Planning for Sustainability:

A Future for White Bay, Sydney

A report prepared by Dr. Phil McManus

The University of Sydney

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Executive Summary

This report provides 23 planning criteria that are appropriate for the planning of White Bay, plus criteria to cover regulatory compliance and economic feasibility. The criteria have been developed through an extensive literature search of port redevelopments both in Australia and internationally, and by considering this literature in relation to the specific site. The application of the criteria is demonstrated through the use of a matrix, and additional material is provided on the economic viability of selected land uses. Eight recommendations are included in this report about how Leichhardt Council may wish to proceed with regard to the planning and redevelopment of White Bay.

Planning for White Bay should be coordinated and transparent. In this report White Bay is seen as integrated with Balmain, with the surrounding bays and with other large parcels of land such as Glebe Island, the White Bay Power Station and the former Rozelle Marshalling Yards. While developing and implementing a desired vision for the wider area is very important, individual development projects may emerge on occasion. It is therefore necessary to develop appropriate planning criteria such as those presented in this report to assess the desirability of these projects. White Bay represents an opportunity to be proactive in redeveloping a port facility. With innovative thinking and careful planning, White Bay can become an internationally acclaimed example of a port redevelopment that contributes to sustainability. This report provides some important foundations on which to conduct this redevelopment process.

About the author:

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Terms of Reference

At its meeting on 18 April, 2006, Leichhardt Council resolved:

That Council develop a brief for a feasibility study of the type of industries consistent with the working harbour in White Bay which will contribute to reducing Sydney' ecological footprint.

The output from this study should comprise the following:

- A list of criteria that can be applied when assessing potential future uses in White Bay;
- A list of viable uses that satisfy some or all of the criteria and which would be commercially viable in this location.

Introduction

This report seeks to address the above terms of reference provided by Leichhardt Council. These terms of reference refer to the notion of a "working harbour". This idea is worthy of discussion because its meaning is somewhat slippery. It is based on non-Indigenous history ("tradition") and conveys positive connotations of life, vitality, activity and even community. It tends to overlook issues of pollution, noise, health concerns and so on. This is challenging because good planning for the future in relation to sustainability, environmental quality and community wellbeing cannot be based on mythical notions of history.

A "working harbour" has been constructed as the opposite of "a pond" (by former NSW Deputy Premier Andrew Refshaugge). This comment highlights the desire to maintain maritime activities on Sydney Harbour, a desire that appears to be shared by the owner of the site, Sydney Ports. The concept of a working harbour is, however, being increasingly challenged by other stakeholders, such as local residents who are concerned about quality of life issues.

It is also becoming increasingly challenging to reconcile the notion of a "working harbour" with contemporary processes that undermine the viability of a "traditional working harbour". These processes include;

- containerisation (introduced in the late 1960s, but changing in logistics such that it requires particular wharf configurations that are not presently available or easily constructed in White Bay)
- the move from harbours to sea ports, (Sydney Harbour to Port Botany)
- the emergence of security issues (particularly the concept of "dirty bombs")
- changes to manufacturing and assembly processes, such as the assembly of automobiles imported from overseas manufacturing sites.

The above trends will be discussed in Section 6 of this report. At this stage it is sufficient to say that they contain a number of possible implications. First, the existing working harbours that many people are trying to maintain (and other people are trying to remove) are already becoming increasingly historical in character. This is certainly the case for the medium-long term planning timeframe. Second, the proposed uses for a working harbour should be either

future uses with economic viability, and/or a repackaging of existing uses such that they become economically viable in a different context (for example, as heritage with a tourism focus). Tourism does have environmental impacts, but these can be managed carefully.

The above considerations have informed the development of the potential criteria presented in this report. There are three levels of criteria. These are

- criteria for desirable outcomes for land and water planning given the site characteristics and potential characteristics. There are 23 criteria presented and justified in this report;
- the conformity with existing plans and regulations. These plans and regulations can be changed, and have not been treated as a significant constraint to devising appropriate planning criteria by which development visions and proposals can be assessed. The Glebe Island and White Bay Masterplan could be seen as a development control plan, and appears particularly dated given announcements to move various activities to Botany Bay and elsewhere. While not provided as criteria, other process-oriented planning statutes may need to be considered in relation to particular development proposals and sites, including Part 3A of the Environmental Planning and Assessment Act relating to critical infrastructure projects;
- the economic viability of selected proposals, based on the evidence of demand. This is a significant point, but it is not the same as good planning for land and water integration, nor is it the same as conforming to existing plans and regulations. The evidence is based on an analysis of trends in the literature, knowledge of Sydney, analysis of similar scenarios and direct comments from people associated with specific land uses. This issue is addressed in Section 9 of this report.

There is no weighting given to the criteria. This is a value judgement, as would be any weighting system. The criteria are not aggregated. Adding the scores could easily obliterate important considerations on individual criterion. Given that each development proposal or idea will be idiosyncratic, some criteria may be more important in relation to particular development proposals and less important in relation to different proposals. Aggregation would effectively conceal this point, and potentially close opportunities for debate and decision-making at points where it is most needed.

The use of the matrix has been demonstrated in this report with two contrasting development proposals. This has been done to provide an indication of how the criteria could work in practice. Two contrasting proposals have been chosen. One is the highly contentious concrete terminal proposal. The other is a maritime film set. The film set proposal is not economically viable, based on the literature (Dovey, 2005). This viability analysis is taken from Dovey's discussion of this development option in the redevelopment of the Melbourne Docklands, and an analysis of Sydney's experience with the Fox Studios at Moore Park. As noted, the choice of these two options is to demonstrate the matrix scoring system in operation, and the values assigned to the particular criteria should be considered "indicative only".

Before presenting and justifying the planning criteria, it is necessary to outline the methodology used in this research (Section 1) and to present the context of the particular site at White Bay. This context includes the history (Section 2), the site characteristics and potential characteristics (Section 3), projected demographic and land use changes in the surrounding area (Section 4) and the statutory planning controls (Section 5). While these factors make White Bay unique, the literature review highlights the similarities between the redevelopment of White Bay and other port redevelopments around the world (Section 6). Section 7 of this report identifies possible land uses that may be appropriate for White Bay in accordance with the terms of reference.

The justification for the planning criteria is presented in Section 8, while the criteria and their application is demonstrated in the planning criteria matrix (Section 9). This is followed by an analysis of the viability of potential land uses (Section 10). The report concludes with recommendations about how to proceed with the planning criteria.

1. Methodology

The terms of reference have been addressed by integrating an extensive literature review on port redevelopment, an analysis of documents and policy relating to the particular site and a Focus Group held at Clontarf Cottage on Tuesday 15 August, 2006 (see Appendix 1). The need for an integrated plan for the wider area (including White Bay, Glebe Island, the White Bay power station, Rozelle Bay and the Rozelle Marshalling Yards) was a strong theme in the focus group, as was the call for government departments to work together to ensure coordination and compatibility of decision making.

The literature review includes literature on port redevelopment from a geographical and planning focus, with particular reference to the role of communities in the redevelopments. While a large body of literature exists about port redevelopments, the methodology adopted for this research has, unless otherwise necessary, limited the literature to that which deals with port redevelopments that maintain something of an industrial character.

2. The site and its history

White Bay and Glebe Island are important areas in Sydney. Glebe Island was once an island (not just in name) and was the largest island in Sydney Harbour at the time of European settlement. Prior to European settlement the country was home to the Gadigal and Wangal people. The surrounding terrain was Hawkesbury Sandstone, vegetated with forests and cut by creeks flowing through mangrove wetlands to Sydney Harbour.

In the context of non-Indigenous history, the Glebe Island abattoir, which operated from 1864 to 1916, fostered the growth of meat preserving works and soap and candle manufacturers in Balmain and Leichhardt (Coward, 1988; McManus, 2001). Shipbuilding and repairs were located in Balmain, timber yards and iron works in Rozelle and coal loading facilities in Blackwattle Bay (Quinn, 1975). Over time, large portions of Rozelle Bay, Blackwattle Bay and White Bay were filled to construct port facilities and industrial land (McManus, 2004).

White Bay has a particular history of shipbuilding and timber yards, with John Booth's sawmill, joinery and timber yard dominating the area and employing 300 men in 1889 (Solling and Reynolds, 1997). Eight years late in 1897 Lever Brothers established their factory complex. In the 1960s it employed 1100 workers (Solling and Reynolds, 1997). The White Bay and Glebe Island area has also been important as an area of grain silos, the main base for American soldiers during World War Two, and then a coal handling area (Sydney Ports, 2000).

In summary, the area around White Bay was once a major industrial location employing thousands of workers who generally lived nearby. While it is unrealistic to expect that such a scenario can be recreated, the generation of employment opportunities is important given the anticipated population increases and changing demographics in the surrounding area.

3. White Bay Site Characteristics

The site characteristics can usefully be divided into existing site characteristics that are of importance for the future planning of White Bay, and potential site characteristics that are feasible and could change the viability of possible land and maritime uses on the site.

3.1 Existing Site Characteristics

These are;

- An available deep water site (there is an underwater sandstone bar that may cause challenges for deeper draught ships). This sort of site is rare in Sydney Harbour.
- The site is atypical of most port redevelopments cited in the literature because it is not contiguous with the city centre.
- A large area (including White Bay, Glebe Island, White Bay Power Station and the Rozelle Railway yards land)
- Flat land – there is a rise to Victoria Road, but otherwise the land is flat. Much of this land is infill of some kind deposited over various time periods. The land was originally wetlands near the harbour.
- The site has existing rail access.
- Despite the rail access, there is poor public transport access because the rail was a freight line, not a passenger rail line.
- There are poor road and parking facilities at a strategic point in the local and metropolitan transport network. The existing road transport system is very fragile in its operations and will not readily accommodate new demands.
- There are nearby residential areas. This is important because these residential areas are <u>not</u>
    - degraded,
    - industrial,
    - a collection of heritage buildings,
    - maritime in employment and socio-economic focus.

