

## PART THREE

### PORTSMOUTH DOCKYARD IN THE TWENTIETH CENTURY<sup>1</sup>

#### 3.1 INTRODUCTION

The twentieth century topography of Portsmouth Dockyard can be related first to the geology and geography of Portsea Island and secondly to the technological development of warships and their need for appropriately sized and furnished docks and basins.

In 2013, Portsmouth Naval Base covered 300 acres of land, with 62 acres of basin, 17 dry docks and locks, 900 buildings and 3 miles of waterfront (Bannister, 10 June 2013a). The Portsmouth Naval Base Property Trust (Heritage Area) footprint is 11.25 acres (4.56 hectares) which equates to 4.23% of the land area of the Naval Base or 3.5% of the total Naval Base footprint including the Basins (Duncan, 2013). From 8 or 9 acres in 1520–40 (Oppenheim, 1988, pp. 88-9), the dockyard was increased to 10 acres in 1658, to 95 acres in 1790, and gained 20 acres in 1843 for the steam basin and 180 acres by 1865 for the 1867 extension (Colson, 1881, p. 118). Surveyor Sir Baldwin Wake Walker warned the Admiralty in 1855 and again in 1858 that the harbour mouth needed dredging,

as those [ships] of the largest Class could not in the present state of its Channel go out of Harbour, even in the event of a Blockade, in a condition to meet the Enemy, inasmuch as the insufficiency of Water renders it impossible for them to go out of Harbour with all their Guns, Coals, Ammunition and Stores on board.

He noted further in 1858 that the harbour itself “is so blocked up by mud that there is barely sufficient space to moor the comparatively small Force at present there,” urging annual dredging to allow the larger current ships to moor there. (Quoted by Hamilton, 2005, pp. 46-7)

Paradoxically the 1867 extension derived from the increasing needs of the steam navy, and the completion of HMS *Warrior* and Palmerston’s circle of forts surrounding Portsmouth to protect the dockyard from a steam driven naval attack. By 1860 Portsmouth needed longer docks and deeper basins for the ironclads, to maintain its strategic position in the Channel. As the eighteenth century fortifications surrounding Portsea were “no longer required for defensive works”, the land was transferred from the War Department to the Admiralty, the remainder consisting of Pesthouse Field. (Hamilton, 2005, pp. xxix-xxx, xxxvi, 57-61; House of Commons, 1860, *Report of the Royal Commission appointed to consider the defences of the United Kingdom*; Chapman, 1978, pp. 3, 4, 6, 9) The remaining five acres comprised further small parcels acquired in the nineteenth and twentieth centuries. Victoria Road followed the seventeenth century shoreline. The rising gradient from Victoria Road, south along the Parade is notable in front of the Brass and Iron Foundry (1/140) at SU630624 007854. Historic England maps MD95/03032 (1850–1955), MD95/03033 (1898) and MD95/03034 (1900) show pre-twentieth century development and the situation at the beginning of the twentieth century.

Fig. 188. MD95/03032. (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing shows Portsea fortifications and Pesthouse Field, over which much of Area 3 was constructed, based on 1850 map showing changes in yellow and later buildings in red dotted lines. Reproduced by permission of Historic England.

Fig. 189. MD95/03033. (1898). Second Edition Ordnance Survey, Hampshire Sheet LXXXIII.7. Reproduced by permission of Historic England.

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<sup>1</sup> A bold Fig. no. indicates that the image is captioned more than once in Part 1 and/or Part 3, leading to some numbers appearing to be out of sequence.

Fig. 190. MD95/03034 (1900). Her Majesty's Dockyard at Portsmouth showing development and enlargement from 1540 to 1900. Reproduced by permission of Historic England.

Fig. 191. MD95/03039 (1936). Plan Showing Proposed Revision of Boundary of HM Dockyard Portsmouth. Reproduced by permission of Historic England.

Three topographical areas characterise an accelerated evolution of scale and function within Portsmouth's operational naval base, determining to a great extent the architecture of the buildings. Buildings are listed by area in the MoD (1974) *HM Naval Base Building Location Numerical Index*, the *HM Naval Base Property Register* (HMNBPR, 1992) and BAES (2013) *Dockyard (Portsmouth) Revised Building List*. A fourth area comprises HMS *Nelson* Barracks but excludes HMS *Nelson* Wardroom.

**Area 1: Sail** (fifteenth to nineteenth centuries)

**Area 2: Steam** (nineteenth to twentieth centuries)

**Area 3: Coal to oil to electricity** (nineteenth to twentieth centuries). Coal facilities were decommissioned in 1914 and oil in the 1990s; gas turbines; selected Avcat (aviation gas) fired; electricity: engines replaced externally following their use in commercial liners.

**Area 4: HMS *Nelson* accommodation and services.** This is excluded from the three operational areas, but is contained within the Naval Base. It lies between the 1865 boundary wall and the current perimeter wall. Design of these buildings was not driven by marine technology, but social and domestic considerations. Some date from 1847, but most from the 1899 to the late twentieth century.

Fig. 192. H M Naval Dockyard, Portsmouth: Miscellaneous. Sketch plan of naval establishments, showing Portsea, Gosport, Haslar and Bedenham (section). Drawing no. B4. Scale not shown. Director of Works, Admiralty. TNA (1910). WORK 41/310. Reproduced with the permission of The National Archives.

Fig. 193. H M Naval Dockyard, Portsmouth: Miscellaneous. Dredging progress chart, 1935–1938: section showing depths and hatching of work executed during 1935–1936. TNA (1936). WORK 41/311. Reproduced with the permission of The National Archives.

