

Coming into the light: the rediscovery and reuse of naval heritage buildings

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Abstract

The magnificent heritage of navies built by the finest architects, expressive of national pride, has not in some countries been perceived as part of the canon of historic buildings, while in others naval buildings are cherished as key settings of national history.

This paper will examine why these differences occur, and how they influence the revaluing of naval heritage, once its maritime existence is over. What makes historic defence sites a special case in brown land redevelopment is their diversity of architecture and engineering. 'The beauty of utility' which historic military and naval buildings exemplify is at once expressive of state power and taste, and a particular challenge to appropriate reuse in physical and economic terms.

Building conservation law and practice may inhibit or enable the development of new activities within them. In the best examples of beneficial reuse, naval buildings' inherent robustness is respected and even celebrated, not obliterating their long history, but adding new layers of meaning and association.

Illustrations of the paper's themes will include the recent conversion of the Royal Hospital at Greenwich for universities, new uses for naval buildings around Portsmouth Harbour, the Arsenale buildings in Venice, Swedish naval buildings in Karlskrona and at the Royal Woolwich Arsenal on the River Thames in London.

1 The historic naval architectural legacy

Specialised structures have accumulated on naval dockyard sites over long periods of time. They form a unique legacy of fine architecture and engineering, as tangible and vivid survivors of long naval supremacies - in the galley, sailing,



steam, oil-fired, gas turbine, and nuclear ages. Together with their accumulated associations, they represent an opportunity for bringing new life to empty sites.

Expressive of national and royal pride, dockyard buildings in many countries consumed considerable national resources and were often designed by the finest national architects. France, Holland, Britain and Sweden have magnificent architectural legacies from their naval and colonial past. The British defence estate contains some of the nation's most splendid structures, designed by Hawksmoor, Vanbrugh and Wren, while Venezia's Arsenale has buildings attributed to Sansovino, Sanmichele and Da Ponte; Sweden has Ehrensward and Thunberg, Menno Von Coehoorn in the Netherlands, and in France Blondel and Vauban.

Their achievements are architectural tours de force, such as the magnificent Corderie Del Tana in the Venetian Arsenale, the Gothic shiphalls of the Drassanes Reales in Barcelona, Rochefort's splendid Corderie royale, the baroque Royal Naval Hospital, later College, Greenwich, the sombre neo-classical Royal William Victualling Yard in Plymouth, the pioneering Vasakjulet covered slip, great storehouse and ropewalk in Karlskrona, and the eighteenth century naval hospital in Copenhagen which now houses the Danish Naval Museum. These are matched by a whole alphabet of elegantly functional specialist military and naval buildings: abattoirs, airship sheds, arsenals and armouries, bakeries, basins, balloon sheds, barracks, batteries, boathouses and breweries, casemates, caponniers, chapels and cooperages, depots, drillhalls, drydocks, factories, forts, fortresses and foundries, gunpowder works and gunwharfs, magazines, mouldlofts and monuments, pillboxes and pontoons, radar stations, redoubts, rigging houses and roperies, sawmills, scrieve boards, slaughterhouses, slips, smitheries and storehouses, turrets and towers, victualling yards, wardrooms, watchtowers, windtunnels, workshops and zoos [1]. As the former Principal Conservation Architect for the British MOD said: 'the incredible range of building types: surely the most diverse of any single estate' compounds the complexity of finding new uses for them [2].

There is a thread of innovation to the architectural story of dockyard buildings, including the adoption of cast iron, new building types expressing new materials. Work methods developed in the arsenals predated industrial production and functional architecture at the same time. New building types were developed specifically for dockyards, while those in common with non-military industry were often larger than their civilian counterparts. According to Coad [3] roperies or ropewalks are often the key factor in planning dockyards because of their immense length. The introduction of screw propulsion, ironclads, steam power, and later developments were all reflected in adaptation of dockyards and new facilities. Nineteenth and twentieth century structures such as covered shipbuilding sheds or submarine pens increased in size in proportion to vessels' dimensions and technologies of materials handling.

Many structures, including the walls, gateways and docks, were designed by military engineers, while others were by senior dockyard officers such as master shipwrights and carpenters. The enclosing walls with their associated gateways, porter's lodges and police cells are both physical and metaphysical barriers,



designed to exclude the civilian world and also to protect valuable government property. Gateways are key points, often marked by splendid architectural statements - in the same way as contemporary city gates, which they resemble, since dockyards are in effect cities within or adjacent to cities, with houses, chapels, schools, workshops and offices as well as docks within the walls.