3.2 Potential New Site Characteristics

A consideration of appropriate planning criteria should take into account potential changes to the site characteristics of the area. These site characteristics are mainly related to access considerations and include;

- The potential to include a passenger ferry stop at the site (this would access to Darling Harbour, Circular Quay, North Sydney, Parramatta, and so on),
- The potential to extend the existing light rail system from near Rozelle Bay to connect with the existing good rail lines (this would provide access to Balmain, Central Station, Chinatown, and any future possible westward extension beyond Lilyfield). It is worth noting that the existing light rail line incorporates part of an old goods line,
- The potential to develop/upgrade both cycle and pedestrian paths (this is related to the flat land and the ability to plan traffic movements around cycling and pedestrian routes, rather than fitting these routes into existing traffic movement patterns),
- The potential to provide a modified road network that can increase safety and improve the amenity of the local area.

The ability to change the characteristics of a site by changing its access should not be underestimated. This was an important feature in the redevelopment of Gateshead Quays (near Newcastle in northern England). Vacant sites and declining uses in Gateshead were made accessible to the Newcastle waterfront by the construction of a pedestrian bridge (the Millenium Bridge). This increased their viability substantially.

4. Projected demographic and land use changes in the surrounding area

The population of Leichhardt Council is projected to increase from an estimated population of 48 705 in 2003, after allowing for the local government boundary changes in May of that year, to 52 052 by 2011. This represents an increase of 7 per cent (Leichhardt Municipal Council 2003). The report from which these statistics were derived estimated that the bulk of the population growth would come from a natural increase, and that there would be a "steady, but generally moderate supply of new, predominantly multi-unit dwellings" (Leichhardt Municipal Council, 2003, 44). Appendix 4 of that report highlights the potential of the light rail network to enable an increase in dwelling density around transport nodes. Two nodes of relevance for this current report were identified – the Rozelle Goods Yard and the White Bay Power Station sites. Table 5 (Leichhardt Municipal Council, 2003, 54) indicates that about 300 dwellings could be provided on the White Bay Power Station site.

The above projections may be compared with the recently released housing strategy for Sydney developed as part of the NSW Government's Metropolitan Strategy (NSW Government 2005). The population projections for 2031 contained in this report lead the government to the conclusion that about 60-70 per cent of new dwellings (approximately 445,000 new dwellings) will be constructed in the existing urban areas in Sydney and the Central Coast. Of particular relevance to the current report is that the housing capacity in the Inner West was identified as 95 198 dwellings in 2004, but was planned to be increased to 125 000 dwellings in 2031 (NSW Government, 2005). The Inner West area comprises the local government areas of Leichhardt, Burwood, Canada Bay and Strathfield. The projected increase of a little over 31 per cent in total dwellings in the next 25 years is going to be very challenging to achieve given that many of the easier options have already been taken.

This projected increase needs to be considered in relation to the redevelopment of White Bay. The site, including the flat land extending as far south as the Rozelle Marshalling Yards, is a rare opportunity to provide for the future employment, recreational and other needs of the existing residents and the likely future residents. If there is a continuation of the "working harbour", what proximity to residential dwellings is acceptable, what does this mean for the hours of operation and the nature of work being undertaken, and what design aspects have to be considered?

5. Statutory Planning Considerations

There are a number of important statutory planning considerations that need to be taken into account for developments in White Bay. These include heritage items if the development concerns a heritage building such as the White Bay Power Station. They also include the changes to the NSW the *Environmental Planning and Assessment Act 1979* (EP&A Act), depending on the type of development proposed and its location. These changes, including both Part 3A of the Act and the new State Environmental Planning Policy (Major Projects), (SEPP) are applicable to White Bay/Glebe Island area because of its strategic location. Clause 7(2) of SEPP states that port and related lands in Sydney Harbour are significant.

The three major planning considerations that cover the entire site are the Sydney Regional Environment Plan No. 26 (SREP 26) the Glebe Island and White Bay Masterplan, and the Customs Areas. Under the provisions of the SREP 26, the White Bay and Glebe Island areas are zoned for "port and employment" uses. This zoning identifies the permitted uses on the site, and would need to be changed if land uses that did not meet this zoning provision were desired.

The Glebe Island and White Bay Masterplan is intended to link the regional planning process with specific development applications. It is, arguably, a development control plan. It contains principles and provisions that identify what is desired in themes, including landscaping, views, pedestrian and cycle access, in different parts of the area. The plan is detailed in its provisions on how to maintain the amenity of the area. Although the Glebe Island and White Bay Masterplan was released in late 2000, it seems increasingly dated given the changing nature of maritime functions in Sydney. It appears to envisage a working harbour of 10-20 years ago, with little recognition of the expansion of Port Botany and the impacts this may have on White Bay. While the plan is useful as a guide, the development of a community-based vision for the White Bay site should be able to raise more innovative ideas for the future of this site that are in accordance with the trends identified in this report.

The Customs Act is important and needs to be changed. It is a reflection of land uses that have operated in White Bay to date, rather than a basis for thinking about the future. Section 15 of the Customs Act (1901) limits access to all wharves at Glebe Island, White Bay and to parts of the Rozelle Marshalling Yards lands that form a "secure zone" with authorised access only. It is likely that given the shipping trends identified in the next section of this report, there will be little need for the continuance of the "secure zone" on much of the site.

6. Port Redevelopments – a literature review

There is a substantial body of literature on ports and port redevelopments from around the world. One website that is particularly useful is the Waterfront Communities Project (www.edinburgh.gov.uk/wcp/partners). Of importance to the location at White Bay is the literature on port redevelopments that attempt to maintain aspects of a "working harbour".

Port redevelopments that have modified the use from a "working harbour" include redevelopments for;

- entertainment — Darling Harbour,
- residential — Eastern Harbour District in Amsterdam – see NAI Publishers, 2006, but also sites in Balmain
- commercial — London Docklands
- arts — Gateshead Quays in Gateshead, England
- culture — specifically music, in Aalborg, Denmark

In contrast to the above, a number of developments around the world are notable because they have attempted to include uses (often as part of a redevelopment rather than being the only permitted use) that maintain the "working" character of an area. Notable examples of this approach include;

- Granville Island — This is a "mixed-use" island near the centre of Vancouver, Canada – a large redevelopment of former waterfront land nearby at False Creek has converted old timber yards to residential use.
- Dagenham Docks — This is a Sustainable Industrial Park based on eco-industrial park principles as part of a redevelopment of 133 hectares of the eastern port area along the Thames River in London – see Appendix 2 plus Grant, 2000; Lambert and Boons, 2002; Roberts, 2004 for an understanding of eco-industrial parks)
- The Fore River Shipyard — This is a site near Quincy, Massachusetts (part

	of the Boston urban area). See Rafferty (1996) and Preer (2006).
• Kingston-upon-Hull	This is a city on the Humber River where a mix of "anchor attractions" such as "The Deep" (an aquarium) were introduced, but ferry transport to Europe and industrial uses on other parts of the Humber Estuary were maintained.

6.1 The port-city interface

The literature on port redevelopment includes an overview of the "port-city interface" and identifies how this has changed over time. An oft-cited reference is Brian Hoyle (1988), who identified five stages of the port-city interface. These were;

1. Primitive cityport	Genoa, Naples, Venice, Marseille, and so on – up until the 19th century. This relationship is characterised by a close spatial and functional association between the city and the port.
2. Expanding cityport	Perth-Fremantle, Sydney, Quebec City, Boston, Hong Kong, Singapore – ports emerge beyond the city confines in the 19th and early 20th centuries.
3. Modern industrial cityport	Sydney Harbour.
4. Retreat from the waterfront	1960s-1980s and beyond – Rotterdam, Zeebrugge, Port Botany, Brisbane's port on Moreton Bay.
5. Redevelopment of and the waterfront	London, Cardiff, Bristol, Sydney's Darling Harbour, so on).[1]

The ports of Bristol (UK) highlight this port-city interface. The old ports were on the River Avon in what is now Bristol, to be hidden from pirates. In 1804 the cityport was expanded, but in 1877 a new deep-water port was opened at Avonmouth, where the Avon enters the River Severn. In 1977, after years of conflict, the new Royal Portbury Dock was opened in

[1] Some of the examples in this list have been provided by Hoyle, while others have come from other literature sources or examples with which the author is familiar.

what is effectively stage 4 of Hoyle's (1988) model (Bassett and Hoare, 1996). The late 1990s and the early 21st century have seen the redevelopment of Bristol's abandoned cityport.

While the context is different than in Bristol, the current land use conflicts relating to the proposed concrete terminal at White Bay exemplify the use of Hoyle's (1988) "port-city interface". The concrete terminal is an attempt to recreate stage 3 (a modern cityport), but containing land uses that have not moved to stage 4. A concrete terminal is financially viable because of the high price of transporting concrete, and the demand for concrete at city centre and inner city construction sites. Unfortunately, the concrete terminal effectively limits the options for a stage 5 redevelopment of the waterfront, which may be more economically viable.

The move to stage 4 of Hoyle's (1988) model can be understood as a "shortening of the turn-over time of capital by a reorganisation of the channels of circulation; in other words, the redimensioning of the waterfront time-space" (Gilliland, 2004, 452). This process is occurring with the proposed expansion of Port Botany, a move that includes increased mechanisation of the port and proposed increased freight movements by both road and rail through older suburbs of Sydney. Simultaneously, "one effect of incessant technological innovation is to periodically destroy past investments and radically transform the urban landscape" (Gilliland, 2004, 453). This is the situation at White Bay, which makes possible either the 5th stage of Hoyle's (1988) model – redevelopment, or a new form of land use that continues the 3rd stage (in this case the cement terminal proposal).

6.2 The city-port interface, sustainable development and ecological footprints

What does the city-port interface model of changing port functions and viability mean for the various categories of ports? Vallega (1996) proposes a model of ports comprising four interacting "structures" and suggests how they would function in accordance with the notion of sustainable development (see WCED, 1987). According to Vallega (1996), the four structures to consider are 1) the central business district, 2) the redeveloped waterfront, 3) the containerised seaport and 4) the maritime industrial development area.

Of importance to White Bay, Vallega (1996, 304) sees the "redeveloped waterfront" as including;

> facilities and services centred on the protection of the coastal and ocean ecosystems, the assessment of the sea, including that based on educational interactive methodologies, and the assessment of cultural heritage that is concerned with the marine environment … the waterfront could acquire high-rank functions, dealing with research, university education, decision-making systems, and others.

