conservation or new or adaptive work is being considered reference must be made to this report and its policies complied with.

5.5 Heritage listings

Listing on heritage registers is generally regarded as an indication of a item's heritage or cultural significance. Statutory obligations arising from these listings are also discussed in (the following) Section 5.7. Inventory sheets for each item are included in Appendix B.

5.5.1 NSW State Heritage Register

White Bay Power Station was listed on the NSW State Heritage Register (SHR) on 2 April 1999, number 01015. Refer to Section 5.6.1 of this CMP.

The present 1999 State Heritage Register listing followed the boundary for the site at the time. In June 2010, the White Bay Hotel site was acquired by the Sydney Harbour Foreshore Authority and is presently excluded from the SHR listing. It is the recommendation of this CMP that the SHR boundary is adjusted to match the revised property boundary, thus incorporating the site of the White Bay Hotel.

5.5.2 Draft Sydney Harbour Foreshore Authority S.170 Register

White Bay Power Station is listed in the SHFA S.170 Register entered 14 March 2000 and amended 2010.

5.5.3 Sydney Regional Environment Plan No. 26

White Bay Power Station is listed in the SREP No. 26 City West (Amendment No. 7 – Bays Precinct) as Item 11 (Map 4 Sheet 4) and Area 3 White Bay Power Station Area on Map 5 Sheet 3.

5.5.4 Australian Heritage Commission

White Bay Power Station is entered on the Register of the National Estate Number 019512. The Register is administered by the Australian Heritage Commission, a Commonwealth statutory body. The Register is legally binding only upon the Federal government and its agencies; entry of that property on the Register has no direct legal constraints on private individuals, private corporations, or on state or local governments.

Listing on heritage registers is generally regarded as an indication of a item's heritage or cultural significance. Where such listings have statutory obligations they have been discussed in (the following) Section 5.7.

5.5.5 National Trust of Australia (NSW)

White Bay Power Station was classified by the National Trust of Australia (New South Wales) on 26 March 1994. While the National Trust is a non-statutory body, its listings are highly regarded by government and other authorities. It is certain that the National Trust would be asked to comment on any development of the place, and their comments and recommendations will need to be addressed.

The Trust does not advocate rigid and unnecessarily restrictive development controls, with regard to listed items or places, but recommends that their significance - as part of the national, state, regional or local heritage - should be conserved through controls that allow, where necessary, for new and compatible development and associated works, which respect the character of the place or item through enhancement rather than conflict.

5.5.6 Leichhardt Council

As the White Bay Power Station is owned by the Sydney Harbour Foreshore Authority, it does not come under the jurisdiction of Leichhardt Council; however, it is within their municipality.

5.6 Statutory controls

5.6.1 NSW State Heritage Register (SHR)

The White Bay Power Station is listed on the State Heritage Register and therefore is subject to the provisions of the Heritage Act 1977 (New South Wales).

An item that is listed on the State Heritage Register means that its significance is at State level. Any major works proposed for State Heritage Register items, therefore, need to be assessed and approved by the Heritage Council to ensure that the item's heritage significance will not be adversely affected.

The listing of White Bay Power Station on the State Heritage Register also means that the Heritage Council becomes the joint consent authority for proposals for changes that may affect the White Bay Power Station's significance. This process is known as Integrated Development Assessment (IDA).

The Conservation Management Plan for White Bay Power Station should accompany any application for approval under the Heritage Act. The Heritage Council will then consider the information and polcies in the CMP when assessing the application.

If the Heritage Council endorses a Conservation Management Plan for White Bay Power Station and the owner prepares proposals that are in line with the endorsed CMP, approval by the Heritage Council of those proposals would be likely; however, formal approval under section 60 of the Heritage Act would still be required.

Archaeology

Regardless of whether or not the place is on the SHR, all archaeological deposits are subject to the Heritage Act and must be managed and dealt with in accordance with its provisions. Refer also to Standard Exemptions below.

Standard Exemptions

The Heritage Act allows the Minister, on the recommendation of the Heritage Council, to grant exemptions for certain activities which would otherwise require approval under the Heritage Act.

These standard exemptions are listed and summarised below. However, refer the Heritage Office's "Standard Exemptions for Works Requiring Heritage Council Approval" for complete details (Appendix F).

The following Standard Exemptions do not apply to anything affecting relics, items or sites of heritage significance to Aboriginal people or which affect traditional access by Aboriginal people.

Standard Exemption 1: Maintenance and Cleaning

Maintenance of an item to retain its condition or operation without the removal of or damage to the existing fabric or the introduction of new materials. It is a continuing process of protective care. Where these conditions are satisfied, no notice to the Heritage Office is

required.

Cleaning including the removal of surface deposits, organic growths or graffiti by the appropriate means and methods. Where these conditions are satisfied, no notice to the Heritage Office is required.

Standard Exemption 2: Repairs

Repair and upgrading of services where this does not involve alterations to or damage to or the removal of significant fabric. Where these conditions are satisfied, no notice to the Heritage Office is required.

Repair or replacement of missing, damaged or deteriorated fabric, which matches the existing fabric in all respects and does not involve damage to or removal of significant fabric. Where these conditions are satisfied, no notice to the Heritage Office is required.

Standard Exemption 3: Painting

Repainting previously painted surfaces where this does not involve disturbance or removal of significant earlier layers and employs the same colour scheme and appropriate paint type. Where repainting employs a different colour scheme and paint type from an earlier scheme, notice to the Heritage Office is required. Painting of surfaces that were previously unpainted is not exempt from approval under this standard exemption.

Standard Exemption 4: Excavation

Excavation or disturbance of land where an archaeological assessment has been prepared in accordance with the Heritage Council's guidelines, which indicates that any relics in the land are unlikely to have State or local significance or where the excavation will only have a minor impact on archaeological relics or where excavation involves only the removal of unstratified fill. A statement to and notification from the Heritage Office are nevertheless required. Where substantial intact archaeological relics of State or local significance, not identified in the archaeological assessment or statement by this exemption, are unexpectedly discovered during excavation, work must cease in the affected area and the Heritage Office notified in accordance with section 146 of the Act.

Standard Exemption 5: Restoration

Restoration of an item by returning significant fabric to a known earlier location without the introduction of new material (except for fixings) to reveal a known earlier configuration by removing accretions or reassembling existing components which does not adversely affect the heritage significance of the item. A statement to and notification from the Heritage Office are nevertheless required.

Standard Exemption 6: Development endorsed by the Heritage Council or Director-General

Minor development specifically identified as exempt development by a conservation policy or strategy within a conservation management plan endorsed by the Heritage Council or conservation management strategy endorsed by the Director-General. Where these conditions are satisfied, no notice to the Heritage Office is required. Development that is consistent with a conservation policy or strategy within a conservation management plan or conservation management strategy but not specifically identified as exempt development therewith, is not exempt from approval under this standard exemption.

Standard Exemption 7: Minor activities with no adverse impact on heritage significance

A statement to and notification from the Heritage Office are nevertheless required.

Standard Exemption 8: Non-significant Fabric

The alteration of a building involving the construction or installation of new fabric or services or the removal of building fabric which will not adversely affect the item's significance. A statement to and notification from the Heritage Office are nevertheless required.

Standard Exemption 9: Change of Use

Change of use or its curtilage or the commencement of an additional or temporary use that does not involve the alteration of the fabric, layout or setting of the item, or the use does not involve the cessation of the primary use for which the building was erected, a later significant use or the loss of significant associations. A statement to and notification from the Heritage Office are nevertheless required.

Standard Exemption 10: New Buildings

Subdivision or alteration to new buildings constructed since the item's listing on the State Heritage Register or the gazettal of an interim heritage order. Where these conditions are satisfied, no notice to the Heritage Office is required. Subdivision of the curtilage of the exterior of a building would still require approval.

Standard Exemption 11: Temporary Structures

The erection of temporary structures (with specified time restrictions for their use and removal) and where they have no adverse impact on significant fabric including views of and from heritage items. A statement to and notification from the Heritage Office are nevertheless required.

Standard Exemption 12: Landscape Maintenance

Landscape maintenance without damage or major alterations to layout, contours, plant species or other significant landscape features. Where these conditions are satisfied, no notice to the Heritage Office is required.

Standard Exemption 13: Signage

Temporary signage or interpretation signage or signage associated with a building's use (all with specified conditions) which does not adversely affect the heritage significance of the item or place. A statement to and notification from the Heritage Office are nevertheless required. Note, however, this standard exemption does not affect the requirements of other consent authorities or the need to satisfy any signage policies which may have been adopted by them.

Standard Exemption 14: Burial Sites and Cemeteries

The creation of a new grave, the erection of monuments or grave markers in a place of consistent character (including materials, size and form) which will not be in conflict with the character of the place, or an excavation or disturbance of land for the purpose of carrying out conservation or repair of monuments or grave markers – provided that there will be no disturbance to human remains, to relics in the form of grave goods, associated landscape features or to a place of Aboriginal heritage significance. This exemption does not apply to the erection of above-ground chambers, columbaria or vaults, or the designation of additional areas to be used as a burial place. A statement to and notification from the Heritage Office are nevertheless required.

Standard Exemption 15: Compliance with Minimum Standards and Orders

Compliance with minimum standards and orders relating to weather protection, fire prevention and protection, security and essential maintenance and repair to prevent serious or irreparable damage. Where these conditions are satisfied, no notice to the Heritage Office is required.

Standard Exemption 16: Safety and Security

Development or erection of temporary or emergency security measures to prevent unauthorised access or to secure public safety which does not adversely affect the heritage significance of the item or place. Submission of a structural engineer's certificate to the Heritage Office is required.

Standard Exemption 17: Movable Heritage Items

Temporary relocation of movable heritage items to ensure their safety, maintenance and preservation, conservation or exhibition, ensure health or safety, the need for a controlled environment for those items, or to protect the place. A statement to and notification from the Heritage Office are nevertheless required.

Anything done pursuant to the Standard Exemptions must be specified, supervised and carried out by people with knowledge, skills and experience appropriate to the work.

Policy 6.1
This Conservation Management Plan should be referred to the appropriate consent authority and the Heritage Office as part of any application for change or development. It should be accompanied by a Heritage Impact Statement which assesses the particular proposal.

Policy 6.2
All works to the place, whether they fall within the Heritage Council's standard exemptions or not, should retain and respect the cultural significance of the place, and be carried out by the appropriate licensed tradespeople with experience in conservation work and with advice from a heritage consultant.

Site-specific Exemptions

The Conservation Management Plan for White Bay Power Station acts as a basis for the development of site-specific exemptions. If the owner of White Bay Power Station intends to develop site-specific exemptions, this must initially be discussed with the Heritage Office.

Site-specific exemptions can only be approved by the Minister of Planning on the recommendation of the Heritage Council.

Minimum Standards

Owners of State Heritage Register items are required to achieve minimum standards of maintenance and repair. These are minimum standards to ensure that heritage significance is maintained. The standards are set out in a Regulation, and they relate to:

- weatherproofing;
- fire protection;
- security; and
- essential maintenance.

Section 170 Heritage and Conservation Register

Section 170 of the Act requires all government instrumentalities (in this case, Sydney

Harbour Foreshore Authority) to prepare Heritage and Conservation Registers with details of each item of environmental heritage under their jurisdiction, irrespective of whether or not it is already covered by another conservation instrument. Such registers are to be reviewed not less than once each year. At present, the White Bay Power Station is included on the Section 170 register.

5.6.2 The Building Code of Australia

The Environmental Planning and Assessment Act (EP&A Act) contains the legislation applicable to the development of buildings. The EP&A Act applies the Building Code of Australia as the technical requirements to be met in

- New buildings; and
- New building work only

The EP&A Act does not apply the BCA retrospectively to existing buildings. The BCA provides a set of measurable construction standards to be used in design and construction of new building work. This means:

- For an existing building where no work is being proposed, that the building is not subject to the BCA and therefore is not required by legislation to be upgraded whenever the BCA is amended.

- For an existing building undergoing alteration and/or additions, that the new work must comply with the BCA and the existing part of the building, subject to discretion of the approval authority, may require upgrade only on the basis of fire safety matter or where the development involves more than 50% of the building.

Refer to later Section 5.8 regarding the Disability Discrimination Act (DDA).

5.6.2.1 Building use classification

The zoning for the White Bay site under SREP 26 prohibits residential use (subject to the provision of heritage objectives) and encourages mixed use. On the basis of this the constraints imposed by the Building Code of Australia on residential use are not explored. Likewise Class 9 use is considered unlikely and therefore the BCA constraints for those uses are not explored.

The following Classes/uses are explored:

- Class 5 Office Building
- Class 6 Building for retail of goods and/or services ie. shops or restaurants
- Class 7 A car park (7a) or warehouse (7b)
- Class 8 Laboratory, factory, film studio
- Class 9b A building of a public nature, assembly building
- Class 10 Non-habitable structure ie Chimney stacks.