2 Differing attitudes to naval heritage

In the UK naval heritage – with exceptions such as the Royal Naval College in Greenwich - was not perceived as part of the canon of historic buildings. Often invisible behind high walls, they were left out of histories of architecture and remain exempt from civilian obligations via the Crown Exemption. Once redundant, older naval buildings may at best only kept wind- and weather-tight. Portsmouth's Block Mills, where Marc Brunel set up the first steam powered mass production of pulley blocks in the world, listed at Grade I, is at risk of serious decay, according to English Heritage [4]. This utilitarian attitude contrasts with other countries, where naval buildings are cherished as key settings of national history, expressive of national pride, and maintained to high standards even if no longer used for the original purpose. Pride in the Swedish navy's history is reflected in the excellent state of repair of the early buildings on Karlskrona naval base, and the importance of the navy to Brazil's history is reflected in the care of its naval buildings. With long disuse, there are awesome conservation problems, perhaps summed up by the *Arsenale* in Venice, dating in part to the 15th century, which occupies almost one sixth of the area of the city; most of it, despite its quality, not in use for over 80 years.

3 Disposal and reuse

Their state of repair, and the intangible meanings they exemplify, will affect their reuse once they become available for civilian purposes. In the UK and Germany, military and naval sites are disposed of to the highest bidder – within a short period. However, in one celebrated case, public pressure stopped such commercial exploitation. The magnificent seventeenth century Naval Hospital at Greenwich designed by Sir Christopher Wren, Nicolas Hawksmoor and others is one of the few English examples of Baroque town planning. In 1998 the Royal Naval College which had taken over from the hospital left the site, and the Conservative government put the complex up for sale, marketed by top estate agent, Knight Frank and Rutley. In response to the public outcry about 'selling the family silver', political and royal pressure led eventually to the setting up of the Greenwich Foundation for the Royal Naval College, a registered charity established to look after the site on behalf of the nation. The principal objects of the foundation are:

- “To ensure that the buildings and surroundings contained within the site are properly cared for, and maintained to a high standard as befits their character and historic importance;



- to ensure that the use of the buildings is in keeping with and respects the nature of the site, in particular that the maritime history of the site and connections with the Royal Navy are reflected in its future;
- to make arrangements for the public to be able to visit and enjoy the site on a regular basis, and to promote its educational value” [5].

The complex already had high levels of legal protection. In 1997 UNESCO designated Maritime Greenwich a World Heritage site. The Royal Hospital buildings are Scheduled Ancient Monuments, Listed Grade I and part of the Maritime Greenwich World Heritage site. The navy had converted the old naval hospital to a college, which was important to people’s perception of national heritage – so a third use was being sought. After removal of the small nuclear reactor which generated 40 watts for nuclear submarine training, and with a large public dowry from the Ministry of Defence, two institutions of higher education took over, restored and adapted the buildings over two or three years. From late 2001, King Charles Court with the Admiral President’s House on the river frontage is now home to Trinity College of Music. Queen Anne Court, King William Court, Queen Mary Court were taken over by the University of Greenwich, which uses them for teaching spaces, with minimal adaptation but upgrading of services from use as the Royal Naval College. References to the first use, as a naval hospital are still visible – for example in the designations for men’s dormitories. Now that the buildings are subject to civilian regulations, new fire partitions had to be inserted; problems of wheelchair access required by the new Disabled Access Act were harder to solve. Crawler machines go up the steps and three people trained to use them - but they are difficult to use. Less tangible change has apparently been beneficial. According to the Chaplain, the chapel plays host to music performance classes, recitals, concerts and graduation ceremonies, and is not just a historical monument or a architectural treasure, but “a living, working, evolving place where the interaction between the divine and the human spirit continues to be played out through worship and prayer, music and learning, hospitality and community”. Applications to the university have increased considerably, attracted by the prestige of the site. The Dreadnought Infirmary of 1764-68 was refurbished and the interior infilled as the university library and computing centre. To fulfil the pledge to open the site fully to the public, ‘Greenwich Gateway’, the visitor centre for the World Heritage site is situated in the Pepys Building next to the *Cutty Sark* and Greenwich Pier. It has a café, shop and temporary exhibitions area.