The feasibility of White Bay containing these functions is dependent on changing plans and zoning, and ensuring the economic viability of such a project. Importantly, these facilities can co-exist with other developments based on heritage and "working harbour". One such possibility is the idea of a Sydney Harbour Heritage Centre (discussed in section 7). This concept could include research as identified by Vallega (1996) and heritage, as has been done in Hartlepool with a publicly funded historic ships heritage centre and in London with a Docklands Museum established at West India Quay (Church, 1996).

In terms of sustainable development, and reducing the ecological footprint as set out in the terms of reference, a port redevelopment that is based on importing and exporting is very likely to extend the ecological footprint (see Wackernagel and Rees, 1996; McManus and Haughton, 2006). This is the case whether the ecological footprint is understood as a metaphor for ecological impact, or as a specific measuring tool. The individual port may have a reduced ecological footprint if it moves from stage 3 to stage 5 of the cycle, but this is not usually a move towards sustainability in an area – it simply means that a new port has been created as a stage 4 modern seaport. The opportunity for a port redevelopment to promote sustainable development means moving away from a trading focus to being a site for activities such as education, research (Vallega, 1996) and to more sustainable energy generation, the encouragement of "green businesses", industrial ecology (as in the Dagenham Docks Sustainable Industrial Park) and the inclusion of walking, cycling and viable public transport access.

6.3 Maintaining a "working harbour"

An important issue for White Bay is how to maintain a "working harbour" given the challenges mentioned in the Introduction, yet meet environmental and cultural expectations

of the 21st century. Rafferty (1996, 281) offers the example of the Fore River Shipyard near Boston, and identifies the plan for this redevelopment as "a model for port redevelopment strategies". She notes four key elements. First, the site still serves as a port, largely for shipbuilding. Second, "the plan preserves the integrity of the site" and recommends "continued ownership by a single agency … to ensure that development and implementation take place in accordance with the plan" (Rafferty, 1996, 281). Third, public use of the site is enhanced through a tourism centre, "a naval shipbuilding museum, interpretive facilities at the marine technology centre, and a ferry gateway to regional and local coastal heritage resources" (Rafferty, 1996, 281). Fourth, there is a balance of uses including manufacturing, high technology and tourism to diversify the economy and employment.

The Fore River example is also important because it highlights the articulation between a planning process, community involvement, scenario development and feasibility criteria. The planning process involved the identification of five re-use scenarios (effectively six scenarios as an important distinction was made between a revitalized port and revitalized shipbuilding). The feasibility criteria were agreed upon, and the scenario that best met the feasibility criteria was selected. In this case the scenario was to develop the site as a centre for marine technology and tourism. There were five criteria used, although these included sub-components. The feasibility criteria were; compatibility with the physical characteristics of the site, economic feasibility, employment and municipal revenue impacts, transport impacts and regulatory consistency (including historic preservation and hazardous waste regulations) (Rafferty, 1996). In this example, the criteria were not standardised so the ratings could include "poor" and "excellent" for physical compatibility, monetary units for development costs and numbers for employment creation. This is shown in Appendix 3 of this report, along with recent developments and proposals for this site. While the Fore River development has not been entirely successful, and is now being redeveloped again by a private investor (see Preer, 2006), the principles and the approach are worthy of consideration.

6.4 Port redevelopment and employment

The importance of employment-generation is recognised in a number of studies, and is one of the criteria identified for White Bay. Neumann (1997) studied eight former industrial waterfronts in England and Wales. He concluded that in port cities where local councils had a relatively high influence on decision-making (as in Hull, Swansea and Southampton)

"many more jobs were created by newly-established, independent firms" (Neumann, 1997, 161). These jobs are different in character than the "typical" waterfront uses (identified as offices, retail and leisure). Importantly, it was possible to create these jobs, but it relied on "supporting the endogenous economic potential and by attracting new businesses, which harmonize with the local economy", as was done in Hull (Neumann, 1997, 161). The relevance for White Bay is that local businesses do exist in locations such as Rozelle Bay and other parts of Sydney Harbour. A coordinated plan to relocate businesses such as boat building, boat repair, maritime salvage, and so on to White Bay can potentially enable these businesses to overcome some of the constraints associated with their present sites. These businesses can then form the basis to attract similar or related businesses to the area.

6.5 Port redevelopment and communities

The redevelopment of former port land can be an opportunity for improving the quality of an area, or it could be the catalyst for major concern. Hoyle (1999, 2000) studied the approaches to port redevelopment in five Canadian cities; Halifax, Kingston, St. Johns, Vancouver and Victoria. He concluded that there was a wide range in the degree of involvement of community groups in waterfront redevelopment projects. He also noted that the influence of community groups on the process of redevelopment varied substantially. Importantly, he also noted that "community group activists are frequently only too well aware that the problems they face on their urban waterfronts are commonplace to port cities and other urban places, not only in Canada but around the world" (Hoyle, 1999, 77).

This awareness is apparent from recent research in Port Adelaide (Oakley, 2005; Rofe and Oakley, 2006) where there are attempts to change the inner part of the port, because it is seen as declining and has potential for redevelopment, into a new residential/commercial/tourism area. Rofe and Oakley (2006) focus on the construction of industry as being dirty and grime. In this example, a number of local residents want industrial activities and a "working harbour" maintained because there is a strong connection between the residents and the port. White Bay does not have the above connection between port and residents. The construction of industry as undesirable is apparent in some discourses.

White Bay is unique. As this literature review has highlighted, it is, however, facing many of the same issues as declining port sites in other parts of the world.

7. Possible Land Uses for White Bay

There are many possible land uses for the White Bay site, but it is important to understand that attempts to maintain a "working harbour" as has operated in recent decades runs counter to the literature on ports (see Section 6).

The site could be made as part of a "working harbour" by drawing on a number of ideas from the literature review and integrating these with local knowledge of the site conditions, the potential site conditions and the situation with other sites on Sydney Harbour. After doing so, the following list of possible land uses emerges for the site. Some of these land uses could co-exist, a scenario that may be necessary to enhance the economic viability of the site.

- A "Sydney Harbour Heritage Centre" (including "working harbour" and linked to the White Bay Power Station). This could be based on museums such as in the Docklands of London. It could include the Sydney Heritage Fleet, although this organization can exist as a stand-along entity if desired. The heritage centre idea could include revenue generating activities with a maritime focus, for example, the port of Leith (Edinburgh) secured a major vessel ("The Brittania") as an attraction, while at the United States Naval Shipbuilding Museum at Fore River (near Boston) overnight guests pay to stay on a former heavy cruiser, the USS Salem.
- An educational centre for marine research and teaching. This could potentially involve various universities and museums in a collaborative approach.
- A sustainable industrial park (similar to the Dagenham Docks redevelopment in London). This would involve substantial coordination, but the location and potential market position of being associated with this activity could attract new, environmentally-benign industries.
- A maritime film set (not economically viable according to Dovey, 2005), but could form a small part of the site if there is demand from film and television production companies.
- A site for the Sydney Heritage Fleet (this is currently in Rozelle Bay, but is required to move and would love to find accommodation at White Bay).
- A boat building and repair precinct (currently scattered around the harbour at sites including Woolwich). Some consolidation of this activity could occur at White Bay,

and would complement the Sydney Heritage Fleet by demonstrating the evolution of boat building and repair on one site. This could be supplemented by interpretative material (as at Fore River) and could include complementary facilities such as a café, a safe playground with a maritime theme, and so on.

8. Planning Criteria to Assess Possible Land Uses

The planning criteria developed to assess possible land uses has been derived from the literature and from the analyses of site conditions pertinent to White Bay. The "permitted use matrix" for the Fraser River Estuary Study (Boyle, 1990) was a starting point, but the matrix presented in Section 9 of this report extends this format and aligns it with planning criteria rather than permitted uses. The feasibility criteria used in the Fore River redevelopment near Boston (Rafferty, 1996) were also considered, but it was felt that "planning criteria" needed to be more comprehensive than 'feasibility criteria". The format for presentation used at Fore River was also considered. The format adopted in Section 9 is derived from work on sustainability indicators, and attempts to show the degree to which a development proposal meets individual criteria (the standardised legend), but does not attempt to aggregate the values given to each criterion. The discussion that contributes to and follows from the assigning of values is important in developing a consensus (if this is possible) on the desired planning options.

The matrix in Section 9 contains 23 planning criteria, plus criteria for regulatory compliance and economic viability. Values have been assigned to two possible land uses, simply to demonstrate the way the planning criteria would function. These are indicative values only.

The criteria recognised different types of maritime and industrial uses as part of a "working harbour". One criterion also relates to employment. It is important that the site not only accommodate facilities that appear to be "working" but that these facilities do generate employment. Another criterion advocates a particular type of employment, ie. non-professional employment because this relates to the history of the site, the site is suitable for this form of employment and because there is a dearth of this type of employment in this part of the city.

The criterion about the significance of tenure relates to the ability to avoid fragmentation on these important sites. Fragmentation makes ongoing planning very difficult, and to have such important land largely in public ownership represents an opportunity to plan effectively now, and in the future.

There are a number of criteria relating to the impacts of developments on the surrounding residents. As was previously noted, residential dwellings abut this site and the needs of local residents must be considered in any redevelopment proposal.

The criterion relating to pedestrian and cycle access concern sustainable transport and recreational needs. This criterion cannot be achieved at the moment due to the Customs Act making the site a secure zone. If this is no longer necessary, then pedestrian and cycling access should be an important consideration, as should the ability to link this site with other public open spaces. Part of the site could become public open space, particularly if the choice of other land uses was compatible with this use.

The criterion relating to outcomes being commensurate with effort is important. Some of the port redevelopment activities involve substantial time and effort. They may be the preferred option, but they do not come easily. Activities such as a sustainable industrial park, or a heritage precinct, take a long time to coordinate and develop.

The ability of White Bay to open up opportunities at other sites (Blackwattle Bay, Rozelle Bay, etc.) can potentially represent good coordinated planning. If it solves problems at other sites that is also a good planning outcome, provided the other criteria are also satisfied. Criteria such as environmentally compatible with site conditions is essential for any site, but particularly one located at a key point in the harbour and the road network.

The criteria related to economics and social value is intended to address the issue of development from the economic and social sides of the sustainability triangle. The social/cultural criterion acknowledges that particular land uses may be highly desirable for social and cultural reasons, but are not economically competitive. They can be justified on community value grounds, and if they are compatible with other uses, can be part of a larger redevelopment where the entire redevelopment is economically viable, not the individual components. In this sense, activities that do not restrict other activities from occurring are desirable, as are activities that do not detract from surrounding land values.