Fig. 194. H M Naval Dockyard, Portsmouth: Miscellaneous. Dredging progress chart, 1935–1938: section showing the hatching key. TNA (1936). WORK 41/311. Reproduced with the permission of The National Archives.

Fig. 195. MoD (1974) *HM Naval Base Portsmouth Building Location/Numerical Index* map showing the three operational areas. Reproduced with the permission of the MoD.

Fig. 196. HM Naval Base Portsmouth, Site Plan. Ministry of Defence: Defence Infrastructure Organisation (2012). Reproduced with the permission of the MoD.

The three operational periods/areas are detailed in the MoD (1974) *HM Naval Base Building Location* map and BAES (BAE Systems) 2013 map. *Dockyard (Portsmouth) Revised Building List*. Commander Lambert's (1993) unpublished *Portsmouth Dockyard and its Environs. A Chronological History*, based on the *HM Naval Base Property Register* (1992), has also been very informative on details and changes which were known within the dockyard, but which might not otherwise have been recorded. Data from the three successive lists can build up a sequence of recent events.

This survey of Portsmouth Dockyard buildings with twentieth century significance follows the numerical sequence of the MoD (1974) and BAES (2013) lists, constructed during three historical sequences: Georgian (Area 1), early and later Victorian (Area 2) and twentieth century (Area 3), considering changes that have been effected in the twentieth century. The substantive listing of each structure will be accompanied by its date of origin, if known, its dockyard building number, its

scheduled/listed status and number and Conservation Area Number (CA) where applicable, whether it is occupied by the Portsmouth Naval Base Property Trust (PNBPT), MoD or BAE Systems (BAES) (about 10% of the buildings are owned by BAES) and its grid reference. Thus Boathouse No. 6 notation is (1845, 1/23, Grade II\* 1244594, CA 22, PNBPT, SU 630466 004237). Conservation Area 22 covers the southeastern sector enclosed by the original dockyard wall to the north and Victoria Road to the west; Conservation Area 18 includes the Naval Barracks listed buildings. Listing and scheduling descriptions can be consulted in Appendix 4. Descriptions derive from field visits and archival or published sources. Part 3's Appendix summarises the most significant twentieth century changes

Within the twentieth century naval base new buildings were erected or existing structures modified because of successive technologies, fire damage and Second World War bombing. However, one of the most significant changes affecting Portsmouth Naval Base in the twentieth century has been the MoD release in 1985 of the south western quarter of Area 1 to become a heritage area. This has resulted in modifications of the built environment through refurbishment and conversion of storehouses, boathouses, workshops and docks into museums. PNBPT was established on 14 November 1985 by the Ministry of Defence (MoD) and Portsmouth City Council under a 99-year lease. It was granted £6 million by the MoD to maintain buildings in the 11.25 acre heritage area, following their redundancy for naval base purposes (Riley, 1987). This was a significant change of management style, with the PNBPT behaving like a commercial property development agency and an historic buildings trust, specialising in the preservation and re-use of historic buildings and structures within Portsmouth Dockyard heritage area, contributing to its ambience and funding. This separation led to the installation in 1987 of a security fence and two Security Offices (1/101 and 1/102) in Main Road. The heritage area comprises mostly Georgian buildings, but includes some Victorian and twentieth century buildings. However, a larger number of Georgian buildings still remain within the naval base.

Three museums pre-dated this development. First, in 1903 Mark Edwin Pescott-Frost (1859–1953), Secretary to the Portsmouth Admiral Superintendent, 'began collecting artefacts and historical items relating to Portsmouth Dockyard. By 1906 the collection had grown and Pescott-Frost was able to persuade the Admiral Superintendent to allocate space at the end of the Great Ropehouse to be used for a Dockyard museum. The museum was opened in 1911.' (PRDHT History; National Portrait Gallery) Postcards in the possession of George Malcolmson indicate that it was in one of the three Georgian storehouses. After Pescott-Frost's retirement in 1919 the collection was dispersed, some artefacts going into the new Victory Gallery. The second museum, the Victory Gallery (1/57), was new-built 1929–38 to house HMS *Victory* artefacts after the ship was docked in Dock No. 2 in 1922 (Aberg, 2005, p. 360). Thirdly, the McCarthy Museum was established in Storehouse No. 11 in 1971 (HE, NMR J356/01/72, 28 Apr 1971).

The evolving operational changes to the naval base are detailed in Part 1. Its current status followed the Ministry of Defence's 2005 Defence Industrial Strategy which encouraged BAE and VT Group to form a naval shipbuilding joint venture to maintain the UK's long-term naval shipbuilding capability. In 2008 much of the operational part of the dockyard was leased to this organisation which became BVT Surface Fleet, then BAES. In 2009 BAES signed a fifteen-year agreement with the MoD guaranteeing a minimum annual £230m of shipbuilding and support work, specifically for aircraft carriers, Type 45 destroyers and Portsmouth base services. (Jaffry *et al.*, 2012, p. 18) Further changes will occur after 2014 following the announcement of the end of BAES Shipbuilding in Portsmouth.