As large institutions in need of considerable volumes of space, other universities have also seen the potential of former naval buildings: Turku Music Conservatoire elegantly converted the ropeworks and machine halls of the early twentieth century dockyard on the river [6]. Boathouse 6 discussed in the next section is leased by Portsmouth Naval Base Property Trust to the University of Portsmouth Institute of Maritime and Heritage Studies. The many naval and ordnance sites around Portsmouth Harbour provide a supremely relevant living case study. Above Chatham dockyard, HMS Pembroke, the naval barracks, is enterprisingly being converted into a university campus for the University of Greenwich, complemented by a modern theological college below. In Venice,



the Sqadratore (Mould Loft) building in the Arsenale has been restored by the Italian Ministry of Culture into the Italian Institute of Strategic Studies. In Tallinn, the Estonian National Heritage Board is planning to convert The Battery, a fortress built by the Russians in 1827 as part of the coastal defences of St. Petersburg, as premises for the Estonian Academy of Art. The fort has harsh associations: a prison since 1920, including dissidents against the Soviet regime, then a prison hospital. Such an extreme revaluation – from oppression to art – deserves considerable congratulation.

4 Degrees of intervention

The degree to which new uses require major intervention into original fabric is often controversial; planning and conservation regulations may inhibit or enable reuse. The strict Italian conservation controls required that the Thetis Institute in Venice had to construct a free-standing laboratory and offices inside a foundry of 1911 in the Venetian Arsenale, although there appeared to be no controls preventing excavation of the floor for a test tank for seabottom crawling vehicles. English Heritage might have been just as strict over the conversion of the massive iron-framed Boathouse 6 of 1856 to a naval entertainment centre, were it not for the fire damage from the Luftwaffe raid of 1941 on Portsmouth dockyard, which burnt out part of the top storey. A new auditorium with its own modern roof profile was inserted into the space, independently supported on its own slanting purple legs. Modern requirements for public access stairs and means of escape provoked intense arguments over whether these should be pierced through the floor slab internally or made external in a modern idiom. The end results, designed by McCormac, Jamieson, Pritchard are accepted by all as a triumphant marriage between sensitive modern design and a magnificent nineteenth century boathouse of massive design, winning several prizes for excellence in design. Dramatic changes of use – from storehouse to residences or hotel – require enormous amounts of physical insertion, which may, if carried too far, ruin all sense of the original spaces. They can surely never comply with requirements for reversibility. The wonderful open areas of the Vulcan storehouse of 1810 on Gunwharf, Portsmouth are sadly being lost in the conversion to flats; the only space to retain anything of the original space is the art gallery, being inserted in the south wing at the suggestion of the local civic society.

5 Dockyards exchange experience

European countries have access to EU funds for economic reconstruction for former defence dependent regions, such as KONVER, Renaval and Interreg IIIc. Naval port cities also draw on EU funds to collaborate on regeneration, conservation and economic reconstruction, providing mutual support and shared information. An example was RENDOC, a network organisation of European naval dockyard towns (Redevelopment and Regeneration of former Naval Dockyards): a partnership between Karlskrona in southern Sweden,



Medway/Chatham, Rochefort and Suomenlinna/Sveaborg Helsinki. The principal aim of the network was both to share comparable past experiences and to take an active part in the future development of these naval cities. RENDOC held two conferences at Chatham and Karlskrona which attracted delegates from other dockyard cities in the United States and Europe. In 2002 NAVARCH (Naval Architecture) produced an excellently researched guidebook and website until autumn 2004 [7] to celebrate their common heritage of naval buildings: basins, docks, slips, ropeworks, storehouses, churches and residences. This was a joint project between the four partners, managed by the Department of Community Planning of the municipality of Karlskrona. Their principal aim was to gain a better understanding of this important piece of our common European heritage and to provide the general public with access to the historic buildings and installations in those cities, to present their shared naval heritage.

