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Introduction

This report has been prepared as part requirement for the Masters of Urban Design Program at Sydney University. The report explores historical and theoretical issues relevant to the future revitalisation of the White Bay Power Station, the Rozelle Marshalling Yards and their surrounds.

The report is divided into 3 sections:

Section 1
Identifies the historical and physical context of the subject sites. It also provides an over view of relevant background studies and legislation. From these a series of issues are raised that relate to the current and future needs of the area. This section therefore sets the context for the project.

Section 2
Describes various urban design approaches and methods drawn from academic and practical sources, that may be applied to the sites. The application of these methods is used to assist in the preparation of the analysis diagrams. The analysis diagrams reveal the opportunities and constraints which in turn inform an overall structure plan.

Section 3
Explores possible outcomes for various elements of the proposed structure plan with regard to the objectives outlined in Section 2. Successful case studies deemed relevant to the site are introduced as exemplars that illustrate possible future visions for the site and its numerous constituent elements.
SECTION 1
Evolution of industrial cities
(source: Carmona et al.)
Section 1

1.1 Patterns of Development in the Western Industrial City

The subject sites consist of industrial land that due to evolving land use patterns and community expectations are no longer required or suited for industrial purposes.

Sydney follows the typical pattern of growth for western industrial cities. This pattern is described by Carmona et al. and is summarised in the following sequence (Refer to Figure page 7):

- Industrialisation in the late 19th and early 20th Centuries, followed by rapid urban growth has people moved to the city from rural areas in search of employment;
- Development of dense residential working class suburbs within walking distance of the factories (e.g. Balmain and Rozelle);
- Development of public transport systems in the 1900s led to decentralisation of the city. The rate of decentralisation escalated rapidly with the increase in car ownership from the late 1920s onward;
- Part of this decentralisation included the migration of heavy industry from the city to cheaper city fringe sites. This process led to the abandonment of more central 'brownfield' sites. The future use of a two of these abandoned brownfield sites forms the subject of this study.

1.2 The Study Area and Context

The original study intended to explore potential options for the adaptive reuse of the White Bay Power Station, however it was quickly recognised that access was such a major constraint to redevelopment that the study was expanded to a suggested Urban Design Structure Plan that also incorporates the Rozelle Marshalling Yards. The two adjoining subject sites are under the single ownership of the Sydney Harbour Foreshore Authority (SHFA). The plans on page 9 illustrate the site's location. Surrounding land use is predominantly residential on the hills and open space or industrial in the valleys. The two sites are described in the following sections.

White Bay Power Station

The White Bay Power Station forms one of several major landmarks in Rozelle along with the ANZAC Bridge and Glebe Island silos. The power station is a massive industrial relic 150 metres long by about 70 metres wide with a number of associated buildings and wings, the two chimneys, being the tallest vertical elements, tower 60 metres into the air. The White Bay Power Station site is irregular in shape. The site is bounded by Victoria Road to the south west and Robert Street to the north west. Its eastern edge is defined by adjoining Ports Authority land. The only vehicular access to the site is via Roberts street.
Locality Plans of White Bay Power Station and The Rozelle Marshalling Yards
(source: Lands Department, topographic map, Parramatta River, 2001)
The site occupies just over 3 hectares. Due to its proximity to the city, the harbour and the wealthy suburb of Balmain the site is inherently valuable. However, despite not operating as a power station since 1983, it has yet to be redeveloped.

The site looks out over an industrial landscape to excellent distant harbour and city views; understandably many developers have expressed interest at converting the space into residential units, however, the site’s current zoning precludes residential use. In reality residential would not be suitable due to noise associated with the port activity.

When looking at possible future uses for the power station it quickly becomes apparent that one of the fundamental restrictions to development is the power station’s shared boundary with secure port and rail lands. These neighbouring properties form impermeable edges described by Suters Architects in the 1994 White Bay Plan of Management as the “power station’s gaolers”. In fact this early study is one of the only reports on the site to acknowledge this significant problem. Although recognising the problem the Plan of Management provides no attempt to address the issue of access at a broader level. This structure plan aims to provide solutions that may resolve the issues of access.

Key events in the historical development of the power station were sourced from the Hill Thalis (1997) White Bay Power Station Site Pre-Masterplan Study and the White Bay Power Station Conservation Management Plan (2004) these are summarised below

- Built between 1912 and 1917 to provide power for Sydney’s tram and electrified rail network, the White Bay Power Station was one of a number of harbour side sites developed for power station construction. Harbour side land was chosen because of the unlimited supply of water for cooling the turbines
M4 East study presented an option for the tunnel portal to exit in the Rozelle Marshalling Yards site.

M4 East Preferred Option

White Bay Power Station and Surrounds: Structure Plan
The White Bay Power Station

A Portion of the Rozelle Marshalling Yards

- Other late 18th and early 19th Century harbour side power stations included Ultimo, Pyrmont, White Bay and Balmain, a private CSR power station also operated at Pyrmont².

- Land occupied by the Power station was carved out of the former residential areas in Rozelle and reclaimed tidal flats of the Whites Creek estuary (refer to historical plans in section 1.4).

- A process of cutting and filling of the site was undertaken to provide a level platform for the construction of the Power Station (refer to historical plans in section 1.4).

- Since the 1960s metropolitan power station use dwindled as electricity was generated in power stations closer to coal sources.

- The last of the metropolitan power stations were Pyrmont and White Bay, both decommissioned in 1983.

- The Pyrmont Power Station has since been demolished in its place now stands Star City Casino.

- All but Ultimo Power Station (the Powerhouse Museum) and White Bay Power Station have been demolished.

- The Power Station in its present state is a deteriorating relic situated amongst a sea of wasteland.

Rozelle Marshalling Yards

The Marshalling Yards were developed just prior to the Power Station, around 1912, as a collection and distribution facility to service the ports of White Bay and Glebe Island and the White Bay Power Station. The SHFA website indicates that the marshalling yards are no longer in use due to the following:

- the consolidation of Freight Corp’s Sydney operations at Enfield Marshalling Yards and the establishment by National Rail Corporation of a intermodal facility at Chullora, and

- the dominance of freight movements by road.

Consequently the Rozelle Marshalling Yards, were sold to SHFA in 2001 with plans to redevelop the 11.8 hectare site as a light industry centre. Once completed this redevelopment was suggested to provide up to 4000 jobs, however this redevelopment was delayed and may not occur.

Leichhardt Municipal Council considers any future plans for the site to be "on hold" until finalisation of the RTA's plans for the area. In
The intersection between Victoria Street and the City Link with Blackwattle Bay behind (below).

The Pedestrian bridge over Victoria Road close to the White Bay Power Station and Hotel (below).

In particular the potential use of the adjoining Rozelle Marshalling Yards as the exiting point for the M4 east extension (tunnel) (Refer to figure page 11). However, on July 23, 2004, a preferred option for the M4 was announced that does not utilise the Rozelle Marshalling Yards (Refer to figure p.11). The marshalling yards, therefore, may be considered for incorporation into a broader master planning process.

It can be assumed that the original plans stated on the SHFA Rozelle Marshalling Yards fact sheet (2001) for the site are again relevant: "To adequately service the existing handling requirements of the Ports of White Bay and Glebe Island, a new connecting line will run along a corridor on the eastern boundary of the site, next to City West Link Road. The remaining rail tracks in the marshalling yards will be taken up to make way for redevelopment".

For this project, and in accordance with comments made by SHFA in August, the Power Station and Rozelle Marshalling Yards will be considered as one integrated site.
1.3 Access

1.3.1 Local Movement and connectivity

White Bay Power Station despite being in close proximity to many lines of communication fails to be well integrated to the surrounding area. This is primarily due to its industrial heritage that allowed most lines of communication to bi-pass the site with the exception of heavy rail used to freight coals to fire the turbines, this rail connection to the site ceased however with the closure of the Power Station.

An overview of lines of communication in the vicinity of the site is given below and includes the following modes:

- Road;
- Rail;
- Harbour;
- Light Rail; and
- Pedestrian and Cycle links.

1.3.2 Rail

The site is well serviced by freight rail but not by commuter rail. The inaccessibility of the rail corridor (including the Rozelle Marshalling Yards) makes the railways an effective barrier to the site from the south. The Railway Marshalling Yards present a substantial physical barrier between Rozelle and the suburbs of Glebe and Annadale despite their close proximity.

1.3.3 Harbour

The harbour is less than 400m from the power station, this should equate to less than a 5 minute walk, however...
Light Rail at Rozelle Bay Station (adjacent City West Link and The Crescent intersection) Cycle way in foreground.