5.6.2.2 Structure

The compliance or otherwise of the existing structure of White Bay Power Station to modern structural building codes can only be assessed following more detailed structural analysis than the scope of this report allows. Refer also to the Structural Report in Volume IV. New structures within the complex or on the site will need to comply with the provisions of

Section B which refers to the Australian Standards for the various construction standards for different materials, risks and uses.

5.6.2.3 Climate Zone

For the purpose of the BCA, White Bay Power Station is located within Climate Zone 5

5.6.2.4 Fire Resistance

C1 Fire Resistance

Section C1 set out minimum standards for fire resisting construction based on number of storeys, type of construction and use.

For instance the reuse of the administration wing for office use requires Class A construction as it is four storeys. The requirements for Class A construction are set out in Section C.1.1 Table 3. The structural adequacy/integrity /insulation (Fire Resistance level or FRL) depends on the Use Class.

Office use will require internal floors to have 120/120/120 FRL. The existing concrete floors may already achieve this standard but will require testing. The timber floor to the upper floor is set over a concrete base and can be deemed an access floor under 3.2(e) and appears to be permissible.

Class 6 use requires FRL of 180/180/180 for this element.

Class 8 use requires FRL of 240/240/240 for this element.

The roof of the office wing requires for Class 5 use an FRL of 120/60/30. It is unlikely the present roof achieves this standard. Class 6 and 8 uses are more onerous. The roof can be retained if alternative deemed to satisfy solutions are found and can be supported, such as, the building is comprehensively sprinklered.

C2 Compartmentalisation

Section C2 sets out minimum standards for compartmentalisation.

Class 5, 6, 7, 8 and 9 uses cannot exceed certain areas and volumes subject to certain concessions.

Class 5:	Type A Construction area:8,000m2, volume 48,000m3. Type B Construction area: 5,500m2, volume 33,000m3
Classes 6, 7, 8:	Type A Construction area:5,000m2, volume 30,000m3. Type B Construction area: 3,500m2, volume 21,000m3

The volumes of both the turbine room and boiler room greatly exceed those volumes.

Boiler Room:	Area: 2,080m2, volume 65,000m3 (approximate).
Turbine Room:	Area: 2,780m2, volume 187,610m3 (approximate).

The concession set out in section C2.3(a) for large isolated building does not apply because of the requirement of an 18m clear curtilage around the building. Furthermore adjacent building blocks are within 6m and are taken into the calculation of compartment volume. The large and open volume of both the Turbine Hall and the Boiler House spaces are essential to the place and a Fire Engineering solution to the risks of the place and its proposed uses should be sought.

Section C2.4 in paragraph (a) sets out requirement for open space.

Section C2.6 sets out the requirements for glazing in relation to separation of storeys. The spandrel separation of the office block glazing meets the objectives paragraph (i). Should the major curtain wall volumes be sub-divided in separate stories the construction will need to meet the standards of paragraphs (ii), (iii) or (iv) with concessions in section (b). This entails:

- the replacement of glazing with spandrels of 60/60/60 FRL material of a minimum of 900mm, set a minimum of 600mm above the floor level or,
- setting this type of construction behind the existing glazing with additional fire proofing to gaps or,
- projecting the slab 1100mm beyond the external face of the wall or,
- sprinklering the building.

Section C2.7 sets out the requirements for fire walls.

Wall between compartments and different class use require a fire wall. The fire resistance of the fire wall is dependant on the use class for instance between class 5 use of Type A construction a wall of 120/120/120 FRL. Class 6 and 7b or 8 have more onerous requirement (refer Table 3 Section C.1.1). Should a fire wall divide uses, the higher FRL applies.

The important glazed link between the Administration Block and the Turbine Hall compromises the fire resistance between the required stair of the block and the compartment of the Turbine Hall. The retention of this glazed link to the Turbine Hall is of the first importance and a fire engineering solution to the issue of compartmentalisation should be sought.

Sections C2.8 and 9 set out the requirements for the separation of Classification in the same storey and in different storeys.

Sections C2.10 and 11 set out the requirement for the separation of lift shafts and stairways. For Class 5 use in the office block the present lift shaft will require separation from both the stairway and the accommodation. The fire resistance of the lift shaft needs to be upgraded to a FRL of -/90/90 for office if non load bearing. The present open lift within the stair well cannot be used as a lift if the stairway is a required stair/ alternative lift position required.

C3 Protection of Openings

Section C3 sets out minimum standards for protection of openings.

The Control Room is sufficiently distant from the Turbine Hall not to require protection of openings. Consideration of protection will be required to any development on the site of the Boiler House as that roof will probably be higher than that of the Turbine Hall.

Policy 6.3
Compliance with the various access, egress and safety requirements and the 'deem to satisfy' clauses of the Building Code of Australia (BCA) may diminish many of the values and qualities of the place by changes to the fabric or by additional compartmentalisation or isolation. A fire engineering assessment of the risk of the building and its proposed uses should be carried out and a solution formulated which retains and respects the significant attributes of the place.

Policy 6.4
Any problems or issues with compliance should be referred to the Fire Access and Services Advisory Panel (FASAP) at the Heritage Office for advice and assistance with achieving appropriate solutions to address the various BCA requirements.

5.6.2.5 Access and Egress

D1 Provision for Escape

D1.2 requires Class 2-8 buildings to have in addition to any horizontal exit 2 exits if as in this case the building has an effective height greater than 25m.

Where the compartment has more than 2 storeys (3 if sprinklered) then the exit has to be fire isolated.

No point on the floor must be more than 40m from an exit. These exits must be distributed as uniformly as practical but not less than 9m or further than 60m. The size of the exit is determined by the provisions section D.16 and D1.13.

D2 Construction of Exits

Detailed requirements for the construction of exit govern the width of required exits. However, in most cases the width of existing openings has been determined by machinery access which are wider than normal.

D3 Access for people with disabilities

Refer to Section 5.8.1.

5.6.2.6 Services and Equipment

Minimum standards are set down in Section E. The nature of these constraints do not substantially affect the use of the place.

5.6.2.7 Health and Amenity

F2 Sanitary and Other Facilities

Table F2.3 sets out the minimum requirements for these facilities based on the Classification use of the building.

F3 Room Sizes

F3.1 Class 5,6,7 and 8 requires a minimum room height of 2.4m for all rooms expect corridors which may be no lower than 2.1m.

F4 Light and Ventilation

Under the provision of F4.1 natural light is not required for Class 5, 6, 7 and 8 buildings. The building may be naturally or artificially ventilated.

5.6.2.8 Ancillary Provisions (Atria)

Section 3.1 sets out the criteria for the application of codes on atria. An atrium connects more than 2 (3 if sprinklered) storeys of which one is directly connected to open space. An atrium well must be a minimum diameter of 6m.

G3.3 requires bounding wall of 60/60/60 FRL set no further back than 3.5m from the atrium well. Atria require a minimum of 2 exits.

5.6.2.9 Special Use Buildings

Section H1 sets out the requirements for Theatres, Stages and Public Halls.

H1.2 sets out the requirement for separation or sprinklering.

H.1.3 sets out the requirements for the construction of theatres with proscenium walls.

In addition to the requirements of section H, NSW BCA appendix.

If the theatre forms part only of a building H 101.2 requires 60/60/60 FRL between the theatre and the rest of the building.

H 101.3 requires minimum foyer space equal to 0.25m2 for each person the auditorium accommodated.

5.6.2.10 Energy Efficiency

Section J of the BCA is intended to reduce the greenhouse gas emissions by buildings. Any reuse of the White Bay Power Station will need to satisfy the energy efficient criteria set out in this section.

Part J1 and J2 set out the requirements for building fabric and glass respectively, however, they are not applicable to unconditioned spaces in class 7, 8 or 9b class buildings or unconditioned atrium or solarium spaces.

For reuses that are not excluded from this section, an audit of the existing building fabric and glazing will be required and measured against Section J's Performance Requirements. Potentially, upgrading of insulation of building fabric is required as well as the introduction or performance glazing or external shading devices.

Part J3 sets out the requirement for sealing the building, particularly in spaces that are artificially heated and cooled. In this case, the requirement for sealing for air leakage, drafts etc may require upgrades to building envelope.

Part J5 sets out the requirements for air conditioning and ventilation systems.

Part J6 sets out the energy load (Illumination power density) for artificial lighting for various building uses. If existing fittings are to be reused, they may need to be fitted with energy efficient globes/luminaries.

Part J7 sets out requirements for hot water supply as well as swimming pool and spa pool plant.

Part J8 Depending on specific performance requirements, access must be provided to all plant equipment and components that require maintenance.

Where the floor area is greater than 2,500m2, as will be the case at White Bay Power Station, facilities must be provided to individually record the energy consumption of building services including air conditioning, artificial lighting, appliance power, central hot water supply, internal transport devices (including all vertical transport) and other ancillary plant.

5.7 Planning Issues

5.7.1 Generally

The White Bay Power Station site is located at the head of White Bay on the southern side of the Balmain Peninsula, on the eastern corner of the junction of Victoria Road and Robert Street. The City West Link Road intersects with Victoria Road just south of the site to form the major north-west gateway over Anzac Bridge into the Pyrmont Peninsula and Central Sydney beyond. The urban land use context of the site is indicated in Figure 5.7.1.1.

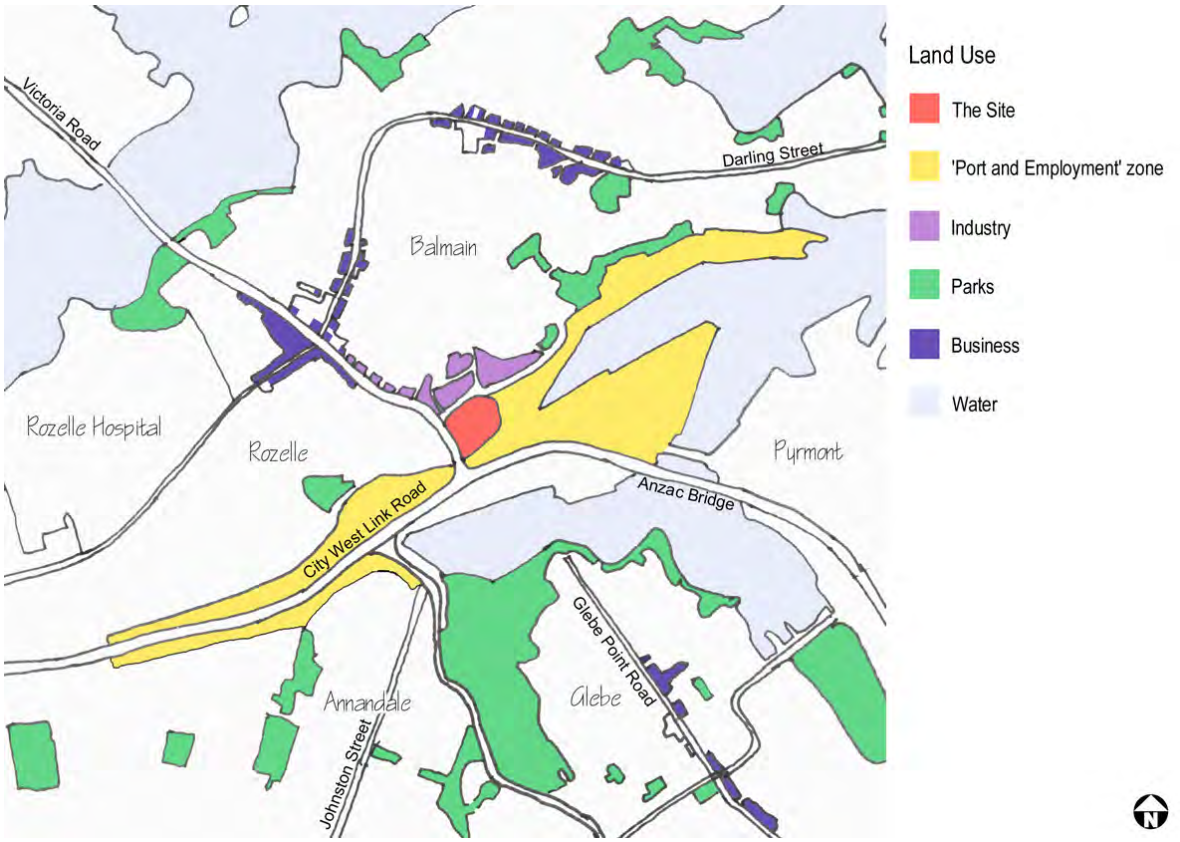


Figure 5.7.1.1 Land Use Context

5.7.2 The Bays Precinct

The power station and the former White Bay Hotel site forms part of a grouping of port and related structures, including the White Bay and Glebe Island container terminals, the Glebe Island silos, goods rail lines, ANZAC Bridge, the remnant Glebe Island Bridge and open port loading areas and cranes. This grouping of predominantly large scale structures, and associated large scale cargo ships mark a dramatic transition from low scale suburbia to the north and west to the mixed commercial, tourist and high density residential area of Pyrmont Peninsula to the south-east, and Central Sydney beyond. This active port area is collectively identified in Sydney Regional Environmental Plan No.26 as the 'Bays Precinct' (see Figure 5.7.2.1)

Figure 5.7.2.1 The Bays Precinct

Since the 2004 CMP, recent changes to land uses in the Bays precinct include:

- Car imports ceasing at Glebe Island in November 2008.
- Approval for the Sydney Metro from Central Station to Rozelle, including "potential for a future station at White Bay". While construction of the Sydney Metro is on hold, the planning approval is still current.
- Application for a cruise passenger terminal at wharf 5, north of the site which will include an access road passing to the east of the site and linking with James Craig Road.
- Ongoing development of commercial maritime activities at Rozelle and Blackwattle bays.
- Demolition of White Bay Hotel and aquisition of the site by SHFA.