### 3.2 GEOLOGY

The present dockyard retains evidence of its earlier geology and land use. The original shoreline is denoted by the mid-nineteenth century Victoria Road. Sir Jonas Moore's map of 1667 (Hodson, 1978, p. 80), shows that the earliest building in Portsmouth Dockyard, the seventeenth century Ropehouse, occupying the same site as the present building (1/65), is aligned with the east/west field strips of West Dock Field. Its later eighteenth century Hemp Storehouses (1/63 and 1/64) continued this

alignment. The twentieth century Freight Centre, c.1970, 3/88A, Store 123 (ex-Electrical Shop No. 1, 3/88, 1945) and General Purpose Store (c.1995, 3/117, built over part of the railway marshalling yard), also lie parallel to West Dock and Pesthouse Field strips (Chapman, 1978, pp. 4-5). The Extension Convicts' Workshops, Timber Sheds, Brickmaking Machines and proposed Seamen's Barracks shown in 1881 were aligned north/south perpendicularly to the east/west field strips. Reclamation added land at North Corner 1764–84, the Steam Basin in the 1840s and further extensions from the 1860s to 1914.

In Area 1, Watering Island, south of Basin No. 1, consists of a Wittering formation of sand, silt and clay (Eocene). Immediately north of Basin No. 1 are river terrace deposits of sand and gravel (Quaternary), although at SU 627443 007879 is made/artificial ground. Underlying North Corner is London clay: clay, silt and sand (Eocene). Assistant Engineer during the Portsmouth Dockyard Extension (1865–81) and Civil Engineer 1881–83 at Portsmouth, Charles Colson reported in 1881 that the harbour was denuded of London Clay, the surface covered with a layer of mud from two to forty feet deep, beneath which were layers of 'dark greenish clayey sand, compact and retentive, containing masses of hard shell rock from 1 foot to 4 feet thick'. Meÿer clarified that the mud was mostly ten to twenty-five feet deep and confirmed that the 'beds are undisturbed and regular; the outcropping edges of the strata were covered by the comparatively recent mud of the harbour', suggesting that the 'action of strong currents' might have caused the disappearance of the strata. (Colson 1981, pp. 119, 124; Meÿer 1981, p. 177) Running north from College (Colson 1881, pp. 119, 124; Meÿer 1881, p. 177) Running north from College Road, beneath the Ropehouse, the Docks east of Basin No. 1 and the Block Mills, are on river terrace deposits of sand and gravel (Quaternary). In Area 2, underlying the Lock Complex, Basin No. 3 and Shipbuilding Complex, is London clay: clay, silt and sand (Eocene), which is also the composition of Area 3. Colson reported (1881, p. 127, 130-2) that the foundations of Dock No. 12 were partly in London clay and partly in sand, including shell rock. The dock foundations required beech piles of fourteen to sixteen feet, often hitting areas of rock; Dock No. 13 was also piled, even though the underlying soil was tested and found to be solid. Elsewhere Bernays *et al.* described the main subsoil as 'stiff, hard, solid clay' enabling Deep Dock (No. 9) and the locks to be built without piles, although their entrances were piled, but with deeper concrete foundations. (Bernays *et al.*, 1881, pp. 207-8) This split is shown clearly in a drawing of the WNW-ESE aligned boundary between London Clay and Reading Beds and the Bracklesham group beds and Sands, which runs through the area of the 1867–81 Extension. (Dix & Scaife, 2000, pp. 8-10) Coad shows the underlying alluvial subsoil in a photograph of the excavation for Dock No. 15 in 1904 (2013, p. 175). Slight recorded a layer of sand, in some places a few inches deep, at others nine feet deep, lying beneath clay 'under the Gas works, descending in a zig-zag manner under the Unicorn-gate,<sup>2</sup> across the moat to the outer wall, where it sinks.' (1828, p. 14) In Area 4, HMS *Nelson* is built over river terrace deposits of sand and gravel (Quaternary), as is HMS *Nelson* Wardroom. There is a clear demarcation between the geology of reclaimed 'made' and 'raised marine deposits' lying north of the seventeenth century shore line and the Georgian slips and enlarged Basin built over river terrace deposits south of the original shoreline, laid down in the Eocene (approximately 56-34 million years ago) and Quaternary (beginning approximately 2.6 million years ago) periods. (British Geological Survey, 2013)

Rudkin in *Hampshire Treasures II* suggests one reason for the meagre evidence of prehistoric human settlement on Portsea Island compared with Hayling Island, which shares a similar geological, sealevel and prehistoric profile. He hypothesised that when the greatest building took place, in the nineteenth century, comparatively little was known about archaeology: 'A vast amount of archaeological material must have been built over and, even worse, dug away with the brickearth used to make the bricks for building houses.' Little prehistoric or Roman evidence comes from Portsea Island: one Neolithic antler pick was found in Portsmouth Dockyard in the nineteenth century, some flint scrapers and waste flakes were found in disturbed contexts around the present shoreline; there were possibly some Iron Age coins; and 927 4<sup>th</sup> century AD silver Roman coins were found in Southsea in 1897 when houses were being built. Settlements in central (higher) parts of Portsea Island date from before the 11<sup>th</sup> century, while Old Portsmouth and the dockyard area were above sea level in the 12<sup>th</sup> century.

<sup>2</sup> This was before Unicorn Gate was moved, in 1865.

(Rudkin, 1986, pp. 5-8) Another explanation for the lack of archaeology around Portsea Island's shoreline, based on the engineers' evidence above, is that the harbour's scouring tides, each carrying an estimated 13,500,000 tons of water (Bernays *et al.*, 1881, p. 215), had washed away the relevant strata, including evidence deposited in the mud. It is worth pointing out, however, that Hayling Island was subject to similar tidal scour.