SHARP (Sustainable Historic Arsenals Regeneration Partnership) funded by INTERREG IIIC from 2004-6 links the Royal Woolwich Arsenal represented by the Ministry of Defence, English Partnerships, English Heritage and London Development Agency, with the University of Cadiz developing a regeneration framework for the Real Carenero; the Malta Heritage Trust which is planning the rehabilitation and opening to the public of Cottonera, a historic but economically depressed area; and the Estonian National Heritage Board which as mentioned is developing partnerships to locate the Estonian Academy of Arts in The Battery. Naval ports are also collaborating with civilian ones: the NEW EPOC group focuses on the impact of globalisation on port cities and the fact that new technology and global competition is forcing port cities to find new ways of creating economic prosperity while seeking to retain their traditional identity as a port city. Southampton's partners are Patras, Bremen, Bilbao, Cherbourg, Trieste, Taranto and Kaliningrad – four of which are or were naval ports. They are all very different in scope and scale, but all seeking to address the same challenge: how to operate successfully as communities in a global environment.

6 Developers' contribution

The transformative actions of developers on former naval and military sites need to be acknowledged. However, major publicly funded investment in infrastructure may first be essential in order to reconnect former war sites to their civilian surroundings; and developers may run into conflict with local planning authorities when they try to increase the profitability of their schemes by increasing density during the course of redevelopment. Examples examined here are the Royal Arsenal at Woolwich, Gunwharf and Royal Clarence Victualling Yard on Portsmouth Harbour in Hampshire in the UK – all by Berkeley Homes; and two conversions of naval buildings into apartments: Urban Splash's transformation of the Brewhouse at the Royal William Victualling Yard in Plymouth, South Devon, and Parris Landing at Boston Navy Yard in the United States.



The Royal Arsenal on the River Thames, one of the largest industrial complexes in the world—in WWI employing 80,000 people in weapons and armaments manufacture—was closed in 1967 and left dormant and decaying for 30 years. From the 1970s onwards, Woolwich was labelled as ‘a disadvantaged area’ with high unemployment; the Arsenal’s regeneration was regarded as fundamental to improving the area’s prosperity. In the 1990s it was transferred by the Ministry of Defence to English Partnerships, a government agency, and then to the London Development Agency. Major public investment by the Agency was needed to prepare the site for redevelopment, particularly new access to the town centre and new breaks into what had been a highly secure enclave: a new pier, pedestrian and road access and a public riverside promenade. Extension of the Docklands Light Railway to a new station at Woolwich Arsenal, buses to the underground at North Greenwich, and a possible ferry link along the River Thames to the Canary Wharf business district are planned. A Masterplan was produced proposing a mixed used development, with Berkeley Homes as the preferred residential developers. A large top-end house builder specialising in former industrial sites in the south of England, particularly those heavily loaded with historic buildings, this developer had considerable relevant experience. The major historic core was leased to them. Planning consent was granted in 2001 for a mix of private, social rented and shared ownership apartments and houses in new blocks and converted listed buildings in a poor state of repair, with severe contamination and important archaeology in the ground, which was excavated by English Heritage. The developers presumably balance the financial returns from apartments with a river view, commanding much higher prices attracting high socio-economic groups with spending power to invest in the area, against those with only internal or landward views, in achieving overall profitability - which may be why the number of homes was increased to 1,248; four hundred families currently live at the Royal Arsenal, including 148 in affordable accommodation. A second phase for 3,000 homes alongside 300,000 square feet of commercial and leisure space, a ten screen cinema, 120-room hotel, bars, restaurants, nursery, health facilities, heritage centre and small specialist retailing is planned. When the development is complete, more than 12,000 people will live there, 50 acres of derelict land will have been brought back into beneficial use, and 17 listed buildings saved from dereliction [8].

In Gunwharf on Portsmouth Harbour, a former naval ordnance depot, Berkeley Homes have invested £100m in a two sided redevelopment: leisure/shopping and high value housing based on the formula in the Victoria and Alfred Waterfront in Cape Town, South Africa. The original development brief was open-ended, and Berkeley Homes have several times successfully applied to the local planning authority for exponential increases in housing density. 450 new apartments, some of them in a 29-storey tower, were under construction in 2004. For the first time, a small proportion of social housing is included in the block closest to the railway line to Portsmouth Harbour station [9].