Walking and cycling using the ANZAC Bridge (top) much more arduous than if using the Glebe Island Bridge access (lower image) the bridge could open and close at regular advertised times.

activities prevent harbour access for the public. Port activities are unlikely to cease following the State Government’s recent decisions to retain a working harbour in Sydney. The sacrifice of Millers Point land would make Glebe Island and White Bay’s Port facilities the only major ports left in Sydney harbour. Continuing Harbour activities (Glebe Island port facilities are leased until 2012 with options to extend until 2017) will mean access to the port will remain difficult.

1.3.4 Light Rail

A light rail station is only about 600m away, if access can be gained through the marshalling yards this equates to approximately an 8 minute walk. The prospect of continuing the line through the marshalling yards to the power station site seem unlikely because of the difficulty of accommodating the light rail and cars within the narrow carriageway of the streets in Balmain. Recent government announcements indicate the intention to extend the light rail to Leichhardt along Norton Street. It would make better sense to create good pedestrian connectivity to the existing rail with due to access issues across the Rozelle Marshalling Yards means that the light rail is only single loaded. The major population catchment being south of the Marshalling Yards.

Walking and cycling using the ANZAC Bridge (top) much more arduous than if using the Glebe Island Bridge access (lower image) the bridge could open and close at regular advertised times.

1.3.5 Pedestrian and Cycle Links

The Bays Precinct in its entirety is very poorly integrated to the local pedestrian and cycle network. The area presently acts as a barrier pedestrian movement. Cycle paths along ANZAC Bridge are good quality but allow almost no interaction with the surrounding environment.

The present cycleway across ANZAC Bridge may be under threat due to the Cross City Tunnel. On the 8th of October 2004 the RTA* announced the possible expansion of the ANZAC Bridge to accommodate the expected increase in westbound traffic following the opening of the Cross City Tunnel in 2005. The additional lane will require reorganisation of the bridge and may even result in the replacement of the pedestrian and cycle connections.

White Bay Power Station and Surrounds : Structure Plan 15
1.4 Historical Development

"Two main forces have been instrumental in the development of ... (the area), its geography and its industrial history... The deep water edge provided both the opportunity for water transport and water based industry that was the mainstay of the economy until recent times... (however) From the 1970s economic and technological shifts together with rising land values in the inner city and rising appreciation of inner city locations led to a de-industrialisation, a retreat of maritime and port activities and a residential regeneration process. This encouraged both conservation of the character of the suburbs and redevelopment of former industrial sites". This brief history of the Balmain peninsula could be applied to any number of harbour side locations in and around Sydney. The rapid transformation of large areas of Sydney’s harbour lands since the 1970s from industrial into other uses prompted the government to announce in its Ports Growth Plan in October 2003 that Glebe Island and White Bay maintain working port facilities until at least 2012.

Refer to shrinking harbour port land figure above.

The following plans illustrate the evolution of these lands over time especially the process of land reclamation, subdivision patterns and realignment of residential areas to accommodate the industrial activities of the power station and the marshalling yards.

1.5 Urban Design
Pre-1855

- Mullens Street terminates at the tidal mudflats
- Abattoir Road
- Historic Abbatoirs

Approximate Location of White Bay Power Station Site
Approximate Location of Rozelle Marshalling Yards Site
Approximate Location of Current Shoreline

Source image adapted from White Bay Power Station Pre-Masterplan Study
1889

Land subdivided into small residential and business allotments

Approximate Location of White Bay Power Station Site
Approximate Location of Rozelle Marshalling Yards Site
Approximate Location of Current Shoreline

Source: Image adapted from White Bay Power Station Pre-Masterplan Study

White Bay Power Station and Surrounds: Structure Plan
A dyke at the low water mark results in the reclamation of 12 acres of land.
Fine grain, working class residential development of Balmain and Rozelle

1903

Approximate Location of White Bay Power Station Site
Approximate Location of Rozelle Marshalling Yards Site
Approximate Location of Current Shoreline

Source: Image adapted from White Bay Power Station Pre-Masterplan Study
The street grid of Rozelle extends into parts of the current Rozelle Marshalling Yards site.

Eastons Park is a waterfront recreational area.

Historic Annandale steam ferry wharf.

1903

Approximate Location of White Bay Power Station Site

Approximate Location of Rozelle Marshalling Yards Site

Approximate Location of Current shoreline

Source: Image adapted from White Bay Power Station Pre-Wharfplan Study

White Bay Power Station and Surrounds: Structure Plan
Reclamation of Whit's Creek estuary to form the marshalling yards
Current Situation

Source: Leichhardt Municipal Council Zoning Plan
Approaches

The future success of the subject lands depend upon a sound urban design vision and this process begins with a robust and appropriate structure plan. Too often in Sydney's recent history have harbour side lands suffered as a result of short term greed and poor planning. (see image below).

The following urban design approaches will be used to inform the project design phase. The first, 'restorative development' looks at an integrated design process, and the second looks at the concept of drawing cues for identity from the existing 'cultural landscape' and morphological past.

Public domain improvements at Blackwattle Bay come to an abrupt halt at the edge of the redevelopment site. To avoid this a developer's levy or other method should be used to ensure an integrated and complete public domain.

1.5.1 Restorative Development

1.5.1.1 The Pioneer mode of Development

The majority of focus within the architectural and construction industry is based upon a notion of development dubbed "pioneer mode" by Storm Cunningham. Cunningham comments "When growth has been desired, we have automatically defaulted to 'pioneer' mode: develop raw land, extract virgin resources, and so forth". However due to changing trends in property development there has been a growing interest in the concept of "restorative development".

Cunningham attributes the growing importance of restorative development as a function of three crises that have hit most local governments: "those of constraint, contamination and corrosion". These concepts are summarized below:

Constraint

The constraint crisis results from the recognition that all greenfield lands are already serving some function that someone wants to protect. "Developing a property will create a new asset but will likely destroy existing values in the process". That which is
destroyed might include heritage, ecological habitat, farmland or simply green space.

**Contamination**

The contamination crisis obviously relates to contaminated land. The solution is to resolve the contamination by remediation and redevelopment.

**Corrosion**

The corrosion crisis relates to the fact that much of a city's older infrastructure and buildings are deteriorated and need to be renovated or replaced.

More specifically Cunningham refers to restorative development of former industrial sites.

...accomplished through a combination of brownfields remediation, infrastructure restoration, heritage restoration such as the adaptive reuse of old factories and warehouse buildings, stream/wetlands restoration and reforestation.9

1.5.1.2 Implications for this project.

The restorative development of the subject sites should aim to address those issues raised by Cunningham. More specifically these should include the:

- Adaptive reuse of the heritage power station;
- An integrated approach regarding a structure plan for the various SREP 26 master planning precincts (ie the White Bay Power Station, the Port Lands, the Rozelle Marshalling Yards etc);
- Restoration of the natural environment;
- Restoration of infrastructure; and
- Consideration of existing elements that may be restored or adapted to suit future needs (eg Glebe Island Bridge, buildings, railway lines etc).
1.6 Cultural Landscapes and Places

1.6.1 What Are Heritage Places and Cultural Landscapes?

Essentially a place is a space that carries a certain meaning or significance to people. Social attachments are intertwined with spatial perception. The essential concept is simple enough but the epistemological problems Hayden alludes to include the difficulty with quantifiably measuring 'significance.' Because all people have different value systems different people will rank the significance of different places to varying degrees. A place that may be a highly significant space to one person may be an insignificant space to another.

Before it can ever be a repose for the senses, landscape is the work of the mind. Its scenery is built up as much from strata of memory as layers of rock. A 'heritage place' is usually (although not always) a significant place that forms part of the 'cultural landscape.' The classical definition for a 'cultural landscape' remains that defined by Sauer in 1925 which is repeated below:

The cultural landscape is fashioned from the natural landscape by a culture group. Culture is the agent; the natural area is the medium; the cultural landscape is the result. Under the influence of a given culture, itself changing through time, the landscape undergoes development, passing through phases, and probably reaching ultimately the end of its cycle of development. With the introduction of a different—that is alien—culture, a rejuvenation of the cultural landscape sets in, or a new landscape is superimposed on remnants of an older one.

The superimposition of future development to the White Bay Power Station and Kozelle Marshalling Yards needs to be in a manner that is responsive and sensitive to the older cultural landscape.

Further to heritage sensitivity the complex historical layering of the site provides a rich picking ground from which an interpretation strategy may draw upon (discussed further in section 3). The interpretation strategy should aim to communicate the "strata of memory" as stories that may be told to the community and visitors thereby increasing the resonance of the site's inherent identity.
1.6.2 Why Protect heritage places and which places should be protected?