### 3.3 CHARACTERISATION

Portsmouth Dockyard Conservation Area 22: H.M. Naval Base and St George's Square was designated in 1981, but documentation is still to be prepared (City of Portsmouth, 2005). However, the City of Portsmouth has carried out an *Urban Characterisation Study* (2011). This states that H.M. Naval Base 'accommodates two thirds of the surface fleet and provides facilities for ship building and repair. It also represents one of the largest employers in the city.' It remains the 'prime economic and cultural focus' and 'has had a significant impact on the growth and present character of the city'. Despite severe Second World War bombing, much of the 'character and architecture of the Naval Base' survived. It is defined as 'predominantly industrial in character', with 'ship docking and maintenance facilities' and 'fabrication and assembly' activities. (2011, pp. 10, 15, 83, 84) It states that the naval base embodies the 'greatest concentration of listed buildings of any area' in the city: 'Forty listed buildings / structures: Five listed as grade I including the three main Georgian storehouses, Nos. 9, 10 and 11, which are clearly visible on entering the Historic Dockyard. Fifteen are listed Grade II\*, and twenty listed at Grade II. Two of the structures are also scheduled ancient monuments. The working part of the base, including HMS *Nelson*, also contains 10 listed buildings.' (2011, pp. 84-6)

It asserts that visually, the historic dockyard differs from the rest of the Naval Base in the uniformity of its 'classically inspired layout and Georgian architecture.' This displays a 'limited palette of materials – red brick, stone, slate and timber and a restricted architectural style characterised by neoclassical formalism and ornamental restraint.' It claims rightly that Portsmouth shares characteristics and national significance with the other English historic dockyard towns such as Plymouth and Chatham. (City of Portsmouth, 2011, pp. 85-6) In contrast, it characterised the working naval base generally as lacking 'the intimate qualities of the Historic Dockyard (derived from the tight grain of the buildings)', being of 'more utilitarian character', with 'radically differing styles of architecture from different periods'. It particularly notes 'the large BAE Systems assembly shed which dominates the heart of the base.' It points out that the naval base is separated from the rest of the city by a network of high walls and the harbour. (City of Portsmouth, 2011, pp. 85-7, 170)

This NDS twentieth century study concurs that the Portsmouth heritage area does contain a higher *proportion* of Georgian buildings, but the operational naval base contains more *buildings*, some of which are not within Conservation Area 22. Moreover, neoclassical decoration has continued within the active naval base throughout the twentieth century – in the Pumping Houses, the Factory, the Pipe Shop and Victory Building, to name some notable examples. Furthermore, the visual elements of Georgian utilitarian buildings such as storehouses and workshops have been continued in Arup's 1970s functional buildings.

### 3.4 ROAD NAMES

Current road names perpetuate early eighteenth century heritage such as Marlborough Row (SU 632013 006905), celebrating the Duke of Marlborough's victories 1704–11, during the War of the Spanish Succession. Aldrich Road (SU 63415 00921) is termed 'formerly Marlborough Road'. The name could allude to David Aldridge who was a Master Ropemaker at Portsmouth Dockyard in the 1690s, and also operated a private ropewalk outside the dockyard (Coats, 2000, chapter 5). The Talbot Edwards 1716 survey of Portsmouth Common shows a Rope Walk running south from the approximate area of the current Aldrich Road, which was then outside the dockyard. It is also shown on John Peter

Desmaretz's 1750 map (Hodson, 1978, no. 21b, 1716, pp. 20-1; no. 28a, 1750, p. 28).

Former bucolic settings are reflected in the early Ivy Lane (SU 631229 007799) and Stony Lane (SU 630315 005716), while Sunny Walk (SU 630474 005160) is evocative, and Camber Road (SU 62844 00433) topographical. Victoria Road (SU 6312799 008563) and Mountbatten Way (SU 638291 009485) are rare royal allusions. Twentieth century names encompass the more prosaic Frigate Road (SU 631680 009932) and Fleet Way (SU 636768 008170). Guardhouse Road (SU 639173 011410) recalls convict heritage. Approximately a quarter of the distance from the west along Stony Lane on the south side of Scott Road Offices (1/84), on the edge of what was the seventeenth century commissioner's garden, is a slab (probably concrete) inserted into the brickwork just above ground level. Brought to attention by Dennis Miles, it is inscribed 'Under this Stone theres A water Beer'. It is thought that the stone may be a marker for an old well or possibly a water tank. Both sorts of installations were found in all the 'old' yards. (Coad, pers. comm., 2012)

Fig. 197. Aldrich Road, formerly Marlborough Road, Portsmouth (c.1704–11). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 198. Stony Lane runs east-west along the north wall of the Portsmouth Great Ropehouse (1771, 1/65). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 199. Set into the south elevation of Portsmouth Building 1/81 is a dressed Portland stone or replacement concrete plaque which reads 'Under this Stone theres a water Beer', marking an old well or water tank surviving from the seventeenth century dockyard. This would have supplied the garden to the original Commissioner's House (1666) which lay north of Stony Lane until the house was demolished in the 1780s. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 200. Ivy Lane runs east-west between the north side of Portsmouth Long Row Officers' Houses (1715–19, 1/124-132) and the south of the Iron and Brass Foundry (1854, 1/140), then turns north, following the west side of the 1711 dockyard wall, meeting Victoria Road. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 201. Guardhouse Road sign on the former Portsmouth Lime and Cement Store (1878, 3/218) which survives as one of the convict workshops shown on Colson's 1881 map. A. Coats 2013. Reproduced with the permission of the MoD.