These changes have provided a catalyst for re-evaluating the future of the precinct.

A process for local consultation for the future use and planning of the power station began in June 2009 with the establishment of the Community Reference Group (CRG). This was established as the first of a two stage process for community consultation. The CRG were made up of a diverse range of local community, business owners, government organisations and others to inform a set of draft planning principles for the area. The second stage of the consultation was to publicly exhibit the draft planning principles for comment and feedback from the community. This feedback will be used to finalise the principles.

On 1 March 2010, the CRG made their submission to the Minister of Planning, outlining objectives for the Bays Precinct which provide the framework for more detailed principles. The following is an outline of objectives developed:

1. *No more one off, ad hoc planning decisions by State Government or other planning authorities. All future planning and development decisions relating to the Bays Precinct to be on the basis of the agreed Principles and an integrated strategic plan for the whole Precinct incorporating a long term (c20 years) vision.*
2. *Establish public good, not private benefit as the overriding driver for future planning decisions for the Bays Precinct. Protect remaining public ownership of foreshores and harbour from further alienation by sale or long-term lease for private use and restore headlands and heads of bays to the public.*
3. *Open much more of the foreshores to the community and provide, wherever possible, continuous foreshore corridors for pedestrians and cyclists. Restore the headlands and heads of bays to the public as opportunity arises. Maintain safe access to the bays for passive water based activities (rowing, dragon boating, kayaking, sailing)*
4. *Recognise the Bays' significant maritime and industrial history in planning decisions. Conserve all heritage items and, where feasible, provide for adaptive reuse of significant structures.*
5. *Provide for local distinctiveness and character. Given the high residential density of surrounding areas, ensure planning decisions have the minimum possible adverse impact on existing residents and businesses.*
6. *Ensure no new activities or developments are approved without simultaneous provision for the necessary transport infrastructure- including public transport. Prohibit approval of long-term activities that will result in increased traffic congestion within the surrounding suburbs.*
7. *Exclude private housing from direct foreshore frontage and restrict housing to a lower order priority within the Precinct.*
8. *All built form is to be of excellent design, on a compatible scale with the adjacent neighbourhoods and is to contribute to a high quality public domain.?? Views, including views to landmarks, to be conserved and where possible, expanded.*
9. *Create a high profile for cultural and artistic activities as an integral and significant aspect of the Precinct's character*
10. *Maintain a contemporary 'working harbour' character for the Precinct and support other employment opportunities including green R&D and creative industries (e.g. incubators, artist studio space)*
11. *Incorporate best practice sustainability principles in all development and ensure that all uses enhance the sustainability of human and physical ecology in waterways and foreshores.*

All objectives have relevance to the WBPS site, with special attention paid to items (4), (8), (11) which could have direct reference to the form, shape and design for any new use.

In addition to the above principles, some of those involved in the Bays Precinct CRG produced a document titled 'The Future of the Bays Precinct – Sydney', dated March 2010. This document was not part of the CRG brief but was produced voluntarily by CRG members as "something tangible" from the nine months of consultation. The document sets out seven strategies for action that, while not repeated here, set out a framework for *"keeping the character of each of the Bays, stimulating new employment and living opportunities, and provide a new, exciting and attractive area for the local population, all of Sydney and beyond."*

'The Future of the Bays Precinct – Sydney' views the White Bay Power Station as a major focus for urban renewal of the bays precinct. It recognises the importance that any renewed use will make to the precinct, particularly in White Bay and Blackwattle Bay area.

"The location of the White Bay Power Station makes it prominent in many views into and out of the Bays Precinct. The revitalisation, activation and illumination of this as a landmark building can greatly enhance its role within the city's waterfront landscape."

The report envisages the White Bay Power Station as a *"mix of public / cultural, educational or research, business workspace and retail uses can act as a catalyst for renewal process." The area immediately surrounding the White Bay Power Station could be a major intersection f*or up to four public transport networks including light rail, a new ferry wharf, local and regional buses and potentially a future rapid mass transit system (metro). The report sets out proposals for building locations, parks and open space areas.

In February 2011, Sydney Harbour Foreshore Authority released its 'Bays Precint Report on Outcomes of Stage 1 Consultation Process'.

The report concludes that in future planning for Bays Precinct the following considerations need to be addressed:

- Bays precinct is the last deepwater berthing area in Sydney Harbour under NSW Government ownership and control
- priority should be given to land uses that are dependent on a land / water interface i.e recognise Bays Precinct's ongoing role in Sydney maritime economy
- future land uses need to have regard to how Bays Precinct can strengthen and enhance Sydney's role as a global city
- future land uses need to integrate with an knit back to surrounding communities and businesses with enhanced accessibility
- all future development should incorporate enhanced traffic and transport infrastructure
- foreshore land should be retained in public ownership
- public access to the waterfront and increased open space opportunities should be maximised

An important outcome of the Stage 1 consultation process was support for the retention and adaptive reuse of White Bay Power Station with a preference for community/ cultural uses, incubator industries and some suggestions on renewable energy opportunities.

The Foreshore Authority commits to fiving detailed consideration to the findings of the Conservation Management Plan and to exploring what steps can be taken to adance proposals in the short to medium term for adaptive reuse of the Power Station.

5.7.3 Surrounding Landmarks

Given the large scale context of the Bays Precinct, several structures/landforms therein form prominent visual landmarks recognised well beyond the immediate locality. In addition to the power station itself, such landmarks include White and Rozelle Bays, ANZAC Bridge and the Glebe Island Grain Silos.

Figure 5.7.3.1 ANZAC Bridge and the Glebe Island Grain Silos viewed from the south east side of the White Bay Power Station site. (Design 5 - Architects)

5.7.4 Surrounding built form and land uses

The site is a discrete urban 'island', distinct in use from surrounding land uses.

5.7.4.1 North

To the north of the site across Robert Street is a contained industrial precinct of warehouse and light industrial uses, beyond which is the residential suburb of Balmain. Most of Balmain, including the properties immediately north of the site, is within the Balmain Conservation Area pursuant to Leichhardt Local Environmental Plan 2000.

Figure 5.7.4.1
View from Victoria Road across Robert Street looking east (Design 5 - Architects)

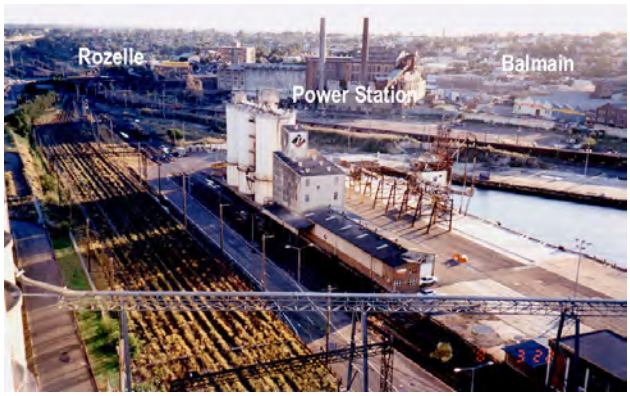


Figure 5.7.4.2
The power station viewed from on top of the Glebe Island grain silos (Source unknown)

5.7.4.2 West

Immediately to the west of the power station is the former White Bay Hotel site. The White Bay Hotel was formerly identified as a heritage item listed on the Leichhardt Local Environmental Plan 2000. This site has now been cleared, however, the retaining wall that formed a level plinth on which the Hotel was constructed is extant on the east and south sides. Adjacent to the south retaining wall is a concrete pedestrian bridge overpass. Further west, across Victoria Road, is the predominantly low rise residential suburb of Rozelle, part of which is within the Balmain Conservation Area pursuant to Leichhardt

Local Environmental Plan 2000.

Figure 5.7.4.3
View looking south along Victoria Road
(Design 5 - Architects)

Figure 5.7.4.4
View looking north-west from within the site (Design 5 - Architects)

5.7.4.3 *South*

Immediately to the south of the power station are goods railway lines serving the Bays Precinct and the City West Link Road, both of which are within the Port and Employment Zone under SREP 26 – City West (see Section 5.8). Further south, across the City West Link Road is land within the Waterfront Zone under SREP 26, which adjoins Rozelle Bay, across which is the suburb of Glebe.

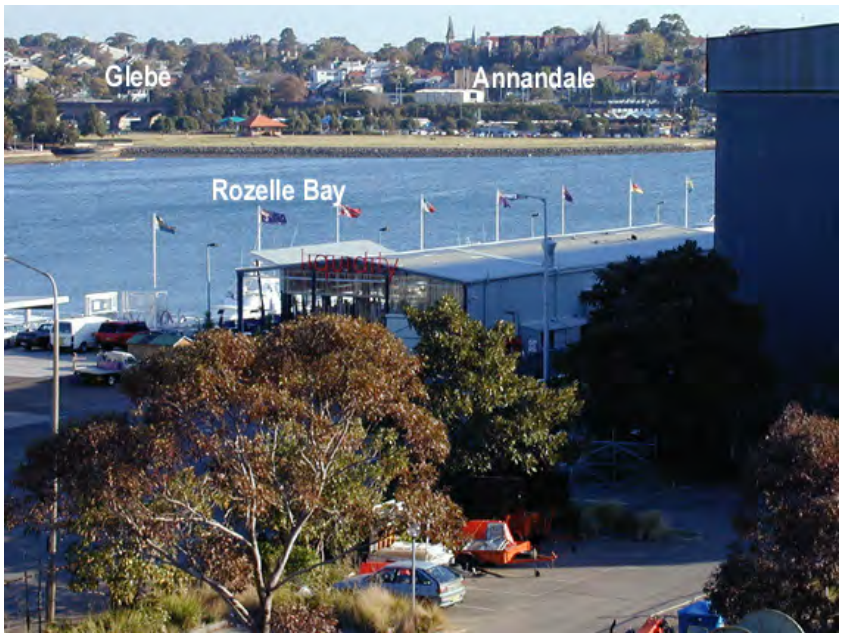


Figure 5.7.4.5 Rozelle Bay viewed from the north (Source unknown)

5.7.4.4 *East*

To the immediate east of the site is the Glebe Island and White Bay Master Plan area. The master plan area, which has a total land area of about 40ha, forms a crescent around White Bay and incorporates an active port water frontage of 2.1km.

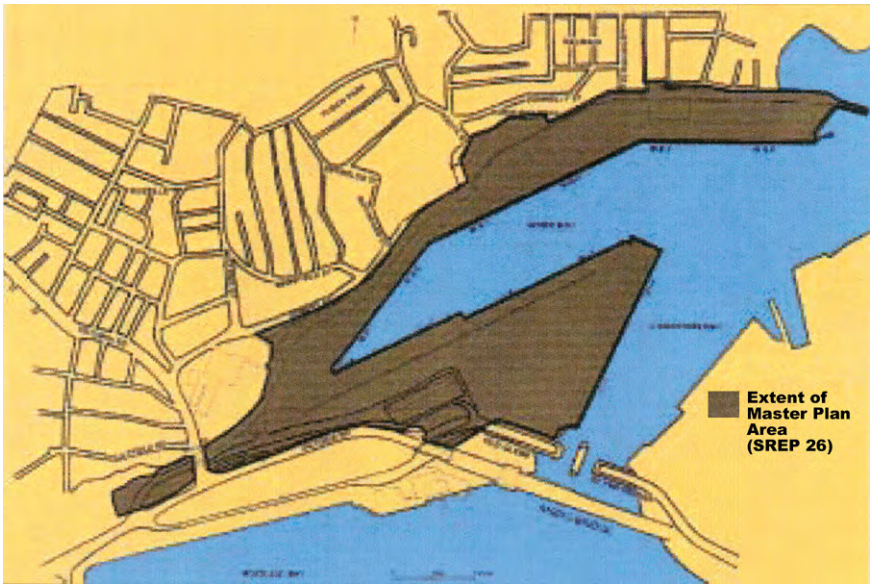


Figure 5.7.4.6 - Glebe Island and White Bay Master Plan area

Source: Glebe Island and White Bay Master Plan (Sydney Ports Corporation, 2000)

While a master plan has not been prepared for the power station site, the Glebe Island and White Bay Master Plan has been adopted for much of the rest of the White Bay and Glebe Island area.