Reasons cited by the Australian Heritage Commission\textsuperscript{14} for the protection of heritage places include aesthetic, economic, historic, ethical, environmental, legal or even personal reasons. More specifically, the following issues were identified as justification for a site's conservation as a heritage place:

- They are a link with the past, a reminder of special moments in lives, history or culture
- They are part of a location's special identity which could bring economic as well as other benefits to the area
- They have natural or cultural values which should be passed on to future generations
- There are social, spiritual or ethical (including respect for existence or intrinsic values) obligations to do so.

When attempting to determine the significance of a site, the Australian Heritage Commission\textsuperscript{15} suggests asking a series of questions of the various sites. These questions or criteria are listed in the following table and responses given for the White Bay Power Station, the Marshalling Yards and the working Port Lands (Glebe Island, White Bay and Rozelle Bay).

![Diagram](Image)

Urban Design and Place (Source: Carrona et al.)
<table>
<thead>
<tr>
<th>HERITAGE COMMISSION</th>
<th>WHITE BAY POWER STATION</th>
<th>ROZELLE MARSHALLING YARDS</th>
<th>WORKING PORT LANDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many other places are there like this in this area?</td>
<td>This is the sole remaining undeveloped example (Ultimo Power Station has been redeveloped to become the Power House Museum)</td>
<td>Railway shunting and marshalling yards still exist in other areas around Sydney (e.g., Auburn, Enfield, Lavender Bay)</td>
<td>This is the last remnant of working harbour if Millers Point is redeveloped.</td>
</tr>
<tr>
<td>How important is this place compared to other similar places in this area or in other areas of the country?</td>
<td>Exceptionally important (as the only example in Sydney with a 'representativesample of machinery in-situ')</td>
<td>Not significantly - greater benefits could be achieved from redevelopment rather than preservation</td>
<td>Exceptionally important as it is the last living landscape demonstrating Sydney's extensive maritime history</td>
</tr>
<tr>
<td>How important is this place to your community or group compares to other similar places in the area of your community?</td>
<td>Important historical centre for employment for local people</td>
<td>Historic centre for employment</td>
<td>Important local centre for employment</td>
</tr>
<tr>
<td>What is the physical condition of the place relative to other similar places?</td>
<td>Very good with a representative sample of early 20th Century industrial machinery</td>
<td>Many of the railway tracks are in a deteriorated state</td>
<td>Still functioning (although some areas are poorly used and unsightly - cluttered with industrial debris)</td>
</tr>
</tbody>
</table>
Based upon a simple application of the heritage commission criteria it can be safely stated that the White Bay Power Station and the port lands are significant heritage places worthy of preservation and/or interpretation. The Rozelle Marshalling Yards appear to be much less significant (and no heritage study/statement could be found to indicate otherwise). Based upon the recognition of these varying degrees of significance this report proposes an urban design response that maximises the preservation of the White Bay Power Station and its curtilage (the Conservation Management Plan suggests that the White Bay Power Station site boundary should be the minimum curtilage – this area includes a representative sample of the historic hard surfaced industrial landscape setting). Lost development potential is offset against increased development within the less significant Rozelle Marshalling Yards.

1.6.3 Why is the preservation of Cultural landscapes important to urban design?

Preservation of the White Bay Power Station and port lands is deemed important because cultural landscapes serve to add diversity and create a sense of identity to communities in particular geographic regions.

Kevin Walsh suggests the postmodern condition brings with it a "feeling of placelessness". Kevin Lynch concurs when he states "good environmental image gives its possessor an important sense of emotional security". This placelessness Walsh argues has its roots in the process of modernization witnessed during the eighteenth and nineteenth centuries. This is because, Walsh argues,

Each stage of capital has brought with it a new experience of space. With each 'advance' of capital there has been a kind of distancing of the social; people have become removed from the economic system of production which they served. In the early stages of economic development people were closer to the actual market systems in which they operated. For the majority, life was dominated by the locality: personal interactions, economic production and exchange largely occurred within a set of relatively small, special contexts.

This general weakening of the feeling of attachment to one's surrounds increases the urgency for people to preserve those spaces that have meaning to them. In an increasingly homogenous, global and generic world people cling to signifiers in the urban fabric and surrounding landscape that still maintain significance to them. While the
operation of the power station is still in living memory. The stories of former employees and locals should be documented to inform an interpretation program. Indeed, curators from the Power House Museum expressed their interest in being involved with any future interpretation strategies for the White Bay Power Station and its site when I conversed with them in October, 2004.

1.6.4 Drawing Upon the Past to create an identity for the future

Regarding the role of and attitude toward heritage places in contemporary landscapes Raza comments that,

- Much of current urban landscape planning is generic... A planning system that is responsive to a particular environment will differ from a generic response. It is not the uniformity of urban systems but the specificity of urban systems that leads to cultural identities.

The study area lands have accommodated the following land uses over the last 200 years;

- Estuary (much of the 2 sites are on reclaimed land)
- Farmland,

- Maritime activity,
- Housing,
- Industrial Uses,
- Railway yards.

Identification, preservation and where possible careful replication of similar typologies constitute an appropriate urban design response to making vital communities that maintain and develop a sense of place. However care must be taken when attempting to replicate historic precedents of successful places so as not to be left with an urban environment that is a caricature of the place it wants to be. Identification of existing identifying typologies and elements can be used as a basis for creating urban design principles for development that attempts to replicate more than a merely superficial aesthetic resemblance to the historic landscapes of White Bay Power Station, the Rozelle Marshalling Yards and the adjoining Port Lands.

As well as built form, the naming of streets, reserves and walkways should adopt local names associated with all the stages of the area's history so as to embed links between past events and the present occupier's of the space.
Leichhardt Council Zoning Plan - the zoning plan indicates the White Bay Power Station and Rozelle Marshalling Yards as part of the SREP 26 Zoning.
Section 2

2.1 Relevant documents regarding the site and surrounding context

2.1.1 Sydney Regional Environmental Plan no. 26 City West Bays Precinct (SREP 26) Summary

SREP 26 is the primary planning document affecting the subject lands as well as the rest of the Bays Precinct. The Bays Precinct includes:

- Rozelle and Black Wattle Bays Maritime Precinct
- White Bay and Glebe Island
- The White Bay Power Station, and
- The Rozelle Marshalling Yards.

The SREP outlines a series of objectives for lands in this zone. Primarily these objectives revolve around the continued ability of this land to support commercial ports and associated uses. However, the SREP also includes the following objectives for the Precinct:

- Encourage a mix of land uses which generate employment opportunities, particularly in relation to port and maritime uses, and
- To allow a mix of uses which generate employment opportunities in the White Bay Power Station Site.

The SREP also:

- Identifies Heritage Items within the Precinct (See Figure);

And recommends that:

- the siting and form of development in all areas must consider impacts on views from within the Precinct and across the Precinct form surrounding areas
- Public recreation areas are to provide a range of recreational opportunities for those working in and visiting the Precinct.
- Links for pedestrians, cyclists, and persons with disabilities are to be provided through the Precinct.

SREP 26 identified areas subject to master planning (see Figure page 34) these follow historic land use zoning boundaries. The current state of these master planned lands is included in the following table:
SREP 26 Lands subject to the master planning process (includes White Bay Power Station (3) and Rozelle/Wharf St Marshalling Yards (4). Carving the industrial lands into master planning precincts could result in a very unsatisfactory piecemeal urban structure.

SREP 26 Heritage (showing the White Bay Power Station (item 1)
In order to develop a robust structure plan it is difficult to consider the various master plan areas separately. A structure plan needs to consider an integrated strategy for dealing with the Bay Precinct land, namely the Power Station, Rozelle Marshalling Yards and adjoining port lands.

A structure plan should not be restricted to those master planning boundaries. It should attempt to deal with the land simply on a piecemeal site by site level, as the current legislation encourages. This is particularly true for the Rozelle Marshalling Yards and Power Station sites that fringe residential/commercial edges of Balmain and have the opportunity to re-stitch linkages within these suburbs caused by an industrial zoning almost 100 years ago.

### 2.1.2 White Bay and Glebe Island Master Plan Summary

The White Bay and Glebe Island Master Plan essentially supports a functional continuation of port activities at these locations. The master plan focuses on methods to maintain and enhance current port activities with additional considerations relating to preferred built form and possible public facilities including pedestrian activities. With the exception of pedestrian activity, little consideration is given to the surrounding industrial lands although access to port lands via the Rozelle Marshalling Yards is indicated. Refer to diagrams (right).

### 2.1.3 Waterways Rozelle and Blackwattle Bays Maritime Precinct

Prepared by DIPNR in 2002 this Master Plan generates a vision and building controls for the Rozelle Blackwattle Bay maritime industrial lands. Refer to figure page 38.
The major access point to port lands is indicated as being from City West Road.