### 3.5 MATERIALS

Use of concrete and modern brick has given twentieth century buildings and additions a different character from previous centuries, when Portland stone and locally manufactured brick predominated. Reinforced concrete lent itself to large sections of buildings being prefabricated uniformly and *en masse* from the 1950s. It is thought that calcium chloride has been deliberately added to concrete at times to reduce the load-bearing time and contract costs. In some cases it has caused the concrete to burst, leading to demolition or repair of buildings in the late twentieth century. With their demolition, Portsmouth has retained the predominance of red brick in its later twentieth century buildings.

### 3.6 BUILDINGS

#### 3.6.1 Area 1

Fig. 202. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. View of the Georgian Dockyard looking south. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 203. Portsmouth HM Naval Base Area 1 (1974). MoD *HM Naval Base Building Location/Numerical Index*. Reproduced with the permission of the MoD.

Fig. 50. Portsmouth Officers' design for rusticated gate piers sent to the Navy Board (29 June 1711). TNA, ADM 106/667 (1711). Navy Board In-letters, P. The Navy Board replied that plain piers would be 'handsomer as well as cheaper than Rustick work' (Coad, 1989, p. 81, fn. 61; NMM, POR/A/5, 10.7.1711). Reproduced with the permission of The National Archives.

Fig. 204. Photograph of the north elevation of the Main (now Victory) Gate in 1895, showing its original width. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 205. Admiralty plaque to mark the widening of the then Portsmouth Main Gate (November 1943). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 206. Pre-1985 photograph of the Main Gate, Cellblock (1883, 1/2), Search Rooms (1/2B and 1/2C), Clocking Station (1949, 1/2D) and Romney Hut Boathouse (1948, 1/5). Courtesy of Portsmouth Royal Dockyard Historical Trust.

The earliest existing entrance, 3 **Main/Victory Gate** (1711, Grade II\*, 1244581, CA 22, PNBPT, SU 630082 003040) was designed by the Master Shipwright and built by the dockyard masons and house carpenters. It was widened from twelve feet to twenty-two feet in November 1943 to give access to wide loads. To allow the western pier to be shifted, the associated pedestrian entrance was demolished and a replica built further west. At the same time the decorative iron arch and lantern between the piers were removed. It was renamed Victory Gate around 1994 when the new Visitor Reception Centre was built.

The first **Dockyard Wall** (1711, Grade II\*, 1244581, CA 22, SU 63098 00391) marked the extent of the 'King's lands' which were surveyed in the 1660s, although the boundary between private owners and the king was not agreed until 1700 (Coats, 2000, pp. 142-6; NMM, 1700, SER/104; TNA, 22.1.1699[1700], SP44/204, fos 255-6). The fortifications line was represented on De Gomme's 1666 map and Sir Jonas Moore's 1667 map, depicted as a embankment with ramparts projecting into the fields: 'The worke which cast upp in the Yeare' [1666]. (The Dock Field Portsmouth, 1666; TNA, Moore, MPE 513, 1667; BL, Add. MS 16,371, 1700; TNA, 1700 ADM 1/3588; BL, Desmaretz, K. Top. XIV. 30, 1750) The earliest section (0.75 mile) from this gate on Portsea Common Hard to the original Marlborough Gate was erected in 1711 of red brick in English bond on a limestone foundation visible inside the wall east of the Porter's Lodge (1/8), where the ground level is approximately eighteen inches lower than on the outside. Three insertions in a paler red brick with concrete lintels were made during the Second World War or later to the section of wall now located in the Porter's Garden, to allow more employees access at muster time.

Fig. 207. Broad arrow incorporated into the Dockyard Wall near Victory Gate. A. Coats 2012. Reproduced with the permission of the MoD.

Fig. 208. Blocked gateway through the Dockyard Wall at Bonfire Corner which was aligned with the first (1704–c.1784) Dockyard Chapel. A. Coats 2012. Reproduced with the permission of the MoD.

Fig. 209. Original 1711 Portsmouth Dockyard Wall, this section now within the Naval Base between the new and original Marlborough Gates, taken inside the yard as the Marlborough Salient in 1944. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 210. Twentieth century fouled anchor on the outside of the Dockyard Wall built c.1944 after the Marlborough Salient was taken into the Dockyard. A. Coats 2013. Reproduced with the permission of the MoD.

In the wall section north of Bonfire Corner leading to Marlborough Gate, to the rear of Admiralty House (1/20, 1784), is inserted a red brick archway with brick piers and a stone plinth, infilled with similar red brickwork. Wessex (2004/2) suggests a late eighteenth century date, linked to the building

<sup>3</sup> An early Northeast Gate was closed in 1700 (Coats, 2000, Chapter 5, pp 142-7).

of the then Commissioner's House. An alternative suggestion made by the NDS is that it gave Portsmouth Common residents and dockyard workers access to the 1704 Dockyard Chapel (TNA, Prince George, 1703), as it is in alignment with the chapel which was demolished c.1784 to build Admiralty House.

Fig. 211. Former Portsmouth Naval Recruiting Office (1862, 1/1, PNBPT) with the additional wing created by Portsmouth City Council for use as a Tourist Information Centre (2001). A. Coats 2013. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 212. Tourist Information Centre Richard Partington Architects: Elevations, No. 2023.005A. PNBPT, 9.10.2001. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 213. Tourist Information Centre Richard Partington Architects: Ground Floor Plan, No. 2023.003C. PNBPT, 9.10.2001. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Just outside Victory Gate is the small, decorative former **Naval Recruiting Office** (1862, 1/1, CA 22, PNBPT, SU 629944 002840) whose function has changed on a number of occasions, more recently as a Portsmouth City Council Tourist Information Centre from 2001-12, and as a maritime bookshop and art gallery. It was refurbished by PCC in 2001, to add a new rear extension and entrance and raised viewing terrace to the eastern elevation. This has a timber frame, horizontal zinc cladding and a zinc roof. A disabled WC was installed in the original building. (PNBPT: Naval Recruitment Office/Tourist Information Office, Lease Agreement with PCC, 10 May 2002, Richard Partington Architects plans and elevations 2001)

Fig. 214. J473/03/71. Photograph of the Cell Block Interior: ground floor looking east/west (8 Oct 1971). ©Crown copyright.HE.