The Glebe Island and White Bay Master Plan was adopted by the Minister for Planning, Dr Andrew Refshauge pursuant to SREP 26 , on 23 May 2000. The plan provides a vision and planning controls for ongoing port use of the area.

In summary, the area is planned to continue as an active shipping port. Being owned and controlled by the State Government since 1901, the area is currently used to cater for container handling and to break bulk cargo (ie timber, paper, motor vehicles and steel) and dry bulk cargo (ie cement, sugar, aggregates etc). For many years, Glebe Island was home to car imports destined for the Sydney market. This use ceased in November 2008 when car imports were relocated to Port Kembla. Large amounts of Glebe Island are now vacant, although these berths continue to service temporary uses that require deepwater access.

While the amount of active shipping has decreased, Glebe Island will continue to accommodate its working harbour function, at least until the current leases expire.

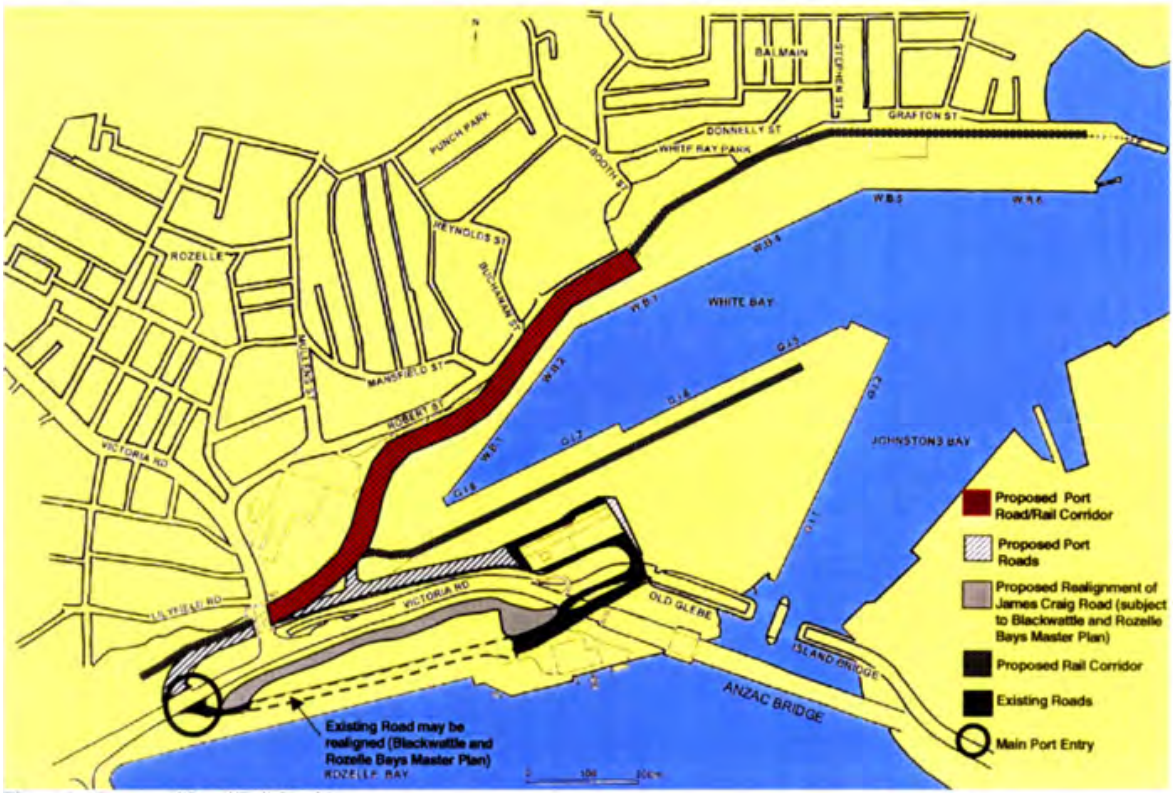


Figure 5.7.4.7

Figure 6 from the Glebe Island & White Bay Master Plan 2000 showing proposed transport routes in and around the site

Source: Glebe Island and White Bay Master Plan (Sydney Ports Corporation, 2000)

The Master Plan considers views and neighbouring sites when determining building zones and makes specific mention of White Bay Power Station as one of the landmarks. This landmark is considered particularly in the view panoramas from the water between Pyrmont Point and East Balmain.

The Master Plan stipulates a maximum building height for much of the area in the vicinity of the Power Station at 12 metres (see Figure 5.7.4.8 below). It is important to note that all the proposed maximum building heights specifically exclude silos "because of their unique built form, historical association with the ports" The Master Plan further states" silos may be located anywhere in the Port subject to assessment of views to and from the Port".

The Master Plan identifies setbacks and building zones for two warehouse buildings (each of up to 10,000 m^2 in floor area and 12m maximum height) and a 6 to 7 level parking structure of 15,000m^2 and up to 25 metres in height, to generally reflect the footprint of the silos demolished in the 1960s. (see **Figures 9** and **10** in the Master Plan).

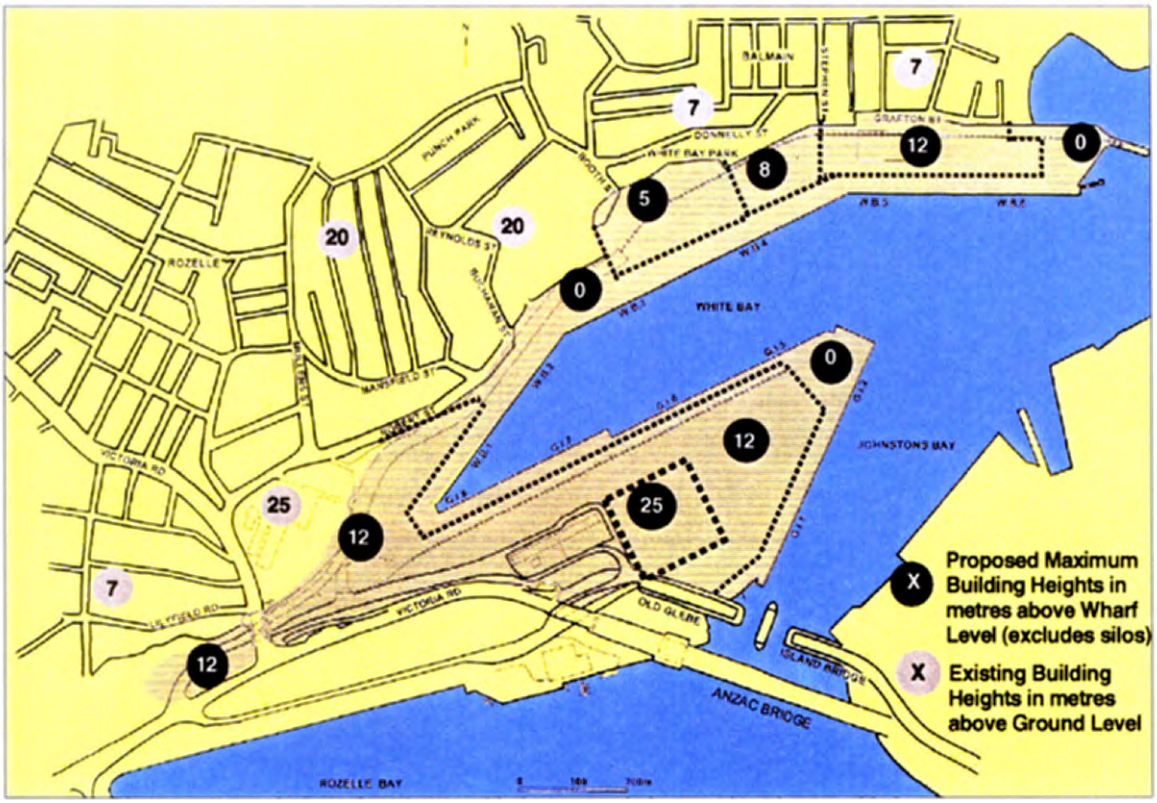


Figure 5.7.4.8
Extract from The Glebe Island and White Bay Master Plan illustrating proposed building zones and approximate building footprints. The dotted area is the general area in which the building can be sited.

Source: Glebe Island and White Bay Master Plan (Sydney Ports Corporation, 2000) - Figure 10

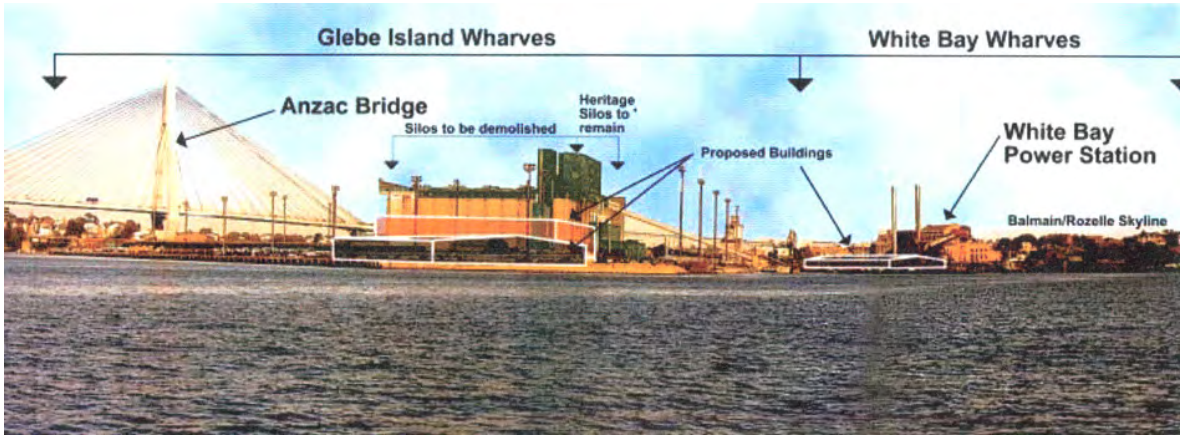


Figure 5.7.4.9
Extract from The Glebe Island and White Bay Master Plan indicating building envelopes within the master plan area. *Source: Glebe Island and White Bay Master Plan (Sydney Ports Corporation, 2000)*

The Master Plan provides for an internal Port Link Road and continuing use of the existing rail line connection through Rozelle Yard to service the port. The Ports Improvement Program provides for a principal entry at the north side of the James Craig Road intersection with only emergency access from Robert Street.

Pursuant to the Customs Act 1901, the wharves at White Bay are "Customs Areas", ie. a secure zone with authorised access only. This area is subject to further negotiations with the Sydney Harbour Foreshore Authority with regard to their plans for the Rozelle Marshalling Yards. However, the plan also indicates public pedestrian routes, including a route along the boundary between the master plan area and the power station site.

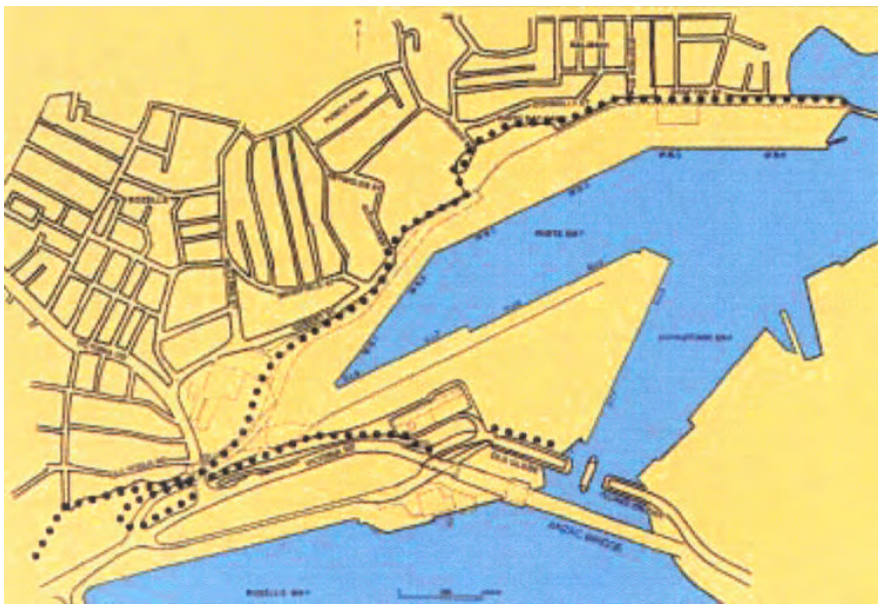


Figure 5.7.4.10
Public Access routes pursuant to The Glebe Island and White Bay Master Plan
Source: Glebe Island and White Bay Master Plan (Sydney Ports Corporation, 2000)

5.7.5 Current development proposals and approvals for the Bays Precinct

Cruise Passenger Terminal at White Bay

On 20 December 2009, the Premier announced that the NSW Government had decided to permanently relocate the Darling Harbour No. 8 Cruise Passenger Terminal (CPT), currently located at the south end of Barangaroo, to White Bay no.5, in accordance with recommendations from the Passenger Cruise Terminal Steering Committee, subject to planning approval.