Port lands are "secure lands" i.e., inaccessible to the public. The Master Plan indicates possible expansion of secure lands, presumably to accommodate the preferred entrance. Extending the secure lands would have the detrimental effect of preventing access to the Power Station and Glebe Island bridge under Victoria Road through the viaduct.

A 12m height is indicated for a building envelope between the White Bay Power Station and the Harbour. Negotiations should take place with Sydney Ports to ensure that any new building does not interfere with harbour views from the White Bay Power Station.

A number of heritage items have been identified in the vicinity and could be incorporated into any broader interpretive trail. The US landing memorial, currently on secure port land is earmarked to be moved. It could be moved somewhere in the vicinity of a pedestrian trail that could cross the Glebe Island Bridge.
2.1.4 Other Concepts / Proposals

No information was available from SHFA regarding the Rozelle Marshalling Yards but anecdotal evidence would suggest mostly light industrial or residential uses have been proposed.

The White Bay Power Station is a different matter. The following are some of the suggested uses along with some comments regarding the relevance of the suggested use:

- Factory Direct Retail (this use doesn’t draw upon the site’s heritage – only the site’s physical attributes – large internal volumes and proximity and exposure to a large movement economy).
- Institutional, Sporting or Cultural uses – can draw upon the site’s heritage of site but the cost of restoring the building for low revenue raising uses has little financial appeal.
- Desalination plant – an excellent idea for the adaptive reuse of a functioning power station but with the mechanical infrastructure largely removed or decommissioned – a very expensive exercise to regenerate however it should be considered if possible.

2.1.5 White Bay Power Station Pre-Master Plan Study Summary

In 1997 Hill Thalis Architects developed a Pre Master Plan Study that investigated a variety of future uses for the site including institutional, retail/commercial, and Community use / sporting facilities. The Pre Masterplan study is a comprehensive study providing background into the site however, it fails to adequately solve access issues with the site relying upon the single Roberts Street entrance to deal with all traffic to the site. The Masterplan also proposes a large amount of the site to be dedicated to new structures to accommodate the perceived parking requirements. The location of the proposed parking stations seems to be somewhat insensitive to the existing building and does not offer much potential scope for the improvement of the surrounding landscape.
Rozelle Marshalling Yards
White Bay Power Station

Rozelle and Blackwattle Bay
Master Plan

Extent of master plan land

White Bay Power Station and Surrounds: Structure Plan
2.1.6 White Bay Power Station
Conservation Management
Plan Summary

Completed in January 2004 the Conservation Management Plan (CMP) is cited by SHFA as the key planning document in determining the power station’s future use. The CMP is an extremely comprehensive 5 volume report. The key aspects of the report is summarised below:

- The power station is a widely recognized, highly visible landmark. Described in the CMP as "the most important surviving industrial building in the area" (p.9).

- "The White Bay Power Station is of exceptional significance to NSW 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 to power reticulation." (p.10)

- "The site 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 areas would not places significant fabric or qualities of these areas at risk of alteration, damage or removal."

- "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. In principle those changes which area minimal, with least impact are preferred to those with greater impact on the significance of the place, its spaces and elements."

Landscaping and Site generally

- The White Bay Power Station CMP notes that the site is a degraded industrial landscape (p.48). Inspection of the only area which would have had any soft landscape elements would have been the areas north west of the 1948 switch house and control room and its adjoining 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."
• The White Bay Power Station CMP recommends "those areas of the site which originally acted as or housed storage or industry related facilities should remain as a hard landscape areas. Soft landscaping should be confined to those areas which were landscaped as such ie. North and west of the 1948 control room and switch house and their attendant transformer yards". (p.42).

• New landscaping should be inspired by and respond to the place and incorporate interpretation of remnant building elements and removed structures. Visual and physical links within and through the site should be respected and retained and may be enhanced by new structures and access ways". (p.42)

Access points

Public access points should preferably utilize historical or significant entry points. New entry point should be reinstated along its original route both for interpretation and purposes as well as servicing and maintenance (to be negotiated with Sydney Ports and State Rail Authority). White Bay Power Station was located close to the harbour for access to its water for cooling in the condensers and it would be desirable to establish an access to the water if this were possible. This would be dependant on the appropriateness of waterfront access to any future use of the Power Station.

2.1.6.1 Future use and development

The CMP suggests a range of future uses and developments may be considered appropriate for White Bay Power Station either singly or in combination.

Including:

• Interpretation / museum use;
• Industrial / workshop use;
• Bulky goods / retail;
• Venue / film location;
• Education Use;
• Commercial / office use.

Residential use is considered inappropriate because of the:

• Site contamination levels;
• The significance of the place;
• Proximity of the port operations.
Residential use is not permitted under the planning instruments.

Further to the above recommendations were the following points:

- Uses which have the least impact are preferred;
- Uses which are inspired by and support the significance of the place are preferred to those which do not.

### 2.2 What Use Should the Site Contain?

Whichever use is chosen it should best satisfy Triple Bottom Line approach, meaning the proposal needs to be Environmentally, Socially and Economically sustainable in accordance with SHFA's vision to do so.

A mix of uses seems appropriate and turning the whole building into a retail outlet does not seem to do justice to its heritage status and would likely result in the carving up of the large internal values into smaller retail spaces, thereby destroying one of the building's finest qualities.

Among the possible benefits arising from treating the power station and marshalling yards as one site is that revenue from residential development of the marshalling yards could be used to assist in the funding of an appropriate cultural, or institutional use within the major spaces, with a smaller retail component in less significant internal volumes.

### 2.3 Density

At present the Rozelle Marshalling Yards contains approximately 11.8 ha of industrial land. Industrial land is presently has an FSR of 1:1. If the land were to be developed as residential it is proposed that approximately 30% be dedicated as parkland and rail corridor and the remaining 70% be rezoned as residential. The site is located at the colliding zone of several land uses. It is also in close proximity to arterial road access and public transport (the Rozelle Bay light rail stop as well as a number of bus routes). The relative autonomy of the site and the buffer provided by vegetation and the City West link provide an opportunity for buildings on the site to achieve moderate heights without presenting any adverse effects to the surrounding developments. By achieving greater heights there is the possibility of gaining views of Sydney Harbour from higher floors. For the above reasons it is proposed that the FSR of the site be raised to somewhere nearer 2:1 FSR.
This would mean around 8.25 hectares of land would be available for development. Leichhardt Council already experiences one of the highest residential densities in Sydney, around 50 dwellings per hectare\(^5\). However, this density is much lower than densities achieved in comparable cities in other countries, for example, Japanese cities are likely to have upper residential densities 4 times this high.

According to Carmona et al\(^7\), UK research indicates that net densities of 100 persons per hectare (approx. 40 dwellings per hectare) is necessary to sustain a good bus service. Llewelyn Davies\(^5\) indicates a net density of 240 persons per hectare (approx. 90 dwellings per hectare) is necessary to sustain a train service.

A density matrix analysing average densities based upon UK case studies by Llewelyn Davies\(^5\) indicates that for sites sharing similar geographical characteristics as the SREP 26 lands, that is, urban lands along transport corridors and close to a town centre Ped-shed (Balmain), densities in the vicinity of 300-450 persons per hectare or 110-160 dwellings per hectare. The density matrix also specifies that these figures would consist of mostly flats and have a low car parking provision (less than one space per dwelling).

Although these figures are stated as being typical, it should also be noted that these are provided as a measure only and that the site and not just desired density levels should dictate the net density. This is a notion supported by Jane Jacobs who concluded 'proper' city densities were 'a matter of performance'. Regarding performance, Llewelyn Davies states that density profiles should be varied. Highest densities and built mass should be located around centres, public transport access points, parks and riverfronts, for example.\(^7\) The NSW state government's recent planning policies seem to concur with this view. Among the stated aims of the Integration of Land Use and Transport Planning (SEPP) 66 are:

- Improving accessibility to housing, employment and services by walking, cycling and public transport.
- Improving the choice of transport and reducing dependence solely on cars for travel purposes,
- Moderating growth in the demand for travel and distance travelled, especially by car,
- Supporting the efficient and viable operation of public transport systems.
2.3.1 Funding Concept

The creation of new infrastructure and the restoration of the White Bay Power Station will be an expensive. It will certainly be tempting for SHFA to offload the property to a developer who may not have the best use for the site in mind but the best financial arrangement for SHFA.