Fig. 215. J473/07/71. Photograph of the Cell Block Interior: first floor cell door (8 Oct 1971). ©Crown copyright.HE.

Fig. 216. J473/11/71. Photograph of the Cell Block Interior: urinal (8 Oct 1971). ©Crown copyright.HE.

The widening of the gate also resulted in the demolition of the Police Office in the **Cell Block** (1883, 1/2, Grade II, 1244585, CA 22, SU 629894 002909). The latter was externally refurbished in 1993–94 with a new parapet and chimney stacks (The Princes Regeneration Trust, 2006). In 2011 PNBPT was awarded funds from the Regional Growth Fund to convert the cells into studios for start-up businesses run by young people. The University of Portsmouth will mentor creative businesses to create private sector jobs. The **Search Rooms** (1/2B and 1/2C, PNBPT), the **Clocking Station** (1949, 1/2D, PNBPT), a tiny, narrow, single storey, brick building with time recording clocks by Gledhill-Brook, Huddersfield, and **Romney Hut Boathouse** (1948, 1/5), built on the site of the Working Mast House (1700) were removed in 1993 (Lambert, 1993) to permit the construction of the **Visitor Reception Centre** (1994, 1/3, CA 22, PNBPT, SU 629844 003021). Designed by architects John Winter Associates, this building is single storey with a galvanised steel frame and glazed walls, giving attractive views of the dockyard environment. A flexible open-plan interior, it houses offices, ticketing desks, an information centre and a coffee shop, indicative of the changing face of the area from workplace to museum quarter, tourism and heritage area regeneration.

Fig. 217. 15767/34 SU 6200/4. Aerial photograph of HMS *Warrior 1860* and Jetty (1987) from the northwest (9 Sept 1997). ©Crown copyright.HE.

Fig. 218. HMS *Warrior 1860* Jetty at Portsmouth (1987, PNBPT). A. Coats 2014. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

The Visitor Reception Centre gives access to HMS *Warrior 1860*. This, the navy's first ironclad launched in 1861, was salvaged from Pembroke Dock, where it had been employed as a pontoon, refurbished at Hartlepool and brought to Portsmouth in 1987. In 1985 a new berth 26 feet deep was dredged near Portsmouth Harbour railway station and a new jetty constructed in preparation:



On 1 March [1985] the Lord Mayor of Portsmouth, Councillor John Marshall, inaugurated the start of the dredging operation off the Hard to precede the construction of the £1,500,000 jetty. This is being built by the Portsmouth City Council to be ready for *Warrior's* arrival. In conjunction with Marine Consultants - Captain Colin McMullen and Associates — the Ship's Preservation Trust will provide the heavy anchors and cables to moor the ship so that two angled brows can be placed at upper deck level to allow embarkation and disembarkation of visitors at all states of the tide. (Wells, 1985, pp. 165-6)

Portsmouth City Council contributed £1.3 million for the concrete HMS *Warrior 1860* Jetty (SU 628774 002510), to boost the tourist attraction of the dockyard and indeed Portsmouth. The vessel is moored with a 20 ton and an 80 ton sea anchor, and a 5 ton sinker which maintains the tension. The 5 ton sinker goes up and down with the tide.

Fig. 219. Photograph of Portsmouth Muster Bell (1791), mounted inside the Main Gate until 1922. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 220. Photograph of the Muster Bell Plaque. Courtesy of Portsmouth Royal Dockyard Historical Trust.

The grey metal tube mounted on a granite plinth inside the Main Gate (CA 22, PNBPT, SU 629952 003366) indicates the site of the **Muster Bell**, cast in 1791 which weighed four hundredweight and was mounted originally on a post inside the Main Gate. The bell was rung at the start and end of the working day by the sergeant in charge of the gate. It was later moved to Unicorn Gate. The bell post was removed in 1922, when sirens took the place of bells for mustering, a brass plaque recording its removal. In 1992 PNBPT planned to return the bell and the brass plaque to their original site near Victory Gate. As the bell needed some conservation, it was restored by *Mary Rose* technical staff. The present location of the bell and the plaque is not known.

In Main Road outside the Visitor Reception Centre is a length of smooth granite **Cartway** (1825, CA 22, PNBPT, SU 629875 003305) (as opposed to a tramway which has rails for flanged wheels). This used to run from Victory Gate to a mast house with an extension close to Dock No. 1 (q.v.), making it easier to haul heavy loads, particularly masts, given that road surfacing in the early years of the nineteenth century comprised cobbles or setts. The slabs are two feet wide and six feet from centre to centre, thus giving considerable flexibility for variations in axle width. This section was imaginatively laid down, as were the accompanying granite setts, in 1995. Unfortunately there is no information in place as to the function of the slabs or setts.