In contrast, across Portsmouth Harbour, at Royal Clarence Victualling Yard, built in the 1830s to supply fresh water, salt beef, ship’s biscuits and rum to the



Royal Navy, Berkeleys were locked in dispute with Gosport Borough Council in 2004 over their application to build 713 more homes than the number originally granted permission for in 2001—in line with government's guidance to build more homes on brownfield sites. In contrast to Portsmouth City Council, which left the historic research to the developer in their environmental impact statement, Gosport Borough Council and Hampshire County Council were proactive in commissioning historic research to establish the history, archaeology and the importance of the surviving historic structures on the site, which with the Community Planning exercise paid for by Berkeleys, set parameters about what might be done. The monumental brick granary and bakery buildings were converted into luxury apartments, and a cinema, 130-berth marina and pub/restaurant were developed, along with 80 affordable homes—in a total of 304. Berkeleys said that they need to build hundreds more homes, 140 of them in a 16-storey tower (the design of which was publicly criticised), to attract businesses such as the cinema to the £35m development. Gosport Borough refused permission because of fears of worsening traffic conditions on the main road, the A32. The government had cancelled the light rapid transit route linking to the railway line at Fareham which would have been a key piece of transport infrastructure earlier in 2004. Berkeleys decided to appeal to the Minister against the refusal of permission [10].

The Royal William Victualling Yard in Stonehouse Plymouth, South Devon adjacent to Plymouth dockyard waited almost as long as the Royal Arsenal for positive reuse of its magnificent neo-classical limestone and granite buildings. From 1824 the architect and engineer Sir John Rennie designed storehouses, the mills and bakery which produced 122,500 kilos of flour per week, the brewhouse which did not brew a drop, because the navy's beer ration was discontinued in 1831, the two cooperages which employed 80 coopers (making barrels for storage of food and water), and the abattoir, which processed 100 animals a day. The Royal Navy withdrew from the Yard in 1992, and in 1993 the Plymouth Development Corporation (PDC) were given three heritage laden sites including Royal William and a 'dowry' of £55m to prepare them for redevelopment over five years. Despite a vociferous campaign documented by BBC Southwest, PDC refused to adopt a collaborative approach to meet concerns of the mainly middle-class residents of Stonehouse about traffic management and to negotiate over English Heritage's objections to roofing slates, provoking two public inquiries, traditional arenas for entrenched conflicts. Inside the Yard infrastructure was improved, but the site was not brought back into use [11]. It was then gifted to the South West Development Agency. Urban Splash, developer specialising in the transformation of difficult industrial heritage buildings which began operations in Manchester and Liverpool in 1993 was selected in 2001 to convert the Brewhouse and Clarence storehouse into apartments, a wintergarden in the central boiler house, with spaces for commercial enterprises such as a restaurant and café/bar at street level. The development makes a virtue of the strong industrial character of the building, which is complemented by elegant minimalist detailing by Ferguson Mann architects [12].



Luxury housing in naval industrial spaces perhaps has an international appeal. The developer Carlyle Realty Partners of the very large Parris Landing building in Charlestown Navy Yard in Boston, USA employed Philippe Starck to redefine the 'dynamic' communal areas into atriums between the two rows of apartments (totalling 367) which honoured the site's architecture and heritage [13]. This contract was part of a long process of transformation begun many years earlier. When the Charlestown Navy Yard closed in 1974, the 130-acre site close to downtown Boston was given to the Boston Redevelopment Authority, one of the most experienced local planning and development agencies in the US. When the navy had planned to move the shipyard to South Boston, the BRA's Planning Department commissioned an in-house study to consider possible reuse, which concluded that historic, residential and industrial uses would be appropriate. When closure was announced in 1993 they already had an outline plan to transform the site and a strategy to gain control of it. In the mid 1960s, shortly before the 1968 report which signalled the eventual closure, the entire Navy Yard was placed on the National Register of Historic Places – a factor that was both a problem and an opportunity. It was likely that the BRA could purchase the historic area for a nominal sum, but federal review of *all* development would be required, including the area where new buildings were proposed.

When closure arrived, there was a desire to re-employ the 5000 workers who had lost their jobs. General Dynamics showed an interest in the site as a shipyard, but backed away when the condition of the facilities became apparent. A new container port was considered, but this was eventually built on a clear site elsewhere. Boston City's Economic Development and Industrial Corporation (EDIC) co-operated with the BRA in an attempt to establish an industrial park, but this idea came to nothing by 1975. By then there had been two years of failed marketing and planning studies which convinced the BRA that modern manufacturing plants wanted large sites for new single-storey buildings, not rehabilitated multi-storey historic warehouses. BRA then proposed a mixed use project including offices, retailing, housing, a hotel, an art college and museums. This approach was discussed with the community and found little opposition. This plan was to be implemented in five phases, over a ten year span.