The similarly sized Bankside Tate Gallery project in London had national government support and was funded by profits of the Lottery Commission. If the subject site does not receive a large funding grant from the government an alternative source of funding that would be more likely to retain the integrity of the Power Station, and to comply with the SREP 26 and CMP recommendations, would be to develop the Rozelle Marshalling Yards, at least in part, as residential and mixed use land. A development fund will be established that requires a levy or percentage of the sale price of each developed unit be placed into a funding pool that will be used to assist in offsetting the costs required to provide access infrastructure, restoration of the Power Station and rehabilitation of the surrounding land.

The following figures give a very general approximation of a possible scenario.

- Rozelle Marshalling Yards total area 11.8 hectares
- 30% land to be preserved as open space dedications
- 70% of land to be developed
- 70% of 11.8 hectares is approximately 8.25 hectares or 8,250,000 m² of floor space.

Assuming the average dwelling is 100 m² and sells for approximately $500,000 then a developer’s levy of around $20,000 per dwelling would not seem too excessive and would result in a restoration fund contribution of around thirty million dollars (assuming an average residential density of 150 dwellings per hectare based upon the Llewelyn Davies analysis indicating that this is an appropriate density for such a location).
2.4 Patterns

The site’s history, planning controls and funding objectives set the background, the following sections describe possible methods for the exploration and resolution of the site’s many issues.

Numerous designers including Christopher Alexander and Ian McHarg have drawn upon residual patterns in the landscape as a basis upon which to design. Tom Turner in the City as Landscape, goes into some level of detail into analysing a theory of patterns and possible applications of patterns to designers.

When making a new place, planners and designers must know what factors made the existing place, how places can be changed, and what makes people judge places as ‘good’ or ‘bad’.

Turner identifies the following four categories of patterns:

- Primary Patterns;
- Secondary Patterns;
- Tertiary Patterns;
- Quaternary Patterns.

(Refer to Figure)

A description of each of these patterns is given by Turner and is summarised below.

- Primary patterns are patterns found in the existing landscape. Ian McHarg pioneered the use of map overlays as a design tool in Landscape Architecture. Primary patterns include non-human patterns for example, geology, ecology and hydrology.

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White Bay Power Station and Surrounds: Structure Plan
2.5 Analysis Plans

2.5.1 Open Space, Geomorphology and drainage patterns (left)

- Secondary Patterns are found in human and rural landscapes resulting in the behaviour of human communities who adapt places to satisfy needs for food, shelter, transport, comfort and security.

- Tertiary Patterns aesthetic patterns result from the artist's imagination or the aesthetic appreciation of nature.

Quaternary Patterns are tried and tested combinations of other patterns. They are the proven successful combinations, "Their place in outdoor design, which is a site specific art, is as components. Like a sundial, no outdoor design can be exactly right for more than one point on the earth's surface."

This project draws upon an analysis of the existing layers and patterns to identify opportunities and constraints to suggest a new urban structure.

Numerous existing parks can be found in the area. Redevelopment of the industrial lands provides an opportunity for the connection of these parks via a series of green corridors/pedestrian and cyclist links.

Historical plans indicate that the land now occupied by the Rozelle Marshalling Yards were formerly a creek estuary. Anne Whiston Spiri conducted studies that traced accounts of collapsing or subsiding houses in Philadelphia and traced all occurrences to bad sub-surface conditions, early topographic maps overlaid upon the street plan revealed that these houses had been built over a stream that had been put in a culvert³⁶. Although no hydrological studies were available through SHFA or Leichhardt Council it can be assumed that the there is sub-surface engineered drainage of the site. White Creek has been placed into a concrete channel and presumably has been moved in a southerly direction during the various stages of the site's development. Drains emptying into the White Creek Channel from the north provided visual evidence of some form of sub-surface engineered drainage, although this could merely accommodate stormwater drainage from the City West Link. Whatever the circumstance it seems important that a natural hydrological overlap be incorporated into the redevelopment scheme, if not to reinstate a bio-engineered creek corridor, then at least to allow surface drainage through a green corridor system.
Over successive years drainage has been engineered as shown in the photographs to the right. There exists an opportunity to reprise the natural drainage on the Rozelle Marshalling Yards site.
3.5.2 Terrain Vague

The vacant lot or Trancek's 'lost space' has been described by the Catalan architectural theorist Sola-Morales as "terrain vague". Terrain vague, he describes, includes "areas abandoned by industry, by the railways, by the ports... areas underutilised because they are cut off by motorways...". The White Bay Power station and Rozelle Marshalling Yards are the archetypical terrain vague.
3.5.3 Roads

The urban grid in the vicinity of the subject sites could be described as eroded or degraded. On the Rozelle Marshalling Yards it has actually been erased as can be evidenced in the historic plans.

Caroma et al.\textsuperscript{13} state that the transformation from the finely meshed grid of traditional urban development to road networks surrounded by superblocks is a result of planning decisions to accommodate fast-moving vehicular traffic. Separation of vehicular and pedestrian movement patterns was a process begun in the 18\textsuperscript{th} and 19\textsuperscript{th} centuries through the introduction of pavements for pedestrians, leaving the centre of streets for vehicles, \textquotedblleft where pedestrians had to beware\textquotedblright. In the instance of the City West Road portions of it do not even provide footpaths, this is an exclusive vehicular zone. Similarly the introduction of the Rozelle Goods Yards are the legacy of a purely functionalist rationalism.

Rather than a single movement system numerous movement patterns exist and are often superimposed upon one another. Caroma et al. suggest that major highways form a layer of their own, characteristics they display include reduced number of pedestrian crossings, limited number of connecting roads. This absence of links results in discontinuity in movement patterns and reduced permeability\textsuperscript{29}. The nature of the major movement corridors of the City West Link means it is unlikely to be retrofitted to accommodate increased permeability, more likely the increase in traffic resulting from both the M4 East link and the Cross City Tunnel will reconfirm the vital nature of the City West Link to the arterial movement of vehicular traffic between the City of Sydney and the Western Suburbs.
The Goods Yards are built on the site of a reclaimed estuary and involved the removal of a portion of residential dwellings in the process. The combined width of the drainage channel, City West link Road and Rozelle Marshalling Yards represents an area of approximately 130 metres wide by 900 metres long of impermeable super block (Refer to figure on page 50).

Henri Lefebvre (1991) describes how urban space is "sliced up, degraded, and eventually destroyed by ... the proliferation of fast roads". Indeed the City West Link and Victoria Road intersection effectively carves Rozelle, Balmain and Lilyfield into 3 precincts. (Refer to figure page 52).

3.5.4 Access and Movement – Vehicular, Pedestrian, Cyclist, Ferry/Boat

Trancek in his seminal text Finding Lost Space describes a process where modernist planning practice has resulted in the erosion of traditional urban space and created vast and incoherent structureless spaces that he terms 'lost space'. Trancek suggests that lost space is a bi-product of ill-shaped and ill-planned cosmetic treatment of space without considering the three-dimensional relationships between buildings and spaces and without a real understanding of human behaviour.

In this process urban space, Trancek continues, is rarely thought of as an exterior volume with properties of shape and scale and with connections to other space. Trancek comments that spaces that are particularly susceptible are highways, railway lines, and waterfronts, where major gaps disrupt the overall continuity of the city form. The combined White Bay Power Station and Rozelle Marshalling Yards is a conglomerate of all three usual suspects. As a result pedestrian movement is "interrupted, disjointed and disorientating". "Identification of the gaps and overall patterns of development opportunities should be done before any site-specific architecture or landscape architecture is designed". The resulting structure should aim to result in a spatially connected public environment.

The creation of a super block around an impermeable core presents few options for pedestrians other than a long walk around the perimeter, however the possibility to redevelop the Marshalling Yards a tabula rasa provides opportunities to rectify this situation.

The structure plan should incorporate the superimposition of a new movement pattern onto the existing landscape that
The superblock

Existing Structure (Barriers to pedestrian movement shown as heavy black lines).
Arterial roads

The divisive nature of the roads serves to:

- Create an inefficient light rail service through severing links to potential commuters north of City West.
- Sever the harbour from residential areas
- Sever the Power Station from the light rail
Isolated Precincts

The Major arterial roads in the area are Victoria Road, City West Link and the Crescent. These roads carve the formerly well integrated suburbs into several precincts. This division is further exacerbated by the presence of large tracts of industrial land that form the 'Bays Precinct' and include the Rozelle Marhalling Yards and White Bay Power Station.
aims to connect various, presently isolated, elements.

The adjacent figure illustrates the location of major elements for connection and suggests desire lines for movement between these elements.

Recognising the need for generating a site-specific "spatially connected public environment" as espoused by Trancek, relies upon the recognition of these desire lines as a critical starting point.

3.5.5 Public Transport

Frequent bus services already exist along Victoria Road, with two stops directly outside the White Bay Power Station.