Immediately to the north of the Visitor Reception Centre is a patent slip whose two sets of iron rails are visible, if rusty, comprising the remains of the **Romney Hut Boathouse** (1948, 1/5, SU 629625 003180). The location of the associated winding engine is unclear. This is the only usable and operational slipway in the naval base, and employed for Landing Craft operations. The space is now home to a collection of anchors, a 6 pounder cannon c.1780 which for many years was a bollard at Slip No. 5 (q.v.), a 12 pounder cannon c.1795, formerly a bollard at Victory Gate, and, more impressively, a compressed air capstan c.1914 salvaged from Pitch House Jetty (q.v.) A landing jetty between the slip and Boathouse No. 4 was constructed in 1994 to allow visitors to take harbour tours and boat trips (The Princes Regeneration Trust, 2006).

Fig. 221. MD95/03032 (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing based on 1850 map showing changes in yellow and later buildings in red dotted lines. Section showing Portsmouth Mast Houses, indicating that the site was 'Destroyed by Fire 1941 (Enemy Action)', not acknowledging that Boat House No. 4 was there by then. It also shows the 'New Site of Muster Bell'. Reproduced by permission of Historic England.

Fig. 222. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. View of Portsmouth Mast Houses and slips before Boathouse No. 4 (1937–40) was built. It may be surmised that the model-maker began at the southwest corner and did not amend it to reflect actual later changes

in the dockyard. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

North lies **Boathouse No. 4** (1940, 1/6, CA 22, PNBPT, SU 629213 003577). The original 10½ bay plan designed by E. A. Scott and J. D. W. Ball of the Civil Engineer-in-Chief's Office, Admiralty Department (PNBPT, New Boathouse Drawing 1098/37, 24.7.37; PNBPT, New Boathouse Sections, Drawing 1096/37, 24.7.37) extended as far south as the Cell Block, to follow the footprint of the earlier masts and slips (HE, MD95/03032, 1850/1955). The 1938 Model shows the Mast Houses, which are also shown on the 1924 map and HE, MD95/03032 (1850/1955). The intervention of the war caused the south elevation of corrugated steel, supported by a timber frame, to be erected temporarily in May 1940, when only 5½ bays had been constructed. The three walls are of reinforced concrete. It cost £150,000 plus £14,000 for machinery (Lowe & Preston, p. 26). The structure is supported by mild steel frames with four bays carrying three gantry cranes. One is missing – a result of bomb damage on 12 August 1940 which slightly damaged the steel structure (TNA, ADM 1/10949). Two of the cranes bear camouflage paint, thought to have been applied before the roof was constructed. The large Crittall windows and the east-facing glazing of the saw-toothed roof, which gives its north elevation a ridge and furrow profile, maximise light availability. The west and east elevations have a low parapet in front of a box gutter which collects rain water. In the south-west corner is a dry dock some sixty yards long and five yards wide, with vertical shuttered concrete walls, giving directly into the harbour. Taking advantage of the tall steel framework of the building, the electrically powered dock gate is of the guillotine variety, the only one of its type in the dockyard, a point not generally appreciated. The gantry cranes could lift vessels from the dock and transfer loads within the boathouse; the principle of lifting, but not transferring, vessels in this way was pioneered in Boathouse No. 6 (q.v.) in 1845. An original spiral staircase leads to the northwest gallery.

Fig. 223. New Boathouse HM Dockyard Portsmouth Elevations, Sheet 16. MPBW Drawing no. 1111/37, 24.7.37. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 224. New Boathouse HM Dockyard Portsmouth Ground Floor Plan, Sheet 4. Drawing no. 1098/37, by E. Scott for Civil Engineer in Chief, 24.7.37. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 225. New Boathouse HM Dockyard Portsmouth Retaining Walls Sections. Drawing no. 1096/37, by J. D. W. Ball, 24.7.37. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 226. Proposed M.E.D. Offices over existing Tool Store Elevations. HM Dockyard Portsmouth No. 4 Boathouse. MPBW Drawing no. AB1/1, 13.6.67. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 227. Gallery Plan and Section, HM Dockyard Portsmouth Boathouse. Drawing no. 73036, (no date visible but probably associated with AB1/1). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

During the Second World War Boathouse No. 4 constructed midget submarines and landing craft and maintained small craft. In 1942 the Director of Naval Construction, Commander C. H. Varley, who also owned Varley Marine Ltd on the River Hamble, developed *X3*, a prototype midget submarine designed to place mines beneath German battleships. The bow of *X4* was built at Hull, the control room at Portsmouth, and the tail in Devonport, assembled at Portsmouth in 1943. (Malcolmson, pers. comm. 15.8.2013; Henry, 2005, pp. 172-3; Arthur, 2005) Oral history evidence indicates that more than one was built:

They were building one-man submarines behind huge partitions [in Boathouse No. 4]. You weren't supposed to know what was going on but there was a veranda up top so you could see what was going on. Where the water came in they tested them by putting them in the water at night. (Jones, 2002, pp. 3-7)

George VI inspected the three-man submarine (*X4*) being constructed on 30 September 1942. The king wrote: 'In the Dockyard I saw a 3 man submarine in sections. One is already in comm<sup>n</sup> & has a range of 1000 miles. One man and Two man S/Ms are also being constructed.' (Royal Archives, GVI/Priv/Diary: 30.9.1942; Barrie-Smith, pers. comm. 16.2.15). In 1956–58 the Portsmouth Dockyard Modernisation and Development Programme planned to extend the boathouse for the Manager Constructive Department, allowing MCD to give up Boathouse Nos 5 and 7 (q.v.), which 'are of wooden construction and cannot provide modern appliances' and therefore to be replaced. (TNA, 1956–58, ADM 1/26499).