It is necessary to improve activities over time. Planning should be ongoing, and ideally this capacity should be demonstrated at the initial stages.

The criterion addressing other harbour sites is included to avoid duplication. While it could be argued that this will be addressed in economic viability criteria, it is important to coordinate activities at different sites and hence it is a planning criterion when considering development options.

The need to address future population is identified in the criterion about the appropriateness of development for a future demographic in the area. Finally, the need for sustainability is highlighted in the terms of reference, which called for ways to reduce the ecological footprint. As noted earlier, this is very difficult using the traditional "working harbour" which was based on trade and the movement of goods, services and people. The literature review highlighted activities that may be compatible with this criterion for city-ports such as White Bay.

9. The Planning Criteria Matrix

Legend	**Meets criteria**	**Possible Uses** (includes new, overflow and relocated)				
2	Strongly					
1	Moderately					
0	neutral/not applicable					
-1	not preferred/would require significant mitigation	Sydney	Maritime	Concrete	Boat Building	Industrial
	measures to meet the criteria if adopted	Harbour	Film Set	Plant	& Repair	Ecology
-2	Incompatible with the criteria	Heritage			Precinct	
		Centre				
	Potential Criteria promoting desirable outcomes		**Indicative Only**			
	Land tenure enables effective ongoing planning		1	0		
	Maritime working		2	1		
	Non-maritime working		0	2		
	Maritime history		2	0		
	Non-maritime history (eg. Castlefields in Manchester)		2	1		
	Number of ongoing jobs (relative to scale, impacts)		1	-2		
	Employment opportunities (non professional)		1	1		
	Visual acceptability for residents and non-residents		2	-2		
	Compatibility with surrounding land uses					
	(includes hours of operation, noise, access, etc.)		1	-2		
	Enables cycling/pedestrian access		1	-1		
	Establishment effort compatible with worth		-2	1		
	Integrates with the open space network		1	-1		
	Provides opportunities at other harbour sites		1	1		
	Solves problems at other harbour sites		0	0		
	Social/community value		1	-2		
	Environmentally compatible with site conditions		1	-1		
	Enables other compatible activities to occur on site		-1	-2		
	Enhances surrounding land values		1	-2		
	Ability to be improved over time		1	-1		
	Is an effective economic use of the site (unless the					
	social/community value is considered more important)		0	-2		
	Appropriate for an increased inner Sydney population		0	1		
	Compatible with other harbour planning (Cockatoo Is., etc)		2	2		
	Reduces the ecological footprint of Sydney		0	-1		
	Conformity with existing plans and regulations					
	SREP 26 compatible		1	2		
	Glebe Island and White Bay Masterplan compatible		1	2		
	Australian customs regulations		-2	0		
	Evidence of demand for possible uses		-2	2		

10. Economic Viability of Proposed Land Uses

The economic viability of proposed uses requires in-depth studies by financial experts at a greater depth than is possible in this report. The viability issue has been addressed in other port redevelopments, notably the Fore River redevelopment (Rafferty, 1996). In that particular case, viability was calculated by the development costs, the municipal revenue impact and the number of jobs created (see Appendix 3). This may have been appropriate in that context, but it does not necessarily translate directly to White Bay.

While the methods used in the Fore River case are not immediately transferable to White Bay, it is possible to identify potential land uses and provide evidence of demand, or potential demand. The land uses discussed below are not costed against one another. It is also important to note that the planning criteria proposed included social and community value, and that some uses of high social and community value may need to be subsidised, or cross-subsidised, in order to exist. The ability of particular uses to co-exist also enables a "viability package" to be constructed so that desired land uses may be obtained, and the overall viability of the site is maintained.

The proposed land uses and evidence of viability are presented below.

10.1 Sydney Harbour Heritage Centre

The concept of a new heritage centre for Sydney is exciting. Stakeholders could include the Powerhouse Museum, the Australian Museum, the Museum of Sydney, the Australian National Maritime Museum and the Sydney Harbour Foreshore Authority. Further discussions will be needed on this issue to ascertain the willingness and ability of organizations to be involved in such an idea.

The viability of this proposal is enhanced by thinking of it as a "living museum" and a "heritage centre in progress". In other words, the museum is similar to the industrial heritage of Castlefields in Manchester, or places such as Timbertown in Wauchope, in its approach to displays and objects. The "heritage centre in progress" idea refers to the building it up over time as more activities that currently form the "working harbour" are made redundant. This could extend to bringing in items from Port Botany as it too changes over time.

The existence of a significant heritage building (the White Bay Power Station), and the willingness of the Sydney Heritage Fleet to move to White Bay (as confirmed in the Focus Group on August 15), are good starting points for this concept. Other potential advantages include the possibility of reclaiming the history of the Glebe Island abattoir and incorporating this into a heritage site. The lack of deep water space at the Australian National Maritime Museum, plus the potential to attract historical and marine oriented research activities to the site, make the inclusion of "overflow" activities likely. The main ingredients that appear to be missing are a commercially viable activity on the site to complement the heritage uses, and the ferry/light rail transport access to link the site with the city centre. A "commercially viable activity" (or activities) could include accommodation (as is done in Fore River with the USS Salem), or perhaps a market, as was accomplished with Granville Island in Vancouver (see Appendix 4).

This idea will take time to develop, but it is compatible with other uses and, over time, can potentially become a feature and major tourist attraction for Sydney.

10.2 An Eco-Industrial Park

This proposed activity is along the lines of Dagenham Dock in London. The viability of this approach to industrial development has not been seriously tested in Australia. The only genuine attempt to create a new eco-industrial park (as opposed to developing industrial ecology by linking existing activities in sites such as the Kwinana Industrial Area south of Perth) has been at Synergy Park, in the suburb of Carole Park between Brisbane and Ipswich. This western Brisbane site has been developing, but not entirely as originally envisaged (which was to value-add to the agricultural production of the nearby Lockyer Valley). The lessons learned from the Synergy Park experience have been documented, and include the need for a coordinating organization to build trust and relationships so that corporations are willing to engage in this form of development (Roberts, 2004).

The viability of this activity at White Bay rests mainly on the location of White Bay in relation to Sydney, and on the deep water access. Viability cannot be extrapolated from the overseas experience, particularly as some sites in the USA bear no resemblance to the White Bay site. The viability of this approach at a site such as White Bay is untested in the Australian context. The closest example to Sydney was the failed Steel River project in Newcastle in the late 1990s. This project had high environmental requirements on a site in

Newcastle at a time when the Newcastle economy was stagnating, and there were many other vacant industrial sites that had less environmental requirements.

The possibility of companies that care about a "clean and green" image being able to operate in Balmain is compatible with the environmental awareness of inner-west residents. In order to make this idea viable, it would be necessary for industrial ecology experts to identify potential land uses, inputs and outputs, and develop a plan for a mix of industries. This would be a different form of industrial estate than conventional industrial estates where similar industries (eg. Light industry, logistics, etc.) is desired. In addition to reducing "waste", the resulting industrial park could easily incorporate water and energy saving features, and be compatible with other public access and public open space considerations.

10.3 A boat building and repair precinct

This activity is currently scattered in various parts of Sydney Harbour. While that may be an advantage, some of the marine construction work has been situated at sites where there is/was overcrowding and poor environmental suitability for such activities (eg. Rozelle Bay). It is possible that locating these facilities in White Bay can result in environmental improvements because of the better site, the opportunity to plan it better, and the ability to commence with new technology. There is certainly viability from boat builders and other people to maintain a presence in Sydney Harbour. There is also the possibility of linking this idea with the Sydney Heritage Fleet, thus showing the changes in boat building technology and methods over time. This activity is also compatible with other uses, including recreation, if carefully planned. The co-existence of boat building/repair at Woolwich Dock with the development of walking trails at the site is an example of how good planning and design can enable both activities to exist.

The boat building/repair precinct idea represents a relocation of existing industries, but also has the potential to attract new industries and jobs, similar to the approach taken in Hull (England). This idea can be extended to marine contractors more generally. Waterway Constructions is the largest marine contractor in Sydney Harbour, and offers potential to expand or relocate from Rozelle Bay to White Bay. Further discussions with boat builders, boat repair companies and marine contractors are needed to confirm the level of viability, but again this is an idea that can be built up over time. It is viable to the extent that firms currently exist on less than optimal sites, and that if some of these firms move over a period of time a precinct will emerge that can generate its own identity to attract additional

companies. In considering this idea, it is important to recognise the proximity of parts of the White Bay site to residential development. The hours of operations is also an issue that needs to be addressed. Currently there are no restrictions on shipping, but in order to guarantee residential amenity there would need to be limits to the working hours if this facility was developed at White Bay.

10.4 An educational and marine research centre

This use is not strictly "working harbour" but it is compatible with other uses that could clearly be labelled working harbour. It represents Vallega's (1996) idea of sustainability incorporated into the redundant city-port site, while allowing the seaport to develop. Research undertaken at, or from, this site could then improve environmental quality of other ports and the ocean.

The commercial viability of this proposal has not been tested. The University of Sydney has a long lease at Callan Park, so it is possible that locally based educational institutions would contemplate setting up in such a location. The entry of international universities into the Australian education market could provide an opportunity to offer a lease on a site such as White Bay – with transport infrastructure provided it would be easy to market this site to prospective staff and students. If this is possible, institutions that have a maritime focus, or are committed to maintaining and enhancing the maritime character of the site, should be preferred.

11. Recommendations

The following recommendations arise from the research.

Recommendation 1:
It is possible to maintain this part of Sydney Harbour as a 'working harbour", but not in the way that it has been over recent decades.

Recommendation 2:
"New" (including relocated and overspill) land uses that comply with the "working harbour" concept need to be compatible with changing social values about environmental quality and amenity.

Recommendation 3:
Improving access to the site is important in changing the viability of potential land uses. Access relates to passenger ferries, light rail, other public transport, and cycling and walking. Leichhardt Council could adopt a proactive approach to this issue because it may be a catalyst for desirable land use changes, and if this issue is not emphasized in any discussions about redevelopment the existing infrastructure and opportunities could be lost forever.

Recommendation 4:
White Bay is a suitable site for a maritime industrial site that could include a Sydney Harbour Heritage Centre, the Sydney Heritage Fleet and contemporary boat building/boat repair facilities. This site could demonstrate changes in boat design and construction over time, and provide employment opportunities and a site for uses with high social value.