The existing light rail is only single loaded and does not integrate well to the north due to the lack of pedestrian access through the Rozelle Marshalling Yards, combined with the divisive nature of the City West Link. The present light rail stops appear to be poorly patronised by their small population catchment, an unfortunate inefficiency for a well-serviced line. Indeed the light rail was given a very poor review by the recently published Sydney Planning or Politics. The review states, "It is doubtful whether even the greatest proponents of the light rail could declare the new system a success". The light rail stops twice within close proximity of the Rozelle Marshalling Yards, improved pedestrian connections could easily make this a double loaded transport corridor and aid in the bolstering the light rail system.

It does seem wasteful that a single loaded light rail station should run through a low density suburb. The Rozelle Marshalling Yards proximity to the light rail system would benefit most if higher densities than those permitted in the Leichhardt FSR plan (Refer to figure page 55) were to be allowed for the development. Portland Oregon, with its "Smart Growth" policies has prescribed limits to city growth boundaries, a 1994 study by the city's Metropolitan Service's indicated that through a concerted effort to focus intense residential and commercial activity around the city's light rail stations it would be able to keep almost all future development within current growth limits. Brownfield sites such as the Rozelle Marshalling Yards present a great opportunity for Sydney to take advantage of the possibility for densification of infill site in an attempt to stem urban sprawl and at the same time

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Desire Lines

- Movement desire lines interrupted by vehicular traffic along the arterial roads of Victoria Road, City West Link and the Crescent. These desire lines need to be resolved in terms of improved pedestrian connections at least.
reduce car use and encourage public transportation.

3.6 Interpretation Trail

An emphasis on a strong sense of history and heritage will provide the new community with a focus and a feeling of continuity frequently absent from newly planned developments. An interpretation trail will aid in reinstating a forgotten or fading cultural landscape into the consciousness of the local community and visitors to the site. The interpretation trail will become an element of interest in itself, attracting visitors interested in conducting a heritage walk.

The interpretation trail should draw upon the site's residual, layers of history and recognise them as important components of any new development. Similarly where new elements are warranted these should reference the inherent genius loci, drawing upon elements both natural and cultural in origin of this complex landscape. Information for the trail can be sourced from heritage items, historic plans and anecdotal evidence. A Public Interpretation Strategy should be developed to guide heritage interpretation.

The interpretation trail should aim to create a series of interesting "places" along a string of pedestrian movement that draws upon the inherent cultural and natural memories layered within the landscape to guide future development within the broader study area. By undertaking appropriate development in relation to local heritage its appreciation and understanding can be furthered within the wider community.

The interpretation trail can utilise the same signage strategies proposed in the Glebe Island and White Bay Master Plan, this signage draws upon industrial port materials for inspiration (refer to figure below). Any interpretive trail completed for the White Bay Power Station exterior land, the Rozelle marshalling yards and the Glebe Island Bridge should be created in collaboration with interpretation strategies for the Sydney Port land. Collaboration in the production of an interpretation strategy will result in a common visual character that helps tie together the various elements of the interpretive trail.

![Pedestrian Sign Diagram]

Type A
To be located along pedestrian or cycle routes such as Anzac Bridge and Anzac Memorial. Pedestrian scale sign for information, History, descriptions of facilities and the like. Made out of a foliate sheet of Sydney Ports orange metal. Cut out text and white text block.

Source: Glebe and White Bay Master Plan

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The Glebe Island Bridge could be reopened for the use of pedestrians and cyclists. If the RTA utilise the cycle path on Glebe Island bridge to accommodate traffic increases due to the Cross City tunnel and M4 east extension, then the Glebe Island Bridge makes the perfect replacement. It also provides a more intimate connection to the harbour and an easier grade. The bridge mechanism could be opened at regular intervals to allow boat passage.

An interpretive trail should incorporate the Historic and now disused Glebe Island Bridge seen here behind the ANZAC bridge (source Glebe Island and White Bay Master Plan)
The Power Station sits in a sea of open space surrounded by fine grain older street defining residential terraces and warehouse typologies.

Source: Image adapted from White Bay Power Station Pre-Masterplan Study.
The White Bay Power Station

Although a particularly grand version, the White Bay Power Station shares the same typology as the other much smaller harbour side industrial buildings in the area. That is of a building in space. The White Bay Power Station breaks the orientation of the surrounding grids, however it is perpendicular to the ANZAC bridge axis, making it an important visual focus to people approaching by vehicle.

Warehouses

In stark contrast to the White Bay Power Station neighbouring warehouses lining Robert Street provide a very clear edge to the street and define the edge of the precinct.

Residential Streets

The prevalent fine grained terrace houses provide a uniform edge that defines the space of the street in the residential suburbs of Balmain. The height to width ratio is approximately 1:5:1. Caroma et al. suggest a height to width ratio of between 1:5-1:25:1 creates a good sense of enclosure in a street.

New port land residential development

This new development on former industrial land opposite White Bay lacks a sense of definition. Although essentially a perimeter block development, large set backs leave these apartments feeling like they are floating in amorphous space. Any development proposed for the Rozelle Marshalling Yards land should avoid this lack of definition and aim to more closely replicate the morphological pattern of the traditional terrace houses which are oriented toward, and define, the street edge.
KEY ISSUES

Major Arterial roads sever connectivity between suburbs
Access to surrounding recreational facilities and pedestrian/cycle ways hindered due to large areas of impermeable industrial land
Poor access to the White Bay Power Station site limits opportunities for development
Light Rail Service Physically isolated from potential northern catchment/steelworks
Yards
Maintenance of a working port prevents pedestrian access to the harbour
Portactivity generates noise pollution that affects neighbouring land
MAJOR OPPORTUNITIES

Proximity to Major arterial Roads (access and exposure)

Fringed by parks and green corridors, regional cycle and pedestrian ways

White Bay Power Station is already a local landmark/identifier / iconic gateway

Proximity to the existing Light Rail network and good bus services along Victoria Road

Glebe Island and White Bay ports are some of Sydney's last working harbour land and therefore represent a living cultural landscape

Close proximity to the Harbour
CONCEPT SKETCH - 2 landscape characters

Pivotal point - the viaduct
The viaduct represents a point of constriction and acts as a gateway between the eastern port and industrial landscape and the western linear urban landscape.

Industrial landscape
Open areas punctuate by built form. Typically spaces remain uncluttered and buildings are objects in space.

Urban Development
Open Space
Rail Corridor

Ribbons of development
The western urban development follows a linear or ribbon-like pattern of development echoing the underlying drainage pattern (former creek line). The drainage pattern is the driver for the linear park and the band of residential development proposed for the higher ground fringing the existing suburb of Rozelle.

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**Structure Plan Objectives**

The issues raised in Section 1 and the various desired outcomes and competing objectives expressed in the numerous plans and proposals already put forward make it apparent that a good outcome is unlikely to result from master planning the individual elements separately. The whole precinct requires a robust structure plan into which all the other elements may be integrated.

The master planning process has a greater chance of rectifying some of the many issues that affect the site, than a less organised piecemeal development process would allow.

The primary objectives of a master plan for the site would be the:

- Improved pedestrian and vehicular linkages
- Preservation and interpretation of heritage items of significance within this cultural landscape
- Consideration of ecological, hydrological and environmental factors
- Restoration and reprogramming of the Power Station
- Provision of new parkland for recreation and also as a movement corridor for regional pedestrian and cyclist activity
- Provision of around 1500 new dwellings that help to stitch the suburbs of Lilyfield to Glebe and Annandale and provide definition to new...
WHITE BAY POWER STATION + ROZELLE MARSHALLING YARDS STRUCTURE PLAN

LANDMARK
Retention of White Bay Power Station and reinforcement of its landmark function

URBAN STRUCTURE
Improve linkages and permeability

BUILT FORM
Built form responds to context - industrial buildings in landscape, urban buildings defining space

PORT LANDS
Retention of, and good access to, port lands

CULTURAL AND HERITAGE LANDSCAPE
New development responds to heritage items, interpretive trail

SUSTAINABILITY
Encourage non-vehicular transport, rehabilitation of Whites Creek, and Access to efficient public transport

SAFETY
Avoid pedestrian/highway conflict, surveillance of open space
STRUCTURE PLAN - New Street Pattern

New streets are an extension of the existing street pattern and in some cases the reinstatement of historic streets (refer 1903 street plan)

Unable to reinstate the historic extension of Gordon Street (refer 1903 street plan) a pedestrian connection is provided instead.

Major east west spine connects White Bay Power Station and Rozelle Marshalling Yards, and provides the power station with 2 vehicular access points

Access to the Port lands is provided at the preferred entry location off City West link as suggested in the White Bay/ Glebe island Masterplan
STRUCTURE PLAN - Activity generators linked by active vector

The residential use of the western land performs support role for the mixed use commercial cultural zone.