The proposed CPT at White Bay will be in addition to the Overseas Passenger Terminal (OPT) located at Circular Quay. The use of berth 5 (WB5) will involve the adaptive reuse of the existing container warehouse as a purpose built facility berth and terminal. Berth 4 (WB4) will be used as secondary berthing. The proposal also involves a new link road providing access from James Craig Road via Glebe island to minimise traffic congestion on Roberts Road and Victoria Road adjacent to WBPS site.

Existing port activities and uses at WB5 will continue when the WB5 CPT is not in use. Port activities at other White Bay wharves will continue to occur. In particular, WB4 and Glebe island Wharf 1 will continue to be used for unloading bulk liquids. Where there is a shipping schedule conflict between a bulk liquids ship and a cruise passenger ship then the cruise passenger ship will have preference at WB4.

The CPT will be constructed and operated by Sydney Ports Corporation. The proposal has received planning approval under the provisions of Part 3A of the Environmental and Assessment Act 1979.

Figure 5.7.5.1
Aerial photograph with proposed area for the cruise passenger terminal, and the proposed access road overlaid in red. The White Bay Power Station is located in the bottom left.

Source: JBA Urban Planning Consultants, Cruise Passenger Terminal, Project Application, September 2010 - Figure 4

CBD Metro - Central Station to Rozelle

Planning approval has been given for this project, however it is currently on hold. The CBD Metro railway includes:

"An approximately seven kilometre metro railway primarily within underground twin tunnels from Central Station to Rozelle. New stations proposed at Central, Town Hall Square, Martin Place, Barangaroo-Wynyard, Pyrmont with potential for a future station at White Bay. A stabling facility and maintenance depot at Lilyfield/Rozelle".

As part of this proposal, the White Bay precinct would be used as a major construction site to support tunnel construction, tunnel spoil removal and rail systems installation. It is intended that this metro will form a central spine to which other metros would link or interchange.

The planning application was approved by the Minister for Planning under Part 3A of the Environmental and Assessment Act 1979, application no. 09_0036. In February 2010, the Premier announced that the CBD metro would be put on indefinite hold. The approvals for the underground rail lines and station boxes remain current.

This approval will impact on the WBPS site in the following ways:

- The Infrastructure SEPP provides protection for the rail corridor
- Clauses 88A and 88C contain provisions to ensure that development on, or adjacent to land within that corridor, does not adversely affect the viability of the CBD metro project or any proposed metro stations.

- Consent authorities are required to consider the impact of any major development within the interim rail corridors or stations proposed for the CBD metro on the viability of the project.
- All interim rail corridors and station areas are preserved to allow the project's future staged implementation.
- Clause 89 of the Infrastructure SEPP allows the Minister for Planning, in consultation with the Minister for Transport, as soon as practicable after 17 Feb 2010 and every 2 years after that, to review the interim rail corridors to determine whether any of the land included in a corridor should be excluded on the basis that it is no longer required for railway purposes.
- Modification to MP 09_0036 MOD 1, granted on 5 August 2010 under delegation by the Department of Planning allows the staged construction of the project, including the Barangaroo Pedestrian Link.

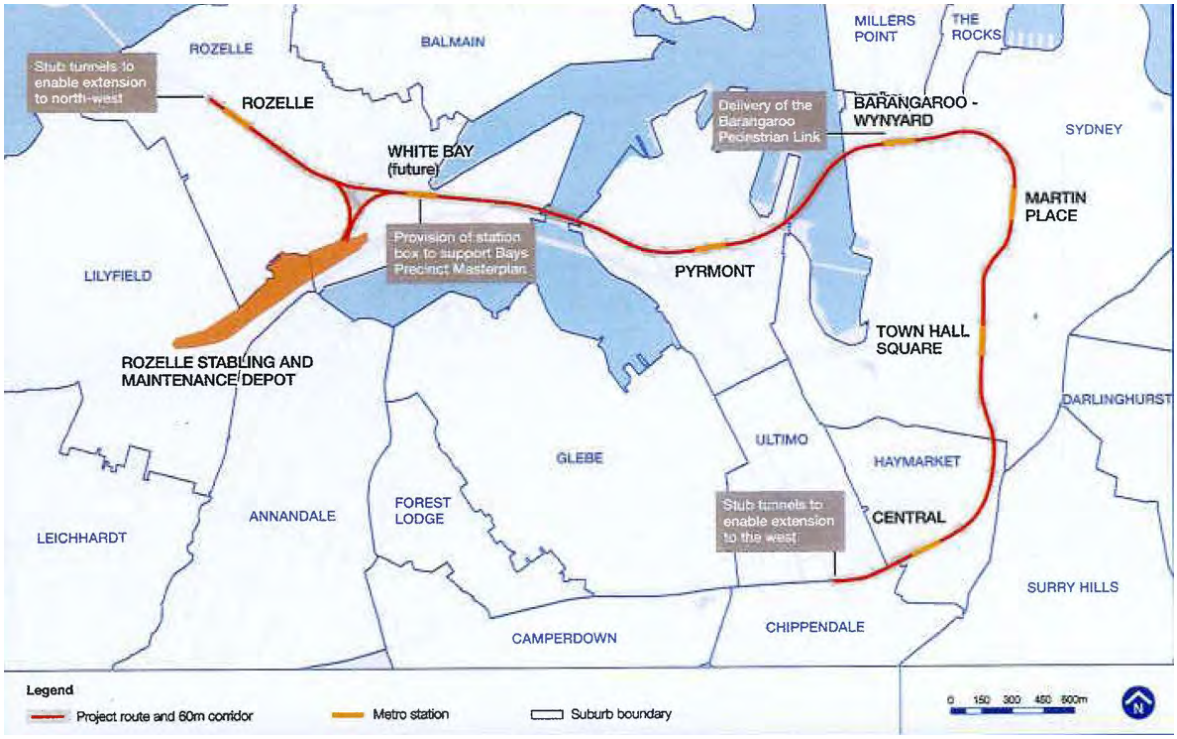


Figure 5.7.5.2

Plan showing location of proposed CBD metro and station location.

Source: CBD Metro, Environmental Assessment Summary.

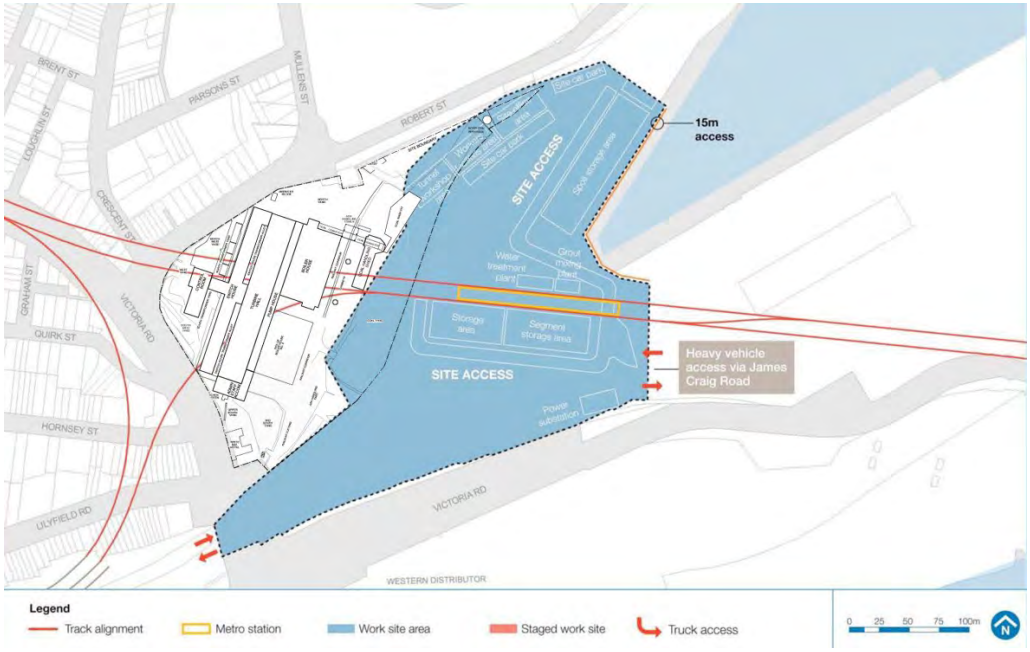


Figure 5.7.5.3

Location of proposed CBD metro station box at White Bay showing underground lines and site for construction. (Diagram modified by Design 5 to show White Bay Power Station.)

Source: CBD Metro, Environmental Assessment, Chapter 7 – Figure 7.12.

Other Development Proposals for the Bays Precinct

M4 east extension

In 2008, a submission was made to Infrastructure Australia for federal funding to assist with the East extension for the M4 motorway. The project was one of 30 shortlisted for further consideration by Infrastructure Australia. Preliminary investigation of three proposed tunnels has been undertaken which includes a tunnel linking North Strathfield (current eastern extremity of M4), to the Anzac Bridge. No decision has yet been made on these options.

Light Rail extension

The master plan provides for the possible continued use of the rail line connection through Rozelle Yard (refer to earlier discussion). This rail line has also been identified as a possible addition to the commuter light rail system, should the need arise for an interchange with any future metro station at the White Bay site.

5.7.6 Environmental Planning and Assessment Act - Planning Issues

Sydney Regional Environmental Plan No. 26 – City West is the principal environmental planning instrument affecting the White Bay Power Station site under the provisions of the EP&A Act. The controls relevant to the formulation of a Conservation Policy are discussed below.

5.7.7 Sydney Regional Environmental Plan No. 26 – City West (SREP 26)

Under the provisions of clause 3 of SREP 26, the White Bay Power Station is located within the 'Bays Precinct' created by SREP 26 – Amendment No 7 and is described on Map 2 (Sheet 3). The Minister is the consent authority for development in the Bays Precinct (unless delegated under section 23 of the EP&A Act).

5.7.7.1 Planning Principles

Clause 11 outlines the planning principles which the consent authority must take into

consideration before granting consent to a development application within City West. These are broad planning principles more specifically detailed in Clause 15, which sets out the matters the consent authority must take into consideration before granting consent to a development application specifically relating to land in the Bays Precinct. These include the following principles

5.7.7.2 Role and land use

- *Development should reinforce and complement the role of the precinct as major inner harbour port and maritime location. Development should recognize that the port operates 24 hours of the day and that the generation of noise, lighting and traffic movement is necessarily associated with its operation. (our emphasis)*

- *Development in the Precinct is to provide for a mixture of commercial port, port-related, employment, waterfront and recreational uses, but is not to include residential development. The existing diversity and maritime character of the Precinct, particularly the mixed use of the waterfront areas, should be retained.(our emphasis)*

- *Development is to take full advantage of the Precinct's location and its infrastructure, particularly rail or light rail facilities, for the port and other employment generating activities.*

- *Development is to encourage the environmental rejuvenation of the Precinct. Where possible, future development is to encourage the segregation of port traffic from residential and recreational areas.*

- *Development is to make efficient use of surplus government owned land.*

- *Development is to encourage the conservation of and adaptation for re-use of existing heritage items and structures for uses compatible with new development.*

- *Development is to contribute to improved water quality in Rozelle Bay and Blackwattle Bay.*

- *Development on the waterfront and on the land adjoining Rozelle Bay and Blackwattle Bay is to enhance the environmental quality of those areas for all users.*

5.7.7.3 Urban Design

- *Design principles to be developed in detailed planning should recognize the working industrial nature of the Precinct in close proximity to residential areas.*

- *Development along the Precinct boundary should relate to and not adversely affect the adjoining street systems and built forms.*

- *The siting and form of development in all areas must consider the impacts of views from within the Precinct and to and from surrounding areas.*

5.7.7.4 Public domain

- *Public recreation areas are to provide for a range of recreational opportunities for those working in and visiting the Precinct.*

- *The siting and form of development must consider creating, retaining and enhancing views and vistas from the water and public domain.*

- *Links for pedestrians, cyclists, and persons with disabilities are to be provided through the precinct and to link through the Precinct, including public access to the foreshores, should recognize the safety and security issues associated with commercial port and maritime activities.*

- *Development should help to create a high quality public domain in the Precinct.*

- *Master plans for all areas should identify opportunities for public recreation, public access through sites and links to adjoining pedestrian and cyclist networks.'*

5.7.7.5 Zoning

Pursuant to clause 16, the White Bay Site is zoned as '**Port and Employment'** as shown of Map 2, Sheet 3. Only uses which the consent authority is satisfied are generally consistent with one or more of the zone objectives are permissible within the zone.