Recommendation 5:
If recommendation 4, or part thereof, is appealing, it is important to engage all stakeholders in a consultative planning process. This includes Sydney Ports, the Sydney Harbour Foreshore Authority, the National Trust of NSW, the Australian National Maritime Museum, the Powerhouse Museum, the Museum of Sydney and the Australian Museum.

Recommendation 6:

The economic viability of the site needs to be considered in its entirety. Uses that fragment the site, or limit the potential for other uses to operate on the site, should be avoided. Considering the economic viability of the site as a whole can allow for cross-subsidization, if necessary, so that economically viable land uses can co-exist with socially valuable uses.

Recommendation 7:

The planning criteria presented in this research report needs to be integrated with a plan for the future of White Bay. This plan should contain a vision that has wide spread support, and be the basis for an implementation strategy that is proactive in seeking to attract and maintain desired land uses in White Bay. The plan should also recognise that White Bay is entering a new stage in the model of the City-port interface.

Recommendation 8:

If some of the potential land uses identified in this report are attractive to Leichhardt Council, detailed analysis of their commercial viability and planning should be undertaken. It is important to note that some activities may be commercially viable, but will likely take a great deal of effort to bring to fruition.

12. Conclusion

White Bay is an important site in Sydney Harbour that is connected to surrounding land (Balmain, Glebe Island, White Bay Power Station and the Rozelle Marshalling Yards) and to surrounding bays (Blackwattle Bay, Rozelle Bay and so on). It is, however, relatively disconnected from the city centre and other major sites in Sydney, and is currently a strategic and vulnerable node in a highly stressed transport system.

The site has been used for a variety of industrial uses over 140 years. These uses accord with the discourse of "working harbour". The nature of these industrial uses has changed over time, as have the surrounding land uses. Residential areas now abut the port, but unlike in previous times there is a lack of material and cultural identification with the port by many residents. As was highlighted in Section 6 of this report, White Bay is a declining industrial cityport (Stage 3 of the model in Hoyle, 1988) but with potential to be redeveloped. This report has identified a number of possible land uses that are suitable as redevelopment options and are consistent with the discourse of "working harbour". These land uses represent a move to Stage 5 of the model presented by Hoyle (1988).

This report also contains a set of criteria for evaluating any proposed land uses for the White Bay site. The 23 planning criteria presented and justified in this report have been developed from the literature and studies of international and local examples of port redevelopment. They have been considered in relation to the existing and potential future characteristics of White Bay. While there are other planning considerations such as SREP 26, the Glebe Island and White Bay Masterplan and the "secure zone" under the Customs Act, these considerations are amenable to change if there is sufficient support for a compelling vision of an alternative future for the site.

Given the strategic importance of White Bay and the opportunities identified in this report, it is worth the effort to develop a vision that can garner widespread support. It is an opportunity to establish something of value for current and future generations. With innovative thinking and careful planning, White Bay can become an internationally acclaimed example of a port redevelopment that contributes to sustainability.

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Appendix One

White Bay Focus Group consultation

White Bay Focus Group Consultation

As part of the process for preparing this report, a focus group was held on Tuesday 15 August 2006. Invitations were sent to a range of people and organisations. There was some concern expressed at the focus group that it was not representative of all sections of the community, but there was also strong support for the position that the focus group had been attended by a wide range of interests.

A number of people were invited and were unable to attend. These people included Sandra Nori (the MLA for Port Jackson), Michelle McKenzie (Greens Councillor on Leichhardt Council), Kate Hamilton (Greens Councillor of Leichhardt Council), Kevin Warrell (Metro Transport Sydney) John Stamolis (Area representative) and Sydney Ports. This was partly due to the short notice of the focus group, which was conducted prior to a weekend workshop at the Balmain Town Hall. There was an overlap of people between the focus group and the workshop. The site characteristics and the planning criteria that was presented to, and updated following, the focus group were made available to the workshop organisers.

The focus group was held at Clontarf Cottage. The following people attended it:

Ann Bastock,	President, The Balmain Association Inc
Damien CobleyFinch	Leichhardt Councillor
Alan Edenborough	Sydney Heritage Fleet (Rozelle Bay)
Mary Jane Gleeson	EcoTransit Sydney
Kath Hacking	White Bay community
Cr. Marcelle Hoff	Sydney City Council
David Lawrence	Save Rozelle Bay Association, The
John Mant	Lawyer – chaired White Bay workshop
John Paull	White Bay Joint Steering Committee – On behalf of Paul Cooper
Scott Pedder	Leichhardt Council
Christina Ritchie	White Bay community
Ian Scandrett	President, Balmain & Rozelle Chamber of Commerce
Rebecca Ward	National Trust of Australia, NSW
Gordon Weiss	Birchgrove Precinct Committee chair

The focus group lasted two hours. It began with an introduction by Dr. Phil McManus. Attendees were invited to review a draft list of site characteristics, a draft set of points about the notion of "working harbour" and a draft set of planning criteria that was presented in the form of a matrix (similar to Section 9 of this report). Discussion focused on these specific issues in the focus group.

Appendix 2

Dagenham Dock Sustainable Industrial Park

Dagenham Dock Vision Implementation Strategy
EXECUTIVE SUMMARY

Background and Introduction (Chapters 1 and 2)

Dagenham Dock covers 133 hectares of brownfield land in a major development corridor between the A13 dual carriageway and the River Thames in the Heart of the Thames Gateway. Dagenham Dock lies in the 'London Riverside' Zone of Change as developed by the Thames Gateway Strategy Executive which contains a series of large and significant regeneration sites offering considerable new housing, employment and mixed-use development opportunities. A clear, feasible vision for Dagenham Dock was required which complements this, and other, wider regeneration initiatives whilst setting its own distinct future.

Currently the site is characterised by poor access, fragmented ownership, contaminated land, and open storage of scrap metal, containers and aggregates all of which result in a "bad neighbour" image. There is a very clear potential to improve the current situation. The fundamental locational factors for the site are very positive. The site enjoys fairly close proximity to London Docklands and in recent years higher value development has crept ever closer. The site has excellent visibility, due to the recently elevated section of the A13 adjoining the site as well as an interesting river frontage. The adjoining Ford plant has an international profile from which Dagenham Dock can benefit. Similarly Barking Reach has a national profile as the largest new housing development in London and a key development in the Thames Gateway.

As part of advanced works for the Channel Tunnel Rail Link, and with funding from the East Thamesside Partnership, a new link road between Dagenham Dock and the Goresbrook Interchange (A13) is currently being built (Choats Manor Way). This new access is raising development interest in Dagenham Dock and removing long standing barriers to investment. In May 2001 the London Borough of Barking and Dagenham in partnership with the London Development Agency and with funding from the East Thamesside Partnership appointed a team of consultants led by Scott Wilson to produce the Dagenham Dock Vision Implementation Strategy to ensure the area's regeneration potential is fully exploited and that easy to develop sites do not become low employment warehousing sheds whilst other sites remain stagnant.

The Vision (Chapter 3)

The Partners' vision for Dagenham Dock was the creation of a best practice example of modern sustainable industrial development covering issues such as recycling operations, energy efficiency, 'green links' between businesses, transportation and waste minimisation on a site that can offer substantial new employment opportunities and a dramatically improved appearance. The Partners developed the vision recognising the existing profile and nature of businesses on the site, the need to ensure riverside wharves are retained and a desire to create a distinct identity for the site. The Partners identified the potential for growth in the environmental business sector with increasing legislative requirements and government targets requiring the adoption of new practices and technologies.

Recycling, energy efficiency, waste minimisation, transport efficiency and numerous other environmental issues are increasingly rising up the agenda due to a plethora of new requirements including the Kyoto Protocol, EU directives (such as ELV and Landfill) and recycling targets at a number of different spatial levels (see section 4.1). All these issues require governments, businesses and planners to look at ways of addressing and achieving sustainable development.

In developing the vision, the Partners also recognised the wide range of additional funding opportunities producing such a Strategy would open up as well as providing Dagenham Dock with a clear, distinct image and raised profile.

The vision therefore focuses development at Dagenham Dock around the environmental business sector including recycling and reuse of materials, which effectively takes the current range of activities such as car breakers, glass recyclers and aggregate companies, but moves forward to address the emerging needs of society in the 21st century. Through this Dagenham Dock offers the potential to be a trail blazing example of how addressing some of the big environmental issues of the new century can work hand in hand with the regeneration of areas of poor environmental quality and relatively high levels of deprivation.

Dagenham Dock aims to offer a best practice solution of how many environmental issues can be addressed and seen as opportunities. It offers the chance to highlight the regeneration benefits of tackling environmental problems, to adopt a more sustainable approach to development and to dispel the myth that the environmental business sector is unattractive and hinders regeneration. The Strategy lays out how and why the vision can and should be implemented.

The Strategy (Chapter 3)

The vision has been developed into a full implementation strategy bearing in mind the need to attract future occupiers/partners potential investors, and funders. Accordingly, the emphasis is on the introduction of higher value/high technology research and development based activities and spin-offs, whilst maintaining existing activities and thus providing a range of jobs relevant to the needs of East London's residents. This vision has been developed through regular meetings, an extensive literature review, expert knowledge, internal discussions and a round table discussion with prominent academics and researchers.

The Strategy recommends that a Sustainable Industrial Park (SiP) should be developed at Dagenham Dock. The SiP would meet the definition of the well established term, an Eco-Industrial Park (EiP) which is

"a community of businesses that cooperate with one another and with the local community to efficiently share resources (information, materials water energy infrastructure and natural habitat) leading to economic gains in environmental quality and equitable enhancement of human resources for the business and local community" (See Section 1.3 and Annex 1). However, the concept of sustainability implies that both larger time and spatial scales as well as stronger local community aspects must be introduced into the vision. Essentially, the SiP will seek to make links with and beyond the business community to cultivate:

- linkages with local community and

- the needs of future generations

Essentially this will mean that the Dagenham Dock SiP will have five different scales of operation enabling an interconnected but flexible approach to implementation. The scales of operation are listed below (See section 3.1 for full details):

1. A Research Centre for the UK, Europe and the wider International Community - The centre piece/flagship of the Dagenham Dock SiP is an Environmental Technology Resource Centre (ETRC) for London. This centre would coordinate the different scales of operation outlined below and would have specific tasks to do with local training and education as well managing the park and "ground truthing academic research." The Centre would be essential in delivering the latest environmental technology to Dagenham Dock and the full delivery of the vision. (See the Business and Employment Action Plan (No. 2) and Sections 4.3, 5.1, 6.11 and 8.2).