The intersection between the Crescent and the City West link, bus interchange and pedestrian bridge to the light rail station.

Vector anchored by two generators containing dispersed retail programmes along its length to encourage pedestrian oriented street activation.

White Bay Power Station remains an iconic building in a sea of hard surfaced industrial open space. Activated by integration into a more permeable grid, and reprogramming with activity generating uses.
STRUCTURE PLAN - Major Pedestrian Movement

Connection of light rail to Rozelle Marshalling Yards via pedestrian bridges

Connection through Rozelle Marshalling Yards to regional cycle trails to the east, west and south.

Access to harbour lands and Bicentennial park in Glebe

Connection of Power Station to Rozelle Marshalling Yards and light rail.

Link across Glebe Island Bridge to Pyrmont. Advantages of this connection include the reopening of an historic bridge that is currently closed. Easier access for pedestrians and cyclists over a lower gradient than ANZAC bridge, incorporation of the bridge into an interpretive trail.
STRUCTURE PLAN - Interpretation Trail

The interpretive trail will consist of points of interest along the pedestrian and cycleways. Known points of interest are indicated in this plan.

- Historic Shorelines (could be indicated through land-cape or paving elements (Multiple locations)
- Historic Power Station
- Railway Cutting
- The Great Sydney Dyke geological monument
- Historic asbestos and associated industry (ie soap factory)
- US WW11 Lancing memorial

Subject lands - Pedestrian Connections - Interpretation point

The Working Harbour

water conduit for cooling the power station turbines

ANZAC Bridge

Silos

Glebe Island Bridge

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STRUCTURE PLAN - Public Transport

Major New City West Link bus interchange integrated with tower building, pedestrian bridge and active spine leading to White Bay Power Station

Within this zone 3 public transport modes are located within 70 metres of one another. This structure plan proposes they are linked by a building constructed over the intersecting major roads. The building offers views to occupants, a landmark to travellers and an infrastructural role for pedestrians.

Reinstall historic ferry wharfs (Refer to 1903 plan), new pedestrian connections bridging City West Link and the Crescent allow large pedestrian catchment.
Public transport Intensity, the darker the colour, the greater the number of public transport options (overlapping ped-sheds). This diagram illustrates that the White Bay Power station and the eastern end of the Rozelle Marshalling Yards are highly accessible by public transport.
Viaduct/Junction between Victoria Road and City West is an import point of construction (beneath the viaduct) and barrier (divided by the road). This point represents a junction/interface/collision point between programs and typologies, a point to be celebrated and where "events" are likely to occur.
3.6.5 Urban Structure – Axial Plan Comparison

Zone of Change

Axial Plan before Intervention

Axial Plan after intervention

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SECTION 3
infrastructural elements (roads and parks)

Section 3

3.1 The proposal – The Structure Plan Elements

3.1.1 Integrated road network

While roads are necessary to facilitate the movement of vehicular traffic the street ‘should rediscover the social role of a street as a connector that stitches together and sometimes penetrates the disparate downtown realms’.

Carmona et al. state that the development of a robust urban structure plan is important in determining the pattern of movement and in setting parameters for subsequent development.” Other factors identified by Carmona et al that influence the size and shape of an urban structure are listed below:

- Street patterns tend to be most resilient therefore it is important that they be robust and enduring;
- A balance needs to be struck between providing sufficient area for development to make it commercially viable and providing sufficient space for efficient and convenient circulation and social space;
- When dealing with brownfield sites, block sizes may be inferred by an ‘urban healing’ approach (ie working with the existing fabric and remnant fabric of previous urbanisation, re- integrating isolated fragments and re-establishing or creating new linkages facilitating movement between the new development and its surrounding context).

Leon Krier observed that in most European cities urban blocks tend to be smaller and most complex at the city centre. Small blocks offer "increased vitality and choice" and "intense social, cultural and economic exchange". The street blocks of the residential development that occupied the Rozelle Marshalling yards prior to the marshalling yards will be used as the basis for the future block size. The blocks will be a continuation of the existing urban fabric of
neighbouring streets in Rozelle. These blocks are quite small being around 70m deep.

### 3.1.2 Vectors, Voids, Envelopes, Program and Events

Discussions with Leichhardt Council and perusing the various documents on the White Bay indicate that it should be used as a retail outlet or mega mall. This would be a disappointing outcome for this heritage item. It is acknowledged that shopping and retail uses are required in this area then an alternative proposal would be to extract the floor area of the power station that was to be dedicated to retail and explode this programmatic use along the active spine between the light rail and the White Bay power station (refer to earlier structure plan activity generator diagram).

Bernard Tschumi\(^{44}\) offers suggestions for the organisation of programs within space. These various devices and strategies are summarised below:

- **Vectors** – vectors draw upon the concept of movement as generator. Vectors are used as “major organising devices” whereby “flows instead of places, and forces instead of forms” are the defining program organising factor.

Voids – programmatic activators around the perimeter of a void attempt to activate the space. “Movement vectors are a chief way of achieving this aim, the programmatic characteristics of a given project may suggest using more public activities (films shows conferences) so as to intensify the density of movements.” Tschumi also alludes to activators to generate interest in unprogrammed voids.

- **Envelopes** – explore the concept of enclosure. Envelopes are the defining edges, “envelopes also can be animated through projection, reflection, or integrated screens and therefore become events themselves.”

Tschumi also talks about dispersed or fragmented programming as at Parc de la Villette, where the program was broken down into smaller elements and dispersed as a series of superimposed points on a regular grid to create a scattered building with a series of in-between spaces that may play host to “an indeterminate set of unexpected outcomes” or “events”\(^{45}\).

In Event Cities 2, Tschumi states that “architecture is both about space and about the events that take place in that space”\(^{46}\). By identifying space, event, and movement as a mode of analysis it introduces a potential strategy applicable to a variety of programs and architectural circumstances.

With regard to the subject sites, the power...
station and movement hub building are envelopes, the active spine is a vector, along which programmatic elements are scattered. These programmatic elements activate the voids in the landscape that fringe the power station and the small plaza of the mixed-use precinct.

5.2 Structure Plan Outcomes

The new structure plan achieves the following urban design principles better than a piecemeal precinct by precinct solution. Implementation of this urban design structure will help redress the current ‘lost space’ or ‘terrain vague’ of these former industrial lands now presents a unique opportunity to create a robust, spatially connected structure plan for these lands based upon principles outlined by Turner, Trancek, Ischumi, Cunningham, Llewelyn-Davies, and others that will:

- Create of an integrated street grid that helps to restitch the neighbouring residential suburbs
- Incorporate the presently isolated elements of the White Bay Power Station and the port lands into the surrounding urban fabric.
- Utilise “urban healing” and the regeneration of historic street patterns,
- Create a residential area with higher densities but similar morphological characteristics as the surrounding residential areas, upon the former Rozelle Marshalling Yards site
- Create pedestrian connections that bridge the divisive City West Movement corridor,
- Absorb around 1500 new dwellings within the ped-shed of the existing light rail,
- Create a mixed use employment, retail and residential hub at a transport node, that has high visual exposure to the City West Link,
- Better connect workers in the existing employment lands to public transport facilities,
- Provide funding to assist in the sensitive adaptive reuse of the White Bay Power Station so that it may house a community generating institutional, educational or cultural purpose,
- Accommodate and restore natural drainage patterns, while creating water features/open space for the community,
- Create a publicly accessible connection to the harbour,
- Heighten awareness of the heritage values inherent in these cultural landscapes through the creation of an interpretive trail,
- Disperse programmatic elements along a movement vector anchored by two activity generators (the White Bay Power station and the Light rail)
- Provide access to the port lands directly from the City West link
- Reinstall the now abandoned Glebe Island bridge as a pedestrian connection to the city while providing exposure to the Cultural landscape of Sydney's last remaining working harbour.

5.3 The Rozelle Marshalling Yards

Rozelle Marshalling Yards outcomes:

- Development of the site to generate revenue for the adaptive reuse of the White Bay Power Station as a Cultural, Institutional or Educational facility,
- Restitching Rozelle, Glebe, Lilyfield through improved pedestrian and vehicular links between these suburbs,
- Creation of pedestrian access to the light rail stations from the new development,
- Provision a green corridor to accommodate drainage flow, surface water flow detention basins, and improve biodiversity in the area,
- Provision of a dedicated freight rail line along the south eastern edge.
- Provision of a range of densities with the highest densities in the ped-shed of the light rail station,
- Creation of a new link to the harbour,
- Advantages of the incorporation of residential development within the Rozelle Marshalling Yards
Rozelle Marshalling Yards Structure plan details

- Public Plaza fronted by retail
- Rehabilitation Creek/ drainage corridor/ pedestrian / cycle link
- Perimeter block housing based upon historic and adjoining street
- Gateway tower building / pedestrian bridge and bus interchange
- Harbourside 'groundscraper' / pedestrian bridge / public open space

The Bus interchange serviced by the City West Link routes in the base of the landmark gateway building and the light rail make this a public transport hub feeding the precinct.