The objectives of the zone are:

- 'To facilitate the continuation of commercial port uses, and
- To allow a range of commercial port facilities (such as buildings, structures, activities or operation and uses ancillary to theses, associated with carrying goods from one port to another and associated with goods from one port to another associated with storage and handling and access to the port), and
- To encourage development on Glebe Island and land adjoining White Bay which requires close proximity to the port, and
- To encourage a mix of land uses which generate employment opportunities in the White Bay Power Station site, and
- To provide for the ongoing rail access to the port and related activities, and
- To provided pedestrian and cyclist links with surrounding public access networks, and to encourage port related uses which optimise use of the existing rail facilities, and
- To provide road and rail access to port activities.

5.7.7.6 Heritage Conservation

Heritage Items are identified on Map 4, Sheet 3 and described in Schedule 4 of SREP no. 26. Conservation areas are also identified in Map 4 (see appendices). The White Bay Power Station is identified as Heritage Item 11 - Buildings and Structures in Schedule 4 of Part 3.

Development of, or in the vicinity of a heritage item, or within a conservation area must be compatible with the conservation of the heritage significance of the item or the character of the conservation area.

Clause 30 requires the consent authority to consider the following matters before granting consent to any development:

- 'The heritage significance of the heritage item or the conservation area, and
- The impact that the proposed development will have on the heritage significance of the heritage item and its setting or the conservation area, and
- The measures proposed to conserve the heritage significance of the heritage item and its setting or the conservation area, and
- Whether any archaeological site or potential archaeological site would be adversely affected.'

In accordance, with clause 31, The consent authority must decline to grant consent for development relating to a heritage item or conservation area unless it has taken into consideration a conservation management plan or heritage impact statement which includes an assessment of the matters listed in clause 30 above.

5.7.7.7 Master Plans

The White Bay Power Station is identified as land subject to master planning requirements (Map 5, Sheet 3 of SREP 26). Consent must not be granted to a development that relates to land indicated on Map 5 as requiring a Master Plan unless:

- There is a Master Plan for the land; and
- The consent authority has taken the Master Plan into consideration.

Among the matters that must be included in a Master Plan are proposals for heritage conservation, including how it is proposed to implement the guidelines set out in any applicable conservation policy and protection of archaeological relics.

When relevant, a Conservation Management Plan precedes and informs a Master Plan, which is generally prepared following adoption of a Conservation Management Plan. A Master Plan is therefore yet to be prepared for the site.

5.7.7.8 Summary of Issues

The key issue/s arising from the zoning for the White Bay site as a result of the objectives and controls contained in SREP 26 (other than the heritage objectives contained in clause 30) are:

- The prohibition of residential use in the Bays Precinct
- The stated objective of allowing for a mix of uses which generate employment opportunities in development proposals for the White Bay Power Station site.
- The stated broader objective for the zone to encourage a mix of land uses which generate employment opportunities, particularly in relation to port and maritime uses and the working industrial nature of the Bays Precinct
- The 'island' nature of the White Bay Power Station site and opportunities to create a buffer between the adjoining and recreational areas and port traffic.
- The desire to enable public access to heritage items of significance.

The development of residential uses is prohibited in the Bays Precinct. Residential development is defined in SREP 26 as the use of land for any form of housing , including housing leased on a short-term basis subject to the Residential Tenancies Act but does not include the use of land for a hotel, a hostel an apartment hotel, a boutique hotel serviced apartments, backpacker accommodation, a motel or the like. The prohibition of a residential use will assist in the retention of large significant spaces, but requires the identification of appropriate alternate uses which can satisfy the employment objectives for the site, while providing a mixture of commercial port, port-related, waterfront and recreational uses.

The White Bay Power Station site is a distinct site, identified as a discrete Master Plan site. It is situated on the boundary of the Bays Precinct, adjoining land under the jurisdiction of Leichhardt Municipal Council. The Power Station should act as a buffer between the Bays Precinct and the residential areas of Leichhardt. Policies relating to the identification of suitable land uses from a statutory planning perspective include:

Policy 7.1
Any proposal to adaptively re-use the site must be considered with regard to the objectives contained in SREP 26. That is, to encourage a mix of non-residential land uses which generate employment opportunities, particularly in relation to port and maritime uses and the working industrial nature of the Bays Precinct generally, and the place specifically.

Policy 7.2
Uses could include light industrial commercial, institutional and hotel uses. Residential uses

as defined in SREP 26 are not permitted. Any proposed use must be consistent with Policy 7.1 above.

Policy 7.3
Uses which would result in the creation of a buffer between the residential areas in Balmain and the adjoining industrial, maritime and port related activity and traffic within the Bays Precinct would be highly desirable.

Policy 7.4
Uses that utilise the existing railway infrastructure and provide a high degree of public accessibility to the site would be highly desirable.

5.8 Access & Accessibility

5.8.1 Access for the disabled

> *The 1998 Australian Bureau of Statistics survey indicated that 19% of Australia's population has a disability but of Australians over 60 years 50% have a disability.* [Eric Martin & Associates, *Port Arthur Historic Site Access Advice* (Draft) October 2000, 15.]

In providing advice on accessibility for disabled people the RAIA Practice notes state:

> *It is the intention of the Act that all buildings in Australia will, in the fullness of time, fully comply with the requirement for non-discriminatory access. Compliance for new and existing buildings are subject to different timeframes.*
> [RAIA Practice Notes AN20.01.003, April 2000.]

Heritage places are distinguished by features, materials, spaces and spatial relationships that contribute to their significance. Often, these significant elements such as steep terrain, monumental steps, narrow or heavy doors, decorative ornamental hardware, narrow pathways and corridors, pose barriers for people with disabilities especially wheelchair users. Further and more general advice may be found in *Access to Heritage Buildings for People with Disabilities* (August 1997) by Eric Martin (then of Cox Architects & Planners) which addresses many of the issues relating to access to the places of Cultural Significance for people with disabilities.

5.8.2 Levels of Accessibility

> *It is now considered that equality of access and enjoyment of heritage places for all people, including people with mobility or sensory impairments, the elderly, parents with small children and anyone who is temporarily disabled as a result of illness or injury should be a primary aim for owners and managers of such places.*
> [Martin E J (Cox Architects & Planners) Access to Heritage Buildings for people with Disabilities, August 1997, 1.]

The need to provide access to buildings for people with disabilities is now a requirement under the Disability Discrimination Act (DDA), but there is also a possibility that this may conflict with the heritage obligation to conserve places of heritage value and cultural significance and not alter them in such a way that adversely affects that significance.

To paraphrase, the DDA makes it illegal to discriminate against a person on the basis of their disability. The DDA is philosophical in approach and:

- Is complaints based;
- Has no construction standards
- Applies to actions of discrimination wherever they occur
- Therefore can only apply retrospectively to both new and existing buildings, wherever the discrimination occurs.

The access to buildings components of the DDA is applied only to buildings that are available for the general public to enter and use – as employees, patrons, customers or the general public.

While the current BCA cannot be relied upon to provide compliance with the DDA, the Australian Building Codes Board (ABCB) who coordinate the development of the BCA, is involved in a project to align the BCA/DDA so that the access provisions of the BCA will be accepted as a Premises Standard under the DDA. On completion of the project, compliance with the BCA will be deemed to be compliance with the DDA. Some of the major changes from the Current BCA access requirements, which could have specific

impact on White Bay Power Station, include:

[Australian Institute of Architects, ACUMEN, DDA – new standards for accesss to buildings, ed. 22 March 2010]

- Increases in the number of accessible entrances and doorways to buildings
- Increases in circulation space requirements in most areas such as in lifts, accessible toilets and doorways.
- Requirement for passing and turning spaces on passageways in some situations.
- Improvements in the types of lifts usable and access features within lifts.
- Significant increases in the number and location of unisex accessible toilets and the introduction of "ambulant accessible cubicles" in standard toilets.

At this stage, it is expected that the Premises Standards took effect on 1 May 2011.

The Premises Standards generally apply to all parts of the building used by occupants. However, there are a number of exemptions and concessions. [Australian Government, Attorney-General's Department, Premises Standards – Frequently Asked Questions]

- A general exemption is provided for unjustifiable hardship under section 11 of the Disability Discrimination Act 1992. A claim of unjustifiable hardship will be available in circumstances where it is unreasonable to require full compliance with the Premises Standards, particularly when undertaking new work on existing buildings. Unjustifiable hardship is not defined but is a list of factors that could include (non exhaustive); costs, loss of value, impact on revenue, capacity to pay and impact on financial viability, technical building factors, the relationship of costs to the value of the building and the benefits of access, whether the building is used for public purposes or has a community function and the effort expended in trying to comply with the Standards.
- Without limiting what is meant by the term, it demands an inquiry of what is fair and reasonable in the circumstances. It effectively places the onus on an applicant to establish that it would be unfair and unreasonable for them to comply in regard to particular requirements in the Premises Standards.
- There is also an exemption for acts done under statutory authority. For instance, actions taken in compliance with a court order or industrial instrument will not be subject to the Premises Standards.
- The Australian Human Rights Commission is given power to grant temporary exemptions in relation to the special requirements applied to existing public transport buildings. This is similar to such a power for transport infrastructure in the Transport Standards.
- There is also a general exemption for areas where providing access would be inappropriate because of the purpose for which the area is used, or to areas that would pose a health or safety risk for people with a disability.

People with mobility impairment covers those in wheelchairs, and those who may be assisting them. There are those also who are semi-ambulatory who need to use a walking aid. There are those also who have co-ordination problems, muscle impairment or other factors that impair their ease of movement around a place causing them difficulties to walk unaided.

People with vision impairment will have different requirements to enable them to understand the place they are in. They may also require special visual aids to enable them

to move through the spaces safely.

People with hearing impairments may require other special interpretive material and presentations

People with learning difficulties and other intellectual disabilities may require signs and interpretive material to be in plain English and possibly in diagrammatic form.

Essentially access can be divided into two distinct areas:

- Physical - access to the place itself (discussed below).
- Communication - access to information about the place

5.8.3 Public Access

All access points should preferably utilise historical or significant entry points. New entry points should be located to strengthen and not confuse an understanding of the significance of the place. The design and configuration of any future access points should be consistent with the former industrial use of the place and be clearly marked without competing with or confusing the character and significance of the place.

5.8.3.1 Pedestrian

Existing pedestrian access to the site is via the original bridge to the main entry of Victoria Road (this entry is now locked for security) and the single major entry from Robert Street.

Additional entries while the Power Station was functioning were available via the existing gates near the corner of Victoria Road and Robert Street.

Pedestrian access to the site should be encouraged but depending on future use should be controlled.

Possible future pedestrian access points will in part be determined by issues of security of port access which may control or inhibit access from the east and south. There may also be a need for multiple entries depending on the needs of the future use or uses.

5.8.3.2 Vehicular

Present access is via the original service entry in Robert Street. The proximity to the Mullins Street intersection is regarded as potentially dangerous and suggestions have been made that it should be relocated to a more appropriate location in terms of traffic management. The existing entry is a significant one, historically and provides a dramatic entry to the site almost on axis with the railway line. This entry point provides the most suitable access to the former industrial (dirty) areas of the site and the majority of areas accessible to vehicles. It is also the major entry (apart from the rail line) for heavy equipment and machinery.

If relocated it must avoid the brick pumping station site and should also retain space on the site to manoeuvre large trucks and heavy equipment.

There may be a possibility for an entry point from the proposed port authority road or the new link road proposed as part of the Cruise Passenger Terminal (due for completion in 2012) to the east of the site. Use of this road may be dependent on use and security of that road.

5.8.3.3 Rail

Historically the rail access and connection to the site is the most important of all. The rail network is the reason why the power station was built and where it is sited. Unfortunately the tracks leading back to the Rozelle marshalling yards have been taken up but the cutting and access way survives, with some later added fill to block access.

Rail access could be reinstated along its original route both for interpretation purposes as well as servicing and maintenance. This would need to be negotiated with both Sydney Ports and the NSW Rail Corporation. Issues of access security will also require addressing to ensure safety and security of both the power station and neighbouring sites.

The area to the east of the site is also approved as part of a mass transit rail system (metro) which, if constructed, would provide a mass transit station close to the Power Station, substantially broadening viability and possibilities for reuse of the site.