2. A Virtual EiP for London & the South East- IT links and web based trading mechanisms to facilitate knowledge and resource transfers enabling EiP principles to be carried out at a wider scale and ensure Dagenham Dock is fully integrated within environmental networks (See Action Plan 6).

3. Green Business Park for Dagenham Dock and Thames Gateway - Attracting SMEs with a 'green' focus. A major study into the opportunities for 'green collar' employment commissioned by the LDA is currently being finalised. There would be specific branding & marketing of the site (see Section 6.8) along with improved infrastructure for the site. Industries would benefit from clustering and site-wide facilities. A range of unit sizes and types would be required from 'incubator units', 'next step' workspace and larger industrial units. Business would be encouraged to look at the 'triple bottom line' and the development of concepts such as 'Factor 4' and the 'Natural Step'. Businesses would also be required to sign up to a site wide bespoke environmental management system (See section 7.2), which would include BREEAM assessments (Action Plan 7), Green Travel Plans (Action Plan 9) and requirements for resource efficiency monitoring including energy, waste and water (Action plans 3, 4 & 5 respectively). A landscape architect has produced guidance on good environmental management, landscaping and design (See section 7.1, Action Plan 8 and Annex 3).

4. A Local Community Resource for Barking and Dagenham - Ensuring 'sustainability' in its full sense by involving local people. Encouraging local employment, involving local people, schools, colleges and universities in education and training. A 'sustainability trail' could be created around the site for education purposes and promoting environmental issues such as local recycling initiatives.

5. Industrial processes within the Dagenham Dock SiP - Promoting 'green chains' between businesses on site moving towards the ideal of a closed loop system where waste products from one business are resource inputs for another. This would apply to as many new and existing businesses as possible.

The ETRC would represent the core of the SiP's operation. The Strategy highlights in detail the pivotal role that the ETRC would play in the development of the park. The Centre would be responsible for:

1. A programme of technology research and product/process development.
2. Dissemination and Best Practice initiatives, workshops and marketing/promotion where appropriate.

3. Provision of advice and information in relation to patent/intellectual property and technology transfer issues.
4. Provide a networking base and clearing house to match researchers with business sponsors with a view to generating new business ventures applying the results of the R&D projects undertaken at the Centre and elsewhere.
5. Provide business support, information and networking opportunities to 'green businesses and a focus for 'green business clubs' as appropriate, through provision of a venue for meetings, conferences and workshops and measures such as dedicated web-sites.
6. Provide a Web-based 'Exchange' or "waste resource" trading facility in support of the virtual EIP.
7. Provide appropriate types of workspace and support for relevant business and research and development initiatives.
8. To develop linkages with businesses, research centres, government, NGOs and local authorities in East London and the London City Region.
9. To provide a range of technological and process orientated solutions to better environmental management at Dagenham Dock, ranging from high to low technology solutions. In particular, to promote the concepts of Triple Bottom Line, resource productivity, Factor Four and the Natural Step.
10. To promote where feasible closed loop system systems for sustainable environmental management on Dagenham Dock and to manage these as a demonstration of the concept with a view to expansion on the site.

The Strategy states that given

- the positive view of the property specialists
- the combination of the site's location and improved access, together with
- the profile and business advantages created by development of a prestigious new Environmental Technology Resource Centre (ETRC) on the site and
- the development of radically improved highways and drainage infrastructure (including public adoption of all roads) and
- creation of an attractive landscaped setting for development

then Dagenham Dock could be potentially attractive to business from other parts of London and beyond seeking high quality premises and space for expansion.

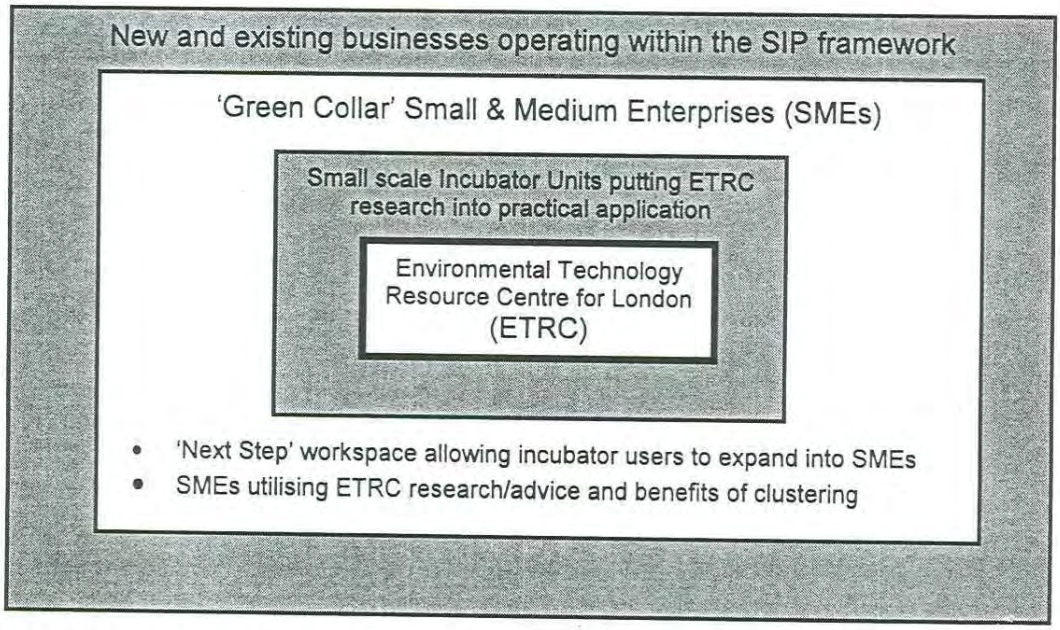
The success of the Dagenham Dock development will depend on its advantages and characteristics relative to other property developments in the Thames Gateway. The external property market perception will depend to a great extent upon:

- Successful promotion of the 'SiP' concept including the development of the ETRC and
- How its utility as a tool of urban regeneration can be developed and promoted to potential investors, businesses and the community.

Potential Activities at Dagenham Dock (Chapters 4 and 5)

The following list is not meant to be definitive and it will be important to maintain some degree of flexibility. However, the activities below provide some indication of what operations could be present on the Dagenham Dock site:

- Research and Development - ground truthing of research on reclamation, recycling and reprocessing of construction waste, aggregates, plastics and glass, etc.
- Small R&D manufacturing units ('Incubator Units')
- 'Next Step' Workspace for the environmental business sector – SMEs utilising environmental technology, for example by producing products from waste materials – a development on from the 'incubator units'.
- Training and education facilities associated with environmental technology
- Material Reclamation Facility for East London Waste Authority
- Recycling and reprocessing of materials
- A 'Sustainability Trail' for visitors, schools and local people.
- IT information storage and backup for London
- Web based trading businesses
- Internet providers
- General B2/B8 (industrial, warehousing and distribution operations) with ancillary B1 willing to sign up to the continuous improvement philosophy of the SiP and take aboard the requirements of the Supplementary Planning Guidance to be produced on the basis of the Strategy.



The SiP aims to build upon the manufacturing heritage of the East End of London. It can also be seen, together with planned Centre of Excellence in Manufacturing and Engineering at Fords, as helping to develop a complementary focus to the East End based around manufacturing, much like biotechnology is now clustering around West London.

Business Development and Linkages (Chapter 5 and Action Plan 2)

If it is to be developed as a SiP then the site will need to extend the range of businesses it might attract and the linkages that might be developed with environmental businesses and organisations regionally and nationally. To establish itself as a high profile eco-industrial park, Dagenham Dock will need to network with

international companies and national and international centres of excellence in environmental management and eco-industrial technologies.

The Strategy recognises the importance of establishing links and networks with a wide range of businesses and organisations. Organisations within the Thames Gateway that the SiP could link with, include:

- East London Business alliance
- Learning Skills Council
- Business Link East London
- East London Chamber of Commerce and Industry
- East London Small Business Centre
- Thames Gateway Technology Centre
- Centre for Excellence for Manufacturing and Engineering
- University of East London and the four other Thames Gateway Universities working together on environmental technology issues.
- London Remade
- Environmental Business Action

Further a field other potential partners include:

- University of Cambridge Civil Engineering Department
- Imperial College
- United Nations Environment Programme Initiative on Eco Industrial Parks

Property Issues (Chapter 6 and Action Plan 1)

It is estimated that Dagenham Dock will take up to 10 years to develop fully, depending upon the level of interest and support for the development concept and wider market conditions. The Strategy highlights the need for the LDA to purchase land and infrastructure by negotiation or through compulsory purchase as and when required in order to deliver the vision. In determining the way forward the Strategy inevitable highlights additional areas of work which need to follow on with an evaluation and demand study for the ETRC being the first priority.

Infrastructure and Site Appearance (Chapter 7 and Action Plans 8, 9, 10 and 11)

The poor physical infrastructure, notably road access, contaminated land and poor drainage which leads to occasional flooding present a challenge to the development of a SiP and therefore the Strategy clearly identifies the measures needed to remove the barriers to implementation of the vision. The need for public ownership of infrastructure and its upgrading to modern standards is laid out (See Action Plans 9, 10 and 11).

The Strategy also identifies the importance of making the area more attractive and a more pleasant place to work. The Strategy highlights how the 'green' vision needs to be reflected in the appearance of the park. It also identifies the importance of requiring industrial units to be designed and built to enable flexibility to changing circumstances and changing operational requirements. A 'City of Glass' concept is also presented for site appearance linked to glass reprocessing activities.

Funding (Chapter 8 and Annex 6 and 7)

Delivering the vision will require substantial amounts of funding over the next ten years. No single source of funding could finance the wide range of requirements laid

out therefore the Strategy highlights a cocktail of funding opportunities. It is clear the principles of the vision and details of the Strategy are consistent with the funding criteria of number of potential sources with the environmental focus opening up additional funding opportunities. Academic funding sources are increasingly being focussed on 'real life' application and the SiP Strategy provides a ideal opportunity to link academic research with the business sector.