A Mixed Use Town Centre is created using similar principles as suggested by Calthorpe (left) [source: Carmona et al].
Bulky goods and factory outlets could occupy the land beside the City West Link with showrooms and signage lining the highway. The showrooms provide far greater exposure than the power station while also providing shelter to the noise and amenity issues associated with the highway. The showrooms would feed into fine grained specialty shops covered by awnings that sleeve and activate the major movement line or vector.

This foreshore building like the University of Technology, Nederlands Library (right), is proposed to slope up to integrate with the bounding role of the gateway town (next page).

Such a scheme achieves a foreshore building as proposed by the Waterways master plan. The building has the added advantage that it also creates publicly accessible harbourside space (roof) in addition to the publicly accessible 3 metre foreshore setback required by the Rozelle and Blackwattle Bay Master Plan. This building is effectively a warped extension of the artificial concrete wharf apron.
In Lausanne, Tschumi proposed an inhabitable bridge. For the Lausanne project he describes the process of cross-programming, a whereby the designer "uses a given special configuration for a program not intended for it". Tschumi uses a bridge for residential use (while still functioning as a vehicular bridge). The process of using a power station as a museum or shopping centre would also be considered 'cross-programming'.

In a similar vein to Tschumi's cross programmed bridge and the Malie tower in the Hague (left) it is proposed that a building span the City West Link Road functioning as a landmark, pedestrian bridge and bus terminal. This would serve to unblock this important junction between harbour, light rail and the new development to become an important node.
Rozelle Marshalling Yards Structure plan details

Perimeter block residential development. Typical built form consists of a 4 storey street wall with an additional 2 storeys on the southern side setback from the street. Refer to page 82 for greater detail.

Gateway building and foreshore ground-scraper perform bridging roles to allow wide, all-hour, publicly accessible links across the arterial roads - City West Link and The Crescent.
The Residential Area

East west section (north south streets) draw upon the morphological dimensions of Lilyfield Road that is buildings defining space. In this instance road reserves are approximately 18 metres. This width is replicated in the new development.

Fine grain residential terraces, Lilyfield Road, Rozelle (just off Victoria Road)

Developments should aim to be ecologically sustainable such as this development in Beddington in London (Redo Ltd) (haksw)

Typical east west section

![Typical east west section diagram]

The main spine road (east west street) contains taller buildings that overlook the linear park (below)

Typical north south section

![Typical north south section diagram]
include:

- Increased safety through greater activity and passive surveillance of the linear park land and pedestrian/ cycle corrido.

- The generation of income through the implementation of a developer's levy that is directly channelled to the creation of parkland and the restoration of the Power Station.

- 1500 new dwellings that are not 'pioneer' development on the city fringe.

5.4 The White Bay Power Station Design

The Schouwburgplein adjacent a central Rotterdam Entertainment Complex and cinema draws upon the city's industrial maritime heritage using coin-in-the-slot movable floodlights on hydraulic cranes. The public open space element is comprised of maritime industrial materials such as heavy timber decking, steel plate, and epoxy.

Similar striking treatments could be used to create a highly appealing public space while still maintaining an appropriate industrial typology (the genius loci). Such an interpretation of the industrial landscape remains in keeping with the recommendations of the Conservation Management Plan.
White Bay Power Station Plan

Soft vegetation to the steer creating a transition to the residential areas to the north and west. Vegetation will also help soften the harsh vehicle dominated landscape of Victoria Road. Possible planting could include fruit trees as a reference to the fruit trees planted and tended by factory workers in the mid-1900s.

The Power station should be used for a cultural purpose that draws upon its historic and iconic built form in a similar manner to the Bankside Tate Modern in London.

Roof Space should incorporate solar cells such as those used at the Powerhouse Museum. There is something poetic about the evolution of a power station from coal to solar power generation.

New structure to occupy the building envelope of the, now demolished, boiler house 2. This new space is the most appropriate to contain a major retail anchor (maybe a 3000-4000m² supermarket &/or discount department store and car parking) as no heritage structure need be damaged or removed in the process.

Hard industrial-themed landscaping that draws upon the genius loci of the space refer to figure 8 of Schowburgplein on the previous page.

84 White Bay Power Station and Surrounds: Structure Plan
Considerations

- Adaptive reuse of the industrial building
- Fund a portion of it through commercial activity/sales
- Coordination with port authorities as a possible terminal for Spirit of Tasmania
- Improved linkage/integration to surrounding suburbs
- Improved accessibility
- Improved public transport and harbour connections

The profile of the White Bay Power Station could be raised as an important community focal point through the early establishment of art studios/gallery space. Such a use may be associated with the nearby Film Studios and/or Sydney College of the Arts. Use as an art space would require minimal restoration and could ultimately be replaced by subsequent stages of development (cf. Blackwattle Studios in Glebe) or this community based cultural component could be maintained as an integral marketing angle of the redevelopment.

A proposed staging would be:

1. The opening of the Power station as artist studios as soon as minor works make the building safe;
2. Construction of new roads, cycle and pedestrian ways;
3. Development of the 'gateway tower building' and the pedestrian link to Glebe and the light rail station;
4. Construction of a retail wing on the former 'boiler house 2' site of the power station;
5. Development of the mixed use precinct on the marshalling yards land;
6. Development of the Residential component of the marshalling yards and transfer of developer's contribution to the Power station redevelopment;
7. Redevelopment of the power station as a cultural/educational/institutional centre;
8. Implementation of the interpretive trail.

5.10 Possible Staging

Alexander in the New Theory of Urban Design suggests "piecemeal growth: to guarantee a mixed flow of small, medium and large projects" within the "growth of larger wholes". Where "every building increment must help to form at least one larger whole". Indeed the structure plan aims to guide the larger whole and it would be suggested that a number of designers and builders, rather than one large developer, be engaged to develop the various components to provide a degree of variety to the final outcome. To avoid conflict it is possible that one project manager (and possibly several designers/ firms) be responsible for each development block, however they should be constructed as a single entity. In more public places such as the proposed public square/plaza at the Rozelle Marshalling yards, a variety of designers/builders should be responsible for the various elements and a fine grained, well articulated outcome should be sought.
and cycle/ walk ways

A good marketing strategy is another important element to ensure the success of any future redevelopment of the site. Although only touched upon in this report, the issue of a strong industrial heritage and iconic form of the power station provide material upon which such a strategy may draw upon. A robust urban structure that provides good access and a built form that is responsive to the heritage of this cultural landscape are a positive start for the healthy redevelopment and adaptive reuse of the sites. It must be noted, however, that sensitive built form alone is not enough to ensure success as evidenced by the wonderfully sensitive, but economically disastrous, adaptive reuse of the Australian Technology Park that suffers from poor integration with the surrounding street network and a low public profile. The White Bay Power Station and Rozelle Marshalling Yards faced with similar issues should learn from these mistakes.

Footnotes

2 Hill Thalis, 1997, White Bay Power Station Site Pre-Masterplan Study

3 Marcus Rowian, Team Leader Strategic Planning, 2004, pers com
5 Leichhardt DCP Amendment No.7, 2003. Leichhardt Council
10 Hayden, D 1997 The Power of Place: Urban Landscapes as Public History, MIT Press Cambridge MA p.15
11 Schama, S, 1995. Landscapeand Memory p.6
12 Definition from: Australian ICOMOS Charter for the Conservation of Places of Cultural Significance (the Burra Charter), 1992

14 Protecting Local Heritage Places, Australian Heritage Commission, 1998 Goanna Print Canberra p4

16 Protecting Local Heritage Places, Australian Heritage Commission, 1998 Goanna Print Canberra p36


22 Assuming NSW average 2.7 persons per dwelling

23 Llewelyn Davies, 2000. The Urban Design Compendium p.4

24 Assuming NSW average 2.7 persons per dwelling

24 Llewelyn Davies, 2000. The Urban Design Compendium p.48

26 Assuming NSW average 2.7 persons per dwelling

27 Llewelyn Davies, 2000. The Urban Design Compendium. P.47


31 De Clercq, D. 2000 "The Mont des Arts as Terrain Vague?" in Vacant City, NAI, Rotterdam. P. 191


39 Toon, J and Falk, J. 2004 Sydney