5.8.3.4 Water

Although the White Bay Power Station was located close to the harbour for access to its water for cooling in the condensers, it has never had any other form of water access or even a frontage to the harbour, except via the port activity lands to its east.

Given the guidelines in the Sydney Ports Master Plan for the area and issues of customs control as well as Occupational Health and Safety, it is highly unlikely that any access via these areas to the waterfront will be possible in the foreseeable future.

Notwithstanding this, it would still be desirable to establish such an access if this were possible. This would be dependent on the appropriateness of waterfront access to any future use of the power station.

Policy 8.1

- *All public access points should preferably utilise historical or significant entry points. New entry points should be located to strengthen and not confuse an understanding of the significance of the place.*
- *The design and configuration of any future access points should be consistent with the former industrial use of the place and be clearly marked without competing with or confusing the character and significance of the place.*

Policy 8.2

- *Pedestrian access to the site is via the original bridge to the main entry of Victoria Road (this entry is now locked for security) and the single major entry from Robert Street.*
- *Pedestrian access to the site should be encouraged but depending on future use should be controlled.*

Policy 8.3

The existing vehicular entry is a significant one, historically and provides a dramatic entry to the site almost on axis with the railway line. If vehicular access is relocated for reasons of safety it must avoid the brick pumping station site and should also retain space on the site to manoeuvre large trucks and heavy equipment.

5.9 Interpretation

The evidence gathered in this report clearly demonstrates that the White Bay Power Station is a place of quite exceptional significance.

Outside the scope and production of this report, an Oral History project has been undertaken and a video made featuring interviews with former employees of the Power Station.

A good deal of additional information is available in the form of plans and early photographs (held at the Power House Museum). More such evidence may come to light in the course of time.

An Interpretation Strategy must be commissioned as the first stage of an Interpretation Plan in order for the stories encapsulated in the place to be given a prominent and integrated role in the future of the site. This may be undertaken in conjunction with any masterplanning and development proposals so as to appropriately incorporate interpretation into any future use and design. Such stories should include (but not be limited to):

- Pre Power Station history - including Aboriginal use of the site, early land grants, subdivisions for housing, resumption by the State
- The building of the Power Station - Power House Archives
- Import of early equipment from the UK - links to companies still in business (Parsons, Babcock & Wilcox)
- Generation of power from coal
- Links with the coal fields and bringing the coal to WBPS - rail and road
- Reticulation of power
- Changing uses and requirements for power - rail, trams, public and private power demands
- Life inside the Power Station
- Life outside the Power Station -- including the protests of 1981/2
- Decommissioning & removal of equipment
- Recent use by film makers, events people, fashion and photography shoots
- An exhibition of images of the emptiness now (before it gets filled with new structures)
- The Interpretation Plan should provide recommendations ranging from the interpretive design of new structures within the existing buildings, through artefact devices that will assist public, user and specialist visitor to understand the history and significance of the site.

Policy 9.1
An Interpretation Strategy should be commissioned as the first stage of an interpretation plan, as an integrated aspect of the development and conservation of White Bay Power Station.

5.10 Future use and development

5.10.1 Possible uses

A range of possible/likely uses are discussed below.

Interpretation/Museum Use

The significance and intactness of the extant machinery in its original setting is such that for these elements, interpretation to the wider public and those doing research is essential. Thus interpretation must be considered as a use in combination with other uses. The elements which are to be interpreted are generally within discrete areas within each part of the complex but for elements such as the Boiler House and the Turbine Hall their settings and context is such that their conservation and interpretation has consequences well beyond the area occupied by the machinery itself. It is the survival of these elements within their original and often extraordinary context which makes this place unique. Thus interpretation of the machinery includes interpretation of the spaces and structures in which they are located. One cannot be understood without the other. It is therefore important that interpretation is not compromised by inappropriate or incompatible use, structures or development. This does not mean that other uses or development cannot occur. However they must acknowledge and respect the exceptional significance of the machinery and its associated spaces and structures and not compromise its ability to be interpreted.

In some areas, such as the coal elevator, conveyor chute, and its intact control rooms, no activity other than interpretation can be allowed. In other areas where the significant machinery has been removed, interpretation is not required. It would, however, be preferred if any adaptation or new work in these areas responded to, and supported, the significance of the place to strengthen its appreciation by those who use these areas.

In large spaces such as the Boiler House and Turbine Hall, it is essential that any new work respects and strengthens the significance of the place to assist interpretation, understanding and appreciation of this significance.

The spaces and particularly the machinery must be regarded as a backdrop and identity for any new use or structure.

It is the intent of the future development guidelines that the new or additional structures and the uses they house will provide the resources to conserve and interpret the significant spaces and machinery and will subsidise their lower intensity/less impact use.

It is important that any new use try to incorporate the existing structures as part of its operational use, thus ensuring that maintenance of these elements is assured (e.g. using the chimneys as flues for services to ensure their retention and maintenance.)

Museum use is not considered a viable use on its own. Suggestions have been made to use White Bay Power Station as an extension to the Powerhouse Museum and while in part this may be possible, it would impose considerable financial liability on the present owners and the museum operation, if it were not subsidised by other uses within the site.

Industrial/Workshop Use

A continuation of industrial and machine related use within the complex could assist in retaining and respecting the significance of the original use at White Bay Power Station. Care would need to be taken that such use did not place significant machinery at risk of damage or loss. It would be critical to the survival of this machinery that 'dirty' processes or uses were not introduced in the vicinity of these finer machines. Even the original boiler would suffer considerable damage if constantly exposed to dirty or polluted processes.

Given current OH&S practices this is probably an unlikely scenario, however it must be considered. For example, a joinery or machine shop in the boiler house would produce a level of dust which may prove detrimental to an ongoing maintenance of the boiler.

On the other hand a use which is inspired by the original use and is basically clean, such as manufacturing of solar power components may be very compatible.

In relation to the Cultural Significance of the White Bay Power Station, some form of power generation as an ancillary facility to another use would be appropriate. Coal fired power production is no longer appropriate or even desirable within metropolitan areas, however other forms of environmentally responsible power generation may be considered. As an example co-generation power plants already exist within commercial and residential complexes in the CBD area.

For any such use to occur, it would need to meet very strict environmental controls and must also allow the significant machinery, spaces and elements to be retained and respected.

Bulky Goods/Retail Use

Storage and display for retail would require large spaces and could potentially provide very exciting spaces which would be accessed by the public. The desire for retail 'identity' may conflict with the identity of the power station and over time may subvert it to being a mere curiosity within the complex. If this use is considered, very strict and careful controls would be required to retain the primary identity and significance of the place as a former power station.

On the other hand a creative approach to such a use could provide a strong and appropriately scaled backdrop to the surviving machinery and its attendant spaces.

Venue, Theatre and Film location Use

Until recent safety concerns became the overriding factor, this has been the predominant use for the place and has to a large extent assisted in the survival of the raw industrial character of the place and its spaces. This now sought-after aesthetic has been used as a backdrop for film shoots, fashion shows, advertisements, corporate and private events and parties. Even if other uses occupy some of the less spectacular spaces it would be beneficial to retain the ability to continue these uses in the larger and more spectacular spaces.

Unfortunately the configuration of the site makes it difficult to accommodate the full range of large volume studio space required for a film studio complex, however some level of film industry use may be possible.

White Bay Power Station has earned a reputation as a unique and spectacular venue location and this could be enhanced with new facilities either in less significant existing spaces or in new structures. These are spaces suitable for theatre use. While these are not the conventional theatre spaces, the place and spaces themselves could still accommodate such uses as long as requirements and installations responded to and respected the constraints and significance the place presents. The size of the spaces provides the opportunity for considerable theatrical possibilities.

Education Use

The range of sizes and configuration of spaces would allow an educational use, particularly one which required workshops and exhibition space. With new structures to house the more sensitive functions, the Power Station could present an inspiring environment for learning. Its location on a major bus route, so close to the city, further enhances this possibility. It would be preferable if the subject focus of the education facility was related to the significant

use and fabric of the power station or was inspired by it.

Commercial Office Use

While this use would be a clean one, it may sit comfortably within the raw industrial environment of White Bay Power Station. Like many of the other uses it would require additional or associated uses to utilise the larger spaces such as the Turbine Hall. A commercial presence could provide the impetus for associated retail and food and beverage outlets which would help to activate many of the more difficult spaces in the lower levels of the Switch house.

If the office or commercial activity and its fitout was regarded as a machine, an installation within the structure, then its presence could provide an exciting and inspiring environment.

Residential Use

Residential use is not allowed under the present planning infrastructure and zoning for the site. It is also considered undesirable from the point of view of site contamination (in the soil and building fabric) A third factor against it is that it would require the intense subdivision and privatisation of many of the larger and interconnected spaces, thus considerably reducing the ability of the place to interpret itself. The local community have also expressed a strong dislike of adaptation to residential use.

Rapid Mass Transit System

One interesting proposal presented by the Community Reference Group "The Future of the Bays Precinct - Sydney" (referred to in Section 5.7), is the possibility of the main entrance/ exit to any future underground mass transit system, such as for the already approved metro station to the east of the site. The Boiler House could serve as the ground level foyer not unlike Grand Central Station in New York or the great railway stations of Europe.

This use could occur in combination with any other uses above.

5.10.2 Guidelines for New Structures

Redevelopment of the Power Station must take into account all the Policies contained herein. These Policies are designed to allow for maximum flexibility commensurate with retaining and conserving the Cultural Significance of this quite exceptional site. In summary the following guidelines should be observed. For the site generally these are shown in diagrammatic form with heights in Figure 5.10.2.1. For guidelines for new structure and adaptation within existing buildings refer to Section 5.1.

Prior to any proposal for a new development for the site, further detailed analysis of future development options (shown in Figure 5.10.2.1) may be required. Normal statutory approvals, including but not limited to a Section 60 application with the Heritage Office, will be necessary.

- Respect significant vistas and views to and from WBPS and within site.
- Respect scale, form, texture and clarity of those elements which define WBPS identity.
- Respect axiality of existing buildings. If using a different alignment for new work, this must respect and retain views and vistas and integrity of existing axes and structures.
- Retain dominance of chimneys.

- Retain dominance of Boiler House from and to the east.
- Potential to insert new structure where the precipitators were removed, particularly at the northern end.
- Retain abundant natural light over new structures into Boiler House:
  * potential to use this new structure to connect to chimney stacks and assist in their structural stability. Form of connection should be inspired by the original connections,
  * new structures to leave clear height beneath and no lower than lower steel horizontal on ash handling unit.
- Potential to construct new building to similar height of 1958 Boiler House on site of Boiler House #2. Retain access to daylight for laboratory in Admin wing. New structure may interconnect into Pump House via new openings. This volume should be reinstated as a major priority as it will restore the formal massing and balance of the whole power station.
- Potential for low level structures east of coal handling shed.
- Retain original rail corridor from the cutting through to Coal Handling shed.
- Potential for low level structure south of Admin Building, no higher than Victoria Road footpath level. This could link the White Bay Power Station to any proposal for the former White Bay Hotel site and incorporate a new entry to the site.
- Potential for low level structures along Robert Street boundary facing main north elevation. Structures should "front" the power station with simple elevations to Robert Street.
- Links to the Penstocks should be retained if possible (northern one at least).
- Potential to construct infill buildings between and around blade walls in transformer yards while respecting scale and dominance of these walls.
- Former garden areas west and south west of 1948 Control Room and Switch House should remain as a garden setting to the power station.
- All new structures should respect the significance and form of WBPS. They should be contemporary in design to distinguish them from the earlier work at the same time as being inspired by and reflecting the industrial character of the place. Preferred materials are steel and glass with minimum masonry elements.
- The potential new structures shown in Figure 5.10.2.1 show all structures to their maximum size, however not all should exist at the same time. New building masses must be balanced with open space, landscape and recreation areas to achieve the optimum development.

Policy 10.1

A range of future uses may be considered as appropriate for White Bay Power Station

These include:

- *Interpretation/Museum use*
- *Cultural or community based use*
- *Industrial/Workshop use*
- *Bulky goods/retail use*

- *Venue, theatre and film location*
- *Education use*
- *Commercial/office use*

These uses may be considered singly or in combination.

While the impact of each use will require careful consideration and management, any use must respect the significance of White Bay Power Station and the requirement that its significant machinery and associated spaces must be available for interpretation.

Policy 10.2

Residential use is considered inappropriate due to both site contamination levels, the significance of the place and the proximity of the port operation. It is also not allowed under the Planning Instruments.

Policy 10.3

Those uses which have least impact on the significance of the place are preferred to those which have large impact or involve considerable change. Those uses which are inspired by and support the significance of the place are preferred to those which do not.