Overall responsibility for property transactions, physical development, environmental improvement and construction would probably require the establishment of a formal structure or partnership led by the London Development Agency or a new Urban Regeneration Company (URC) for the wider area including Dagenham Dock. In the consultancy team's opinion the site's inclusion in a URC area probably offers the best opportunity to generate the substantial level of political momentum and resources required to deliver the renaissance of Dagenham Dock as a SiP.

The Action Plans (Part II of the Dagenham Dock SiP Report)
Finally, a series of eleven action plans have been developed which set out a blue print for developing different aspects of the park.

The action plans provide guidance on the following:

- ***Action Plan 1 Property*** – development of land assembly, marketing and stakeholder liaison strategies, a suitable management regime and a delivery plan.
- ***Action Plan 2 Business Development and Employment*** – development of the ETRC and cultivation of potential business support networks
- ***Action Plan 3 Energy*** – sustainable supply management and distribution of energy around the site.
- ***Action Plan 4 Waste*** – setting up and siting a Material Reclamation Facility on the site as well as a waste steering group for coordination, minimisation and management of waste on the site the site.
- ***Action Plan 5 Water*** – supply and conservation of water
- ***Action Plan 6 Information Technology*** – provision of IT infrastructure and generation of eco industrial community
- ***Action Plan 7 BREEAM*** – bespoke assessment methodology and guidance for more environmentally sensitive building design
- ***Action Plan 8 Landscape and Site Appearance*** – City of Glass and guidance on landscape design green networks, boundary treatment street furniture and environmental improvement
- ***Action Plan 9 Transport*** – pedestrian access, cycle access, public transport provision (bus, river and rail), integration of transport networks and freight access by rail and river.
- ***Action Plan 10 Infrastructure*** – internal paved infrastructure improvements and surface and foul water drainage
- ***Action Plan 11 Contaminated Land*** – strategies for more sustainable approaches for land remediation.

Appendix 3

Fore River Assessment of Scenarios, Goals and feasibility criteria

Table 15.1. Assessment of scenarios

Measures	Scenario 1: incremental use	Scenario 2: traditional redevelopment	Scenario 3: anchor projects	Scenario 4: technology and tourism	Scenario 5A: revitalized port	Scenario 5B: revitalized shipbuilding
Physical compatibility	Good	Fair	Good	Excellent	Poor	Excellent
Total development costs	$31M	$26M	$36M	$34M	$40M	$42M
marketability (absorption)	18 yrs	16 yrs	13 yrs	12 yrs	14 yrs	14 yrs
development index (NPV)	$4.3M	$7.2M	$9.9M	$10.9M	($4.7M)	$10.7M
Jobs added (on-site)	2760	3380	3830	3350	2440	2400
municipal revenue impact	$3.04M	$4.25M	$4.34M	$3.92M	$2.37M	$2.34M
Auto impact (w\mitigation)	low	moderate	moderate	moderate	very low	very low
rail/truck impact	low	low	low	low	high	moderate
DPA compatibility	Good (potential)	Poor	Poor/Fair	Good	Excellent	Excellent
MHC compatibility	Good	Poor	Fair	Excellent	Poor	Good

Source: *Scenarios for Development of the Fore River Staging Area* (September 21, 1993) and *Feasibility Report: Development Scenarios* (January 25, 1994), prepared by the consultant team led by Lane, Frenchman and Associates.

Table 15.2. Scenarios, goals and feasibility criteria

SCENARIOS: The conceptual elements comprising each scenario were first developed. Four such elements were identified by the consultant team:

- Increment of development and disposition: The five identified scenarios ranged in the approach taken on the size of the smallest development unit from individual building spaces to parcels to the entire site. The approach of a given scenario significantly affected all other scenario features such as infrastructure requirements and marketing.
- Mix and location of uses: A consistent vocabulary of uses was considered for all scenarios but with a different emphasis in each. Options ranged from an ad hoc mixture to a special mixed use district to a marine industrial park.
- Critical infrastructure improvements: Access to and within the site was the key issue. It was understood that road access decisions would affect site use and development patterns of each scenario and that broader land and water access needs would depend on other scenario elements.
- Site development and marketing entity: Options included: a non-profit; MWRA; public/private partnership; state port authority; and some combination of the foregoing.

GOALS: The overarching goal was to maximize benefits, while minimizing negative impacts. Specific supporting goals included:

- Enhancing public use of property
- Maintaining site's capacity to serve as a port
- Providing reasonable economic returns to MWRA
- Preserving the physical integrity of the site
- Encouraging a balanced mix of uses

SCENARIO FEASIBILITY CRITERIA: Scenarios were evaluated in terms of five criteria:

- Compatibility with the physical characteristics of the site
- Economic feasibility, including market absorption rate, costs and returns
- Employment and municipal revenue impacts
- Transportation impacts
- Regulatory consistency with state DPA, historic preservation, and hazardous waste regulations

Source: *Scenarios for Development of the Fore River Staging Area* (September 21, 1993) and *Feasibility Report: Development Scenarios* (January 25, 1994), prepared by the consultant team led by Lane, Frenchman and Associates.

History of the Fore River Shipyard

Less than 10 miles south of Boston, the Fore River Shipyard is an 111-acre site, 2/3 in Quincy and 1/3 in Braintree. Once one of the great shipyards in the United States, Fore River Shipyard was founded in the early 20th century by Thomas Watson, Alexander Graham Bell's former assistant. At Fore River Shipyard's peak during WWII, it employed 50,000 people and was a part of President Franklin D. Roosevelt's "Arsenal of Democracy". Fore River Shipyard produced the great ships that fought in all the major WWII naval battles.

After WWII, Fore River Shipyard entered into a decline; the last ship was built around 1982. In order to accommodate the construction of LNG tankers, beginning in the 1970s, the giant 1,200 ton "Goliath" crane was built specifically to place the aluminum spheres on the LNG's.

MWRA took over the property for harbor cleanup in the 1980s, and in the late 1990s Mass. Heavy Industries made a futile attempt to revive shipbuilding. The Maritime Administration (MARAD) then placed Fore River Shipyard up for auction and Dan Quirk was the highest bidder.

Mr. Quirk has since cleaned up and landscaped the property, and Fore River Shipyard currently serves as the Central Receiving Point for new cars for all Quirk dealerships. In addition, Mr. Quirk has spent almost $1 million on environmental remediation. Fore River Shipyard is now on the tax rolls in Quincy and Braintree, and the overhead craneway was removed to open views to the water.

After conducting a nationwide search and receiving proposals from ten of the best urban design firms in North America, Mr. Quirk chose RTKL, one of the top urban planning firms in the world (www.rtkl.com). RTKL is committed to community-based planning and "smart growth".

The initial planning process will take a minimum of 6-8 months, and all potential uses will be considered, including marine-related, residential, retail, office, and entertainment.

The goal of the Fore River Shipyard Redevelopment Project is to create a mixed-use, working waterfront "village" that will attract not only Quincy and Braintree residents, but will appeal to the entire region. In addition, open space and public access will be important parts of the plan, along with memorializing the men and women who worked at the Shipyard throughout its long history.

Fore River Shipyard Redevelopment Project

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The Boston Globe: From shipyard to village: Quirk to undertake billion-dollar redevelopment of storied Fore River works

The Boston Globe
May 21, 2006

From shipyard to village: Quirk to undertake billion-dollar redevelopment of storied Fore River works
By Robert Preer

QUINCY -- Auto dealer Dan Quirk has neither boats nor cars in mind as he plots the redevelopment of the storied Fore River Shipyard.

Instead the brash entrepreneur envisions a vast waterfront community, with condominiums, offices, shops, and restaurants erected on an industrial wasteland that counts a sludge treatment plant, oil tanks, and power plant as neighbors.

Once one of the most productive shipyards in the world, Fore River has been little used in the 20 years since General Dynamics shut it down. Previous efforts to revive it for shipbuilding have failed, but Quirk, who bought the shipyard three years ago and stores cars there, said he is not fazed by the property's recent history of failure.

"This is Quincy and Braintree, which are vibrant economic areas. They can absorb a development of this magnitude over a period of 15 years," he said.

So far, Quirk has sketched a broad vision of the shipyard's transformation into an urban village. His development team is expected to unveil a master plan for the 110-acre site this year.

Among the shipyard's valuable assets is its waterfront location; high-speed commuter boats already convey South Shore commuters to and from Boston from a nearby ferry stop. Moreover, as beat up as the shipyard is, Quirk is following a proven formula for redevelopment of maritime and industrial properties whose glory days faded with the passing of the region's manufacturing economy.

On the north end of Quincy is Marina Bay, a former air base that was transformed in the 1980s into high-priced condominiums, restaurants, nightclubs, office buildings, and a marina. A similar complex is planned just a few miles south of Fore River at the Hingham Shipyard.

"This is a great setting," said Gary Maule, principal of RTKL Associates, the Washington, D.C., consulting firm crafting the master plan. "It has a rich history. It is on the waterfront, and it is tied into the regional transportation system."

John Dobie, planning director for Quirk, described the Fore River project as "a little bit of Marina Bay, a little bit of Charlestown Navy Yard."

The Fore River Shipyard, though, has obstacles its neighboring waterfront communities do not.

Marina Bay has a spectacular view of Boston Harbor and the city skyline. The Hingham Shipyard sits in Hewitt's Cove and looks out on the Back River as it empties into Hingham Bay. But the Fore River Shipyard overlooks petroleum tanks, a power plant across the river, and a factory that processes fatty acids. It is next to the Massachusetts Water Resource Authority's pellet plant, which converts sludge from the Deer Island Sewage Treatment Plant to fertilizer.

Dobie said the industrial atmosphere of the surroundings has an appeal. "It's going to have a certain amount of grit. It is going to appeal to people who want to live in a real environment," he said.

Across the country, dozens of old industrial sites known as "brownfields" are being converted into housing, shops, and parks as environmentalists and developers work to bring polluted properties back to productive use. "The stigma issue is really going away," said Charlie Bartsch, a brownfields specialist for ICF International, a Washington, D.C. consulting firm.

Access is both a plus and minus for the yard. The Harbor Express commuter boats, which go to downtown Boston and Logan Airport, dock next door. Getting to the yard by automobile, though, is difficult. Nearby routes 3A and 53 are congested. The yard can be reached from Route 3, but via backroads in Braintree and Weymouth.