The mixed use approach reflected the fact that important historic structures were concentrated in certain parts of the yard, which was divided into four zones, where either conservation or clearance and rebuilding could dominate. A National Historical Park with the centerpiece, the *USS Constitution*, the oldest active ship in the US Navy, built in North Boston in 1797 which was already a tourist attraction in Dry Dock No.1. Reuse of the site has continued [14].

7 The Navy in the way of regeneration

The success of these naval waterfront renewals points up one case where the navy's continued presence is seen to inhibit urban renaissance. HMS Calliope, a Royal Navy Reserve base since 1968, with a 3.5m galvanised steel fence enclosing a long, ugly corrugated roofed building with a red ensign at one end and a small warship at the other beside a helicopter pad on the River Tyne at



Gateshead opposite Newcastle is considered totally out of keeping with the area's glamorous transformation into a cultural corridor. This includes the Baltic Centre for Contemporary Art in a former grain silo, the curving Millennium Bridge which opens and shuts like a blinking eye for passing ships, and the £20m Sage undulating glass music centre designed by Norman Foster which is just above it. It also prevents completion of the mile-long circular public walk via the Tyne's bridges. "People from all over the world are coming here to look at the latest work by one of the UK's greatest architects, set in the context of cultural regeneration, and to see this rather dull, drab and prosaic shed in the middle of the landscape...well it's not going to enhance it, is it?" [15]. Security fears at Portsmouth naval base also deferred decision by the Portsmouth Naval Base Property Trust by developers Crest Nicholson of their 'heritage area' carpark with a very high density development of 540 flats, two layers of parking and a raised communal garden. The design by David Richmond was the result of an architectural competition, and was welcomed by local people and the local civic society, but the Ministry of Defence had concerns that the 18-storey block would give gunmen a clear shot at navy living quarters inside the dockyard in Short Row [16]. A long public campaign to save the eighteenth century Haslar naval hospital in Gosport as a public health facility was lost in late 2004 after the Ministry of Defence decided to share civilian facilities in a redeveloped Queen Alexandra Hospital in Portsmouth and the Fareham and Gosport Primary Care Trust decided to improve the War Memorial Hospital instead [17]. No doubt Berkeley Homes will be among the bidders for the prime and beautiful site facing the Solent [18].

8 Mutual benefit model

Woolwich Arsenal was also the inspiration for development of a Mutual Benefit Model which could be applicable to redevelopment of other historic naval sites. It has resemblances to the process model I published in the Royal Town Planning Institute magazine *South Talk* [19], which stresses the importance of the capacity of the various parties such as local government, specialist interests and local government to influence decision-making. The English Heritage model was developed from the collaboration and investment between the public sector: Ministry of Defence, English Partnerships, English Heritage and London Development Agency; the private sector (Berkeley Homes and iOG), and specialist heritage organisations such as Oxford Archaeology, which investigated the site. The early development of a public sector funded master plan by Llewelyn Davis Ltd. enabled cooperation between the conservation and heritage disciplines of Oxford Archaeology and English Heritage, the site development imperatives and investment of private housing and commercial developers, and the public interest concerns of Greenwich Borough Council, London Development Agency, and other representative groups concerned with access to the Thames and use for the local people.

The key elements of the model are:

1. A nominal value transfer of government owned brownfield land with heritage components to an appropriate public agency.



2. The early design and adoption of a vision and master plan for multi-use development with the focus on heritage, sustainability, profitability and the public good.
3. The involvement of private sector partners who see the point of collaboration with the public sector and the integrated approach to heritage, housing, business and amenity development, in which there is a trade-off between maximum profit and the creation of a balanced environment in which heritage is part of the 'branding' of the whole project.
4. The initial recording, archiving, excavation and remediation of the site by specialist historical and archaeological organisations which deliver the double benefit of enabling proper conservation to take place and also to arm the housing and business developers with expert knowledge in terms of site contamination and constraints, so that they can plan, build and renovate accordingly.
5. The careful phasing of development and building both in parallel with and consequent upon the phases in No.4.
6. The contextualisation and marketing of the development within the tourist and educational market place [20].

9 Conclusion

There is now a considerable body of experience of naval waterfront renewal, particularly of the most difficult but rewarding end – those with historic structures.

The EU projects and other exchanges of experience show how much is to be gained – in physical, economic, social and aesthetic terms - by examining what is being achieved.

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