Policy 10.4

Redevelopment of the Power Station must take into account all the Policies contained herein. These Policies are designed to allow for maximum flexibility commensurate with retaining, preserving and conserving the Cultural Significance of this quite exceptional site.

- *Respect significant vistas and views to and from White Bay Power Station and within site.*
- *Respect scale, form, texture and clarity of those elements which define White Bay Power Station's identity.*
- *Respect axiality of existing buildings. If using a different alignment for new work, this must respect and retain views and vistas and integrity of existing axes and structures.*
- *Retain dominance of chimneys.*
- *Retain dominance of Boiler House from and to east.*
- *Potential to insert new structure where precipitators removed, particularly at north end. Retain abundant natural light over new structures into Boiler House:*
    - *potential to use this new structure to connect to chimney stacks and assist in their structural stability. Form of connection should be inspired by the original connections,*
    - *new structures to leave clear height beneath and no lower than lower steel horizontal on ash handling unit.*
- *Potential to construct new building to similar height of 1958 Boiler House on site of Boiler House #2. Retain access to daylight for laboratory in Admin wing. New structure may interconnect into Pump House via new openings. This volume should be reinstated as a major priority as it will restore the formal massing and balance of the whole power station.*
- *Potential for low level structures east of coal handling shed.*
- *Retain original rail corridor from the cutting through to Coal Handling shed.*
- *Potential for low level structure south of Admin Building, no higher than Victoria Road footpath level. This could link the White Bay Power Station to any proposal for the former White Bay Hotel site and incorporate a new entry to the site, which itself could be a local landmark.*
- *Potential for low level structures along Robert Street boundary facing main north elevation. Structures should "front" power station with simple elevations to Robert Street.*
- *Links to the Penstocks should be retained if possible (northern one at least).*

- *Potential to construct infill buildings between and around blade walls in transformer yards while respecting scale and dominance of these walls.*
- *Former garden areas west and south west of 1948 Control Room and Switch House should remain as a garden setting to the power station.*
- *All new structures should respect the significance and form of White Bay Power Station. They should be contemporary in design to distinguish them from the earlier work at the same time as being inspired by and reflecting the industrial character of the place. Preferred materials are steel and glass with minimum masonry elements.*
- *The potential new structures shown in Figure 5.10.2.1 show all structures to their maximum size, but not all should exist at the same time. New building masses must be balanced with open space, landscape and recreation areas to achieve the optimum development.*

Prior to any proposal for a new development for the site, further detailed analysis of future development options (shown in Figure 5.10.2.1) may be required. Normal statutory approvals, including but not limited to a Section 60 application with the Heritage Office, will be necessary.

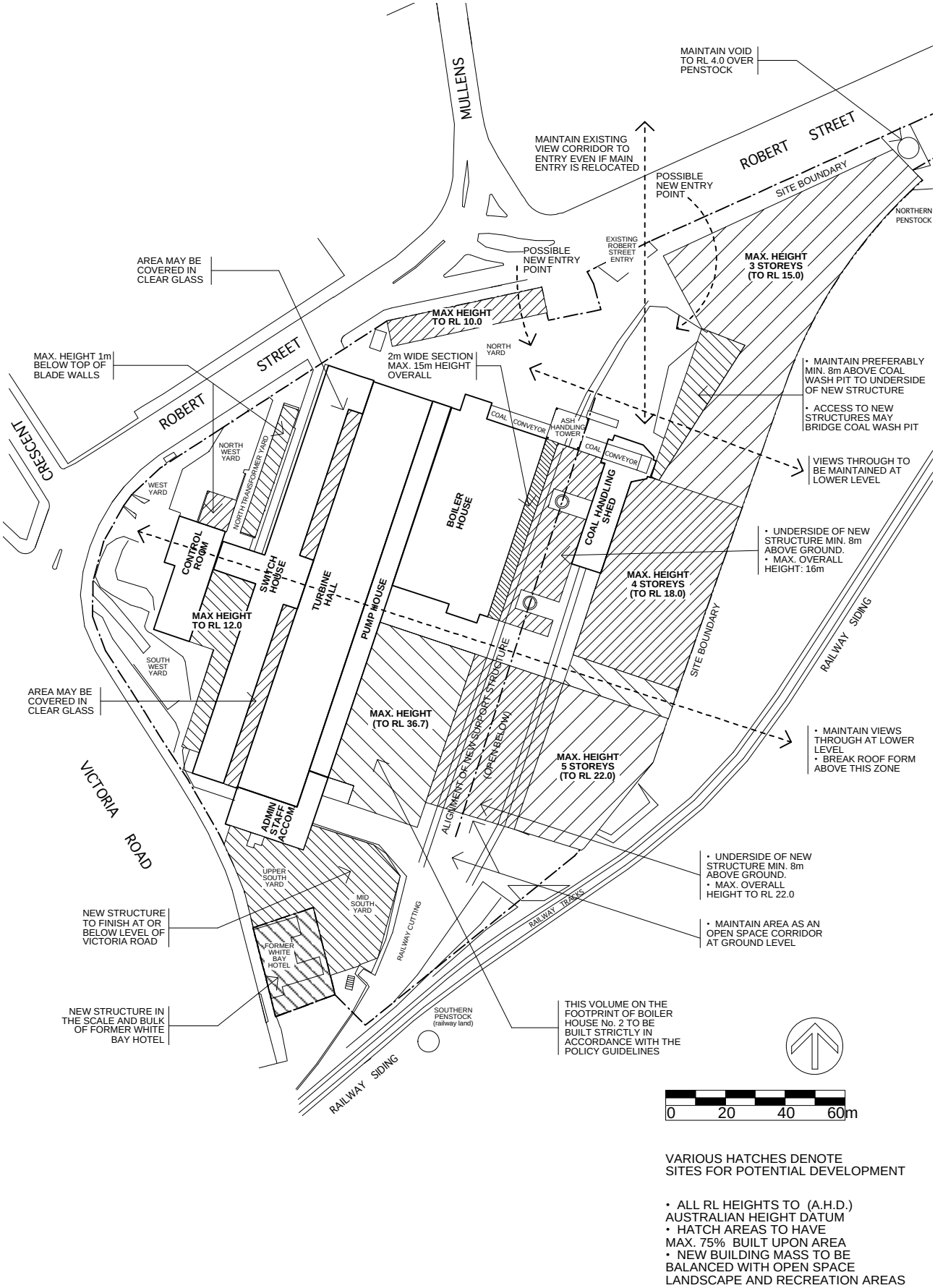


Figure 5.10.2.1
Site plan showing future development options, including potential new structures (and heights) and entrances to the site

5.11 Management and maintenance of the place

The Management and Maintenance of the significant parts of White Bay Power Station is a significant undertaking in itself. Too often well intentioned plans for the conservation of places have withered through force of circumstances, unwilling tenants or purchasers and the like. It is of paramount importance that the Cultural Significance of the Power Station be guarded for the enjoyment, edification and enrichment of future generations.

A Committee of interested and appropriately qualified persons may be set up to oversee the enforcement of the Policies in this report and its successors.

Day to day management of the place will devolve on the owners/occupiers who will be given copies of this plan.

Policy 11.1

- *The site should ideally be managed and maintained as a single entity. Component parts of the site should not be alienated, and if there are multiple users or owners, a form of title such as Community Title should be used which ensures the retention and maintenance of the site as a whole.*
- *A Conservation Committee should be appointed by SHFA to provide on-going advice to SHFA on the implementation of the CMP and the protection of the heritage significance of the site.*
- *There should be continuity of relevant and experienced conservation advice for all aspects of changes to WBPS.*
- *Consultant advice and contractual work should be limited to firms or persons with proven expertise in the relevant field and experience on heritage buildings/structures.*
- *Proposals for change should be subject to an established decision-making process that incorporates relevant advice.*

It is normal practice for the Heritage Council to allow a range of standard exemptions for development endorsed by them. At this stage, only the guidelines for a range of development is under consideration by the Heritage Office. Specific exemptions for development cannot therefore be formulated until a specific development proposal has been finalised and endorsed. Not withstanding this, exemptions which relate to the repair and maintenance of the existing structure, fabric and machinery, in accordance with the policies and guidelines in this report should be allowed. They should not be allowed where significant elements or attributes of the place will be damaged or lost.

5.12 Adoption, implementation and review

5.12.1 The Process of finding a new use for White Bay Power Station

All volumes of this Revised CMP should form part of any tender documents prepared for seeking expressions of interest for White Bay Power Station and/or the White Bay Hotel site. The CMP should not be used in an abridged format. Refer Policy 1.1.3.

The Revised CMP must be endorsed by the NSW Heritage Office before construction commence before becoming part of any tender documents and once endorsed it will not be subject to change until it is formally reviewed as set out below.

Policy 12.1

The draft revised CMP must form part of any tender documents. Once endorsed by the NSW Heritage Council, it should be used to guide all work at the place until reviewed as described in Policy 12.4

5.12.2 The master planning process and design phase for the site

Master Plan design proposals or any plans which set the framework for the future of White Bay Power Station should be developed in conjunction with appropriate conservation advice, and in accordance with the policies in this Revised CMP. Refer Policy 1.1.4.

5.12.3 Endorsement of Policies

The policies and supporting arguments in this document should be endorsed as an appropriate guide to future development by all bodies involved in planning and approval processes for White Bay Power Station.

In addition to Sydney Harbour Foreshore Authority, those bodies should include:

- Leichhardt City Council
- The NSW Heritage Council
- NSW Department of Planning and Infrastructure

The following bodies should be invited to provide comments on this Plan:

- The RAIA (NSW Chapter)
- The Institution of Engineers, Australia, Sydney Division
- The National Trust
- The Australian Heritage Commission
- Australia ICOMOS

Policy 12.2
The endorsed Revised CMP should be adopted by all authorities and bodies involved in planning and approval processes for White Bay Power Station and the White Bay Hotel site, and used as a basis for assessment of any proposal for change.

5.12.4 Publication of this Plan

SHFA should make this Revised CMP publicly available. As a minimum, copies should be lodged with the Heritage Branch, the local library and the State Library.

Policy 12.3
SHFA should make this Revised CMP publicly available. As a minimum, copies should be lodged with the Heritage Branch, the local library and the State Library.

5.12.5 Review of this Plan

This revised CMP should be reviewed every ten years, and if the management structure of the place changes or new physical or documentary evidence changes the known significance of the place.

Policy 12.4
This revised Conservation Management Plan should be reviewed every ten years or sooner if:

- *the management structure of the place changes,*

- *adaptive re-use and development has been undertaken in accordance with policies in this CMP.*
- *new physical or documentary evidence changes the known significance of the place.*

5.13 FURTHER RESEARCH

5.13.1 Archaeology

The opportunity should be taken for archaeological research to be undertaken around the site including the former White Bay Hotel site before development work is done. Information on the location of earlier structures and on work practices and conditions may be found by such investigation. The site was occupied by housing before the development of the Power Station and there is potential for information to be gathered about this period in its evolution. While much of the site was cut and filled for the Power Station, some evidence may still survive but most likely badly disturbed. Refer also to Section 5.6.

Such investigation should only be undertaken where the area is to be disturbed for development or further works.

Figure 5.13.1.1
Site Plan
hatching shows areas of archaeological potential
for pre-WBPS occupation.
(Whole site may yield information of Power Station period)

Policy 13.1

- *The opportunity should be taken for archaeological research around the site including the former White Bay Hotel site before development work is done. Information on the location of earlier structures and on work practices and conditions may be found by such investigation.*
- *The site was occupied by housing before the development of the Power Station and hotel, and there is potential for information to be gathered about this period in its evolution.*
- *While much of the site was cut and filled for the Power Station, some evidence may survive.*

5.13.2 Aboriginal history

No Aboriginal history research specific to White Bay has been carried out. Research in these areas would assist in a fuller understanding of these aspects but would not alter the significance of the extant structure. It is unlikely that any artefacts would be found given that the site has been substantially reconfigured and is partially on reclaimed land. The reconfigured areas have been comprehensively disturbed in the course of building works both before and during the erection the Power Station. However, research may reveal areas of occupation or use by the Aboriginal people which would add to our knowledge of the site and surrounding area.

Policy 13.2

Any future revision of the CMP should include research on the Aboriginal and early European occupation of the site, to give a more comprehensive understanding of its historical context. This research should be undertaken earlier should any interpretation strategy or masterplanning be undertaken for the site.

5.13.3 Oral history

An Oral History recording experiences of former workers of the Power Station was commissioned by SHFA and has been completed. This should be read in conjunction with this Conservation Management Plan and it should be used to inform and be part of an Interpretation Strategy (see Section 5.9).

Policy 13.3

An Oral History recording experiences of former workers of the Power Station was commissioned by SHFA and has been completed. This should be read in conjunction with this Conservation Management Plan and it should be used to inform and be part of an Interpretation Strategy.