But lack of highway access should not be a major obstacle, said Dennis Frenchman, professor of urban design at Massachusetts Institute of Technology. "It might not be a great site for a regional shopping center, but for residential uses, it's not that difficult to get to," he said.

Frenchman prepared a report on the shipyard in the early 1990s, when officials were pondering the property's fate. He said the deep water port makes the yard well-suited to marine research activities. He also advocates preserving historic features of the site, which Quirk's planners said they would like to do.

Though heavily used over the years, the property has had a series of environmental cleanups, by Quirk and previous owners, and is acceptable for reuse now, he and his planners said. Last year, two employees of an asbestos removal company were killed at the shipyard, when a partially dismantled crane collapsed on a building.

After closing it in 1986, General Dynamics sold the shipyard the following year to the MWRA, which used it as a staging area for the Boston Harbor cleanup. As the harbor project concluded in the early 1990s, state and local officials began entertaining proposals for its reuse. In 1995, Sotirious Emmanouil, an MIT-trained shipbuilding executive, promised to restore shipbuilding there and two years later won a $55 million loan guarantee from the US Maritime Administration.

While Emmanouil's company, Massachusetts Heavy Industries, cleaned up much of the yard and constructed some buildings, the firm never secured shipbuilding contracts and also became embroiled in conflict with its general contractor. In 2000, the company defaulted on its loans and the Maritime Administration seized the property. Three years later, the agency auctioned it off, with Quirk the highest bidder at $9 million.

Local officials at first protested the award to Quirk. Some distrust was due to Quirk's having sued the city earlier in matters involving a property of his in West Quincy. Also, he had never developed anything other than his dealerships, and officials questioned whether he could conduct such a big project successfully.

Since then, Quirk appears to have won over officials and residents. He has conducted an open planning process and has held a series of meetings at which the public was invited to voice opinions.

"They have shown a lot of enthusiasm for listening to the neighbors," said David Oliva, president of the East Braintree Civic Association.

Quincy City Councilor Daniel G. Raymondi, who represents neighborhoods around the shipyard, said residents realize that shipbuilding is not going to return and have generally supported Quirk's vision. "I think people recognize it needs to be a mixed use," Raymondi said.

Quirk said it could be several years before major construction starts.

Because two-thirds of the shipyard is in Quincy and the rest is in Braintree, the property will need to be rezoned in both locales. A lengthy state environmental review also will be required, he said.

Meanwhile, he's been trying to find a buyer for Goliath, the 25-story, 1,200-ton crane that is a landmark on the South Shore horizon. The massive structure, which General Dynamics built over 30 years ago, is rusting and could become a hazard, according to Quirk.

The MWRA tried unsuccessfully to sell Goliath over a decade ago, but the market for such a massive structure appears to be limited. With US shipbuilding on the decline, there are few, if any, domestic yards that could use it. Moving it overseas would be costly and difficult.

If he can't sell it, Quirk said, he will have Goliath dismantled and scrapped.

Date: 2006-05-21

Fore River Shipyard Redevelopment Project

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USS Salem CA-139

The World's Only Preserved Heavy Cruiser

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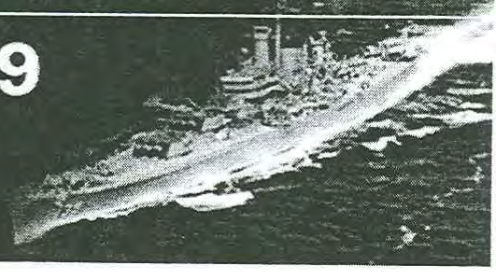

Welcome to the United States Naval Shipbuilding Museum Online. Located in historic Quincy, Massachusetts. The USNSM is home to the USS Salem, the world's only preserved Heavy Cruiser. We are located in the former Quincy Fore River Shipyard, once one of the Nation's largest Shipbuilding Enterprises.

- Spend the night aboard the USS Salem with the Overnight Adventure Program!
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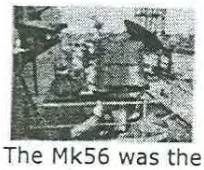
The USS Salem starred in the 1956 English film, "Pursuit of the Graf Spee".

HU-2 Helicopter landing aboard the USS Salem



The Mk56 was the director for the 3in twin automatic gun.

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Appendix 4

Granville Island, Vancouver

Media Relations

What We Can Provide

Here at Granville Island, our team is happy to help with your travel, tourism, entertainment, and culinary feature stories. We can:

- Offer interesting solid leads to prepare stories first-hand.
- Provide contacts for interviews.
- Loan professional slides, digital images, and videos to supplement your story.
- Provide a specialized guide to show you Granville Island's sights and sounds.

Hours of Operation

Granville Island Public Market

Open 7 days a week

9am to 7pm daily

Net Loft, Kids Market, and most retail stores

Open 7 days a week

10am to 7pm daily

Contact

Manager of Public Affairs & Programming

CMHC Granville Island

1661 Duranleau Street

2nd floor

Vancouver BC, V6H 3S3

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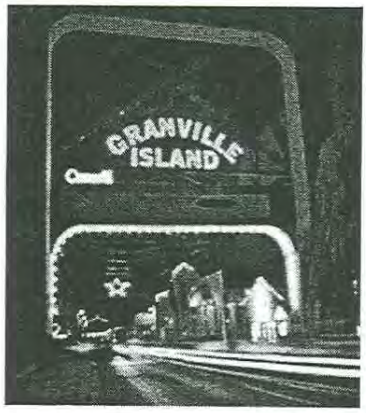
media@granvilleisland.com

www.granvilleisland.com

This primer sheet offers a quick snapshot of the Granville Island experience.



Granville Island

Nestled in the centre of Canada's most beautiful city is a breathtaking island oasis that will steal your heart and seduce your senses. This gathering spot for both locals and tourists draws 12 million visitors each year (71% of Granville Island's tourists are from outside of British Columbia).

Sample the fresh, tantalizing offerings of the market and restaurants. Browse the unique items crafted by some of the best local talent. Watch these artists and craftspeople as they create. Take in a play or two at our theatres. Granville Island is an urban haven filled with fine restaurants, theatres, galleries and studios, and all things that are fresh: seafood, fruit, vegetables, plants, flowers, candy, fudge, breads and baked treats.

Formerly an industrial area, Granville Island has a story to tell. Potters, weavers, textile artists, printers, a cobbler and jewelry makers now work in studios that were once foundries and machine shops. Performers have taken to the streets and filled empty warehouses with their shows.

This urban redevelopment is unique internationally and draws attention and study from planners globally. Granville Island is more than a market, more than an entertainment district, more than an artists' neighbourhood, more than a marina, more than a visitor attraction. In 2004, the Granville Island Public Market celebrated its 25th Anniversary.

Granville Island was presented with a PPS award of Merit in 2002 when Great Markets Great Cities recognized the Public Market for its contribution to the social, economic and environmental health and well being of Vancouver. In 2004 Granville Island was named the "Best Neighbourhood in North America" by Project for Public Spaces, a New York-based non-profit agency.

Island Highlights

The Island's community includes over 300 businesses, studios and facilities.

It employs more than 2,500 people, and is home to residents living in the Sea Village neighbourhood (floating homes on the southeast end of Granville Island with water for a front yard).

It is administered by the Canadian Mortgage and Housing Corporation (CMHC), a federal government body, and is fully self-supporting financially. Granville Island's projects are developed and managed by public, private, and non-profit sectors.

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Granville Island

service à la clientèle

Island Evolution

Back in the Old Days

A century and a half ago, False Creek was a rich tidal basin covering four times the area it does today. The area was richly populated with beaver, muskrat, ducks, trout and sturgeon. The Native fishing village of Snauq (pronounced Sn-owg) fished using traps off the great sand bar now known as Granville Island. For First Nations art on the Island today, visit:

The Raven and the Bear
1528 Duranleau Street
604.669.3990

Eagle Spirit Gallery
1814 Maritime Mews
604.801.5277

Wickaninish Gallery
The Net Loft, 1666 Johnston Street
604.681.1057

When the Europeans Came

By 1858, European interest turned to this region and the settlement rush was on. In four decades, huge changes occurred. A land grant to the Canadian Pacific Railway cut the Native village off from the rich stands of timber, and the surrounding area was logged and cleared for settlement. Sawmills sprang up along the Creek to provide construction materials to build Terminal City (as Vancouver was known then.) Granville Island was just a shipping obstacle to barges carrying lumber, bricks and lime.

Industrial Island

In the late 1880s, local businessmen recognized Granville Island's value as industrial land, especially because of its proximity to barge traffic. It soon became a clanging, smoking centre of sawmilling, iron work, slaughterhouses and other industrial activity. By the Roaring Twenties, the Island housed some of the city's largest manufacturing operations. The Second World War fed the frenzy even further. After the Wars, Granville Island faced some harsh years. A series of fires caused extensive damage to factory buildings, and fresh water grew scarce.

Meanwhile, Vancouver's economy was evolving, and putting manufacturing plants in the centre of the city no longer made sense. Proximity to highways servicing BC markets was more important than access to the water. Large manufacturers left for the suburbs, and the formerly healthy industrial zone became filthy and deserted.

The Transformation

By the early 1970s, plans to transform Granville Island were underway. The intention was to turn the area from a tired, derelict industrial region into an eclectic people place with a rich mix of theatres, restaurants, shops, educational facilities, studios and office space. The area would retain remnants of its rustic industrial roots, with tin and stucco siding, industrial doorways, cranes, and rail tracks.

The Public Market was to be the cornerstone and anchor for Granville Island, and the main visitor draw. Granville Island's designers and builders examined virtually every major market in North America for inspiration, but they were poor models. Most were farmers' markets, which worked best on a small scale in small towns surrounded by farmland. Others didn't offer many food stalls, but had mainly boutique shops. Despite the uphill battles faced by Granville Island, the developers and city officials who believed in it created a winning combination that's now one of Vancouver's most popular spots, both for locals and tourists.

In 1979, the Island opened its doors and hasn't looked back. In its 25-plus years, a lot has changed: the cityscape across the Creek; the growing number and mix of residents, and the popularity for visitors. Some things, however, never change on the Island: the maze of alleyways, the look of marvel on the faces of its visitors, and the stream of mystified urban planners from the globe over trying to figure out its magic so they can take it home with them.