To afford access to the Mast Pond on the east side of Main Road, and to ensure that the water level therein was constant, a pound lock was constructed and a tunnel built under Main Road. The lock chamber itself was actually inside the old boathouse, and when Boathouse No. 4 was erected, the same strategy was adopted. The lock gate at the seaward end faces the sea, while that at the landward end faces the Mast Pond; both are standard mitre structures. This arrangement is unusual since in canal practice both lock gates face toward the higher level of water, but here water does not originate from the higher level. The chamber between the lock gates is roofed over with concrete, thereby creating work space. The entrance to the tunnel beneath Main Road has a stone arch; this is in good condition, so this may have been refurbished when Boathouse No. 4 was built. By contrast the eastern portal has large voussoirs in Portland stone, suggesting an earlier date. Both lock gates were rebuilt in 1999; they are of wood, but hydraulic, thus removing the need for space-consuming swing arms. For the latter reason, it is likely that the gates were similarly operated in 1940 at the inception of the building. The south-western elevation projects over the tidal camber, supported by a substructure of reinforced concrete V beams over pre-cast concrete piles and caps. Minimal decoration derives from a cornice and a projecting string course. On the northern elevation rainwater is collected in a galvanized steel trough behind the gable parapet.

Fig. 228. BB97/09275. Photograph of Portsmouth Boathouse No. 4 from the north west corner (28 July 1997). ©Crown copyright.HE.

Fig. 229. BB97/09274. West elevation of Boathouse No. 4 showing the concrete supporting trusses at high tide (28 Jul 1997). ©Crown copyright.HE.

Fig. 230. West (harbour) elevation of Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 231. Southern extent of the concrete and steel trusses forming the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) on its west (harbour) elevation. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 232. West elevation of the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) at low tide, showing its beams and trusses. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 233. Northern extent of the concrete and steel trusses forming the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) on its west (harbour) elevation, showing the shuttered concrete west seawall. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 234. Northern extent (east end) of the concrete and steel trusses forming the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) showing the eighteenth century Portland stone north seawall and slipway stones. Concrete repairs to the trusses were carried out in 2014–15. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 235. Lowest level of the eighteenth century Portland Stone slipway stones, held in place by a line of wooden posts, visible beneath a layer of solidified bags of concrete, below Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 236. Underside of a Portsmouth Boathouse No. 4 (1940, 1/6) concrete truss, showing its corroded iron reinforcing bar. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 237. Unused reinforced concrete beams lying beneath Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 238. Underside of Portsmouth Boathouse No. 4 (1940, 1/6) showing the shuttered concrete surface with twentieth century repairs using steel wire which has corroded. Concrete repairs were carried out in 2014–15. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 239. Southern extremity of the seawall of Portsmouth Boathouse No. 4 (1940, 1/6), sitting on the older and only operational patent slip in the naval base. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 240. Lock entrance to Portsmouth Boathouse No. 4 (1940, 1/6), showing the wooden lock gates which connect the channel running beneath Boathouse No. 4 and into the Mast Pond with the harbour. On the right is the battered eighteenth century Portland Stone sea wall, at the top a reinforced concrete beam supporting the building, and on the left shuttered concrete above Portland stone. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 241. Dock entrance to Portsmouth Boathouse No. 4 (1940, 1/6) on the west (harbour) elevation. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 242. Interior of the corrugated steel wall forming the south elevation of Portsmouth Boathouse No. 4 (1940, 1/6), showing the newly constructed stairway and mezzanine floor. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 243. Exterior of the corrugated steel wall forming the south elevation of Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 244. Interior steel frame and beam of Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 245. BB97/09263. Photograph of the spiral staircase in north end of Boathouse No. 4, Portsmouth (28 Jul 1997). ©Crown copyright.HE.

Within the context of contemporary industrial architecture the Boathouse is not innovatory, but within contemporary dockyard architecture it is significant because it is the 'only boathouse known to have been constructed in a home dockyard during the rapid rearmament period of the 1930s.' (Lowe & Preston, Conservation Management Plan, 2013, p. 3) It also marks a notable break at Portsmouth from nineteenth century revivalist neoclassical buildings. For these reasons the team considers that it should be listed. Modernism has few exemplars at Portsmouth, but Boathouse No. 4 (1938-40, 1/6) is a clear example of its use of functionalism to promote efficiency, influenced by Le Corbusier and Mies van der Rohe through the International style. A 1993 feasibility study for Boathouse No. 4 saw it as 'the 20<sup>th</sup> Century cousin to the equally functional but now justly celebrated Boatstore at Sheerness Dockyard'. Whelan considered it was 'executed with considerable flair, a concern for structural truth' and designed by 'someone with a full appreciation of the roots of the modern movement.' On its western elevation he saw its whiteness in contrast with the surrounding Georgian red brick as an echo of Inigo Jones's Banqueting Hall set among Tudor red brick, but also saw 'the strong balance between the vertical and horizontal as expressed in Albert Kahn's design for the Fisher Body Plant (Cleveland, Ohio, 1935)'. The eastern elevation he felt 'combines a grouping of "classical" window forms, first revealed in the Peter Behrens AEG Turbine Factory (Berlin, 1909).' (Whelan, 1993, para. 2.4)

In 1999 the mast pond lock gates in a channel connecting the Mast Pond to the Harbour, running beneath Boathouse No. 4 and the road, were replaced. In that year Southern Archaeological Services (SAS) carried out a survey (SAS, 1999, pp. 12-13; Fig. 10), establishing that the channel is stone-lined, built in at least two phases, in the same position as that shown on maps dating from 1668. These suggest that in 1668 the channel was open to the top, with a gate near the inner (eastern) end, with the outer (western) end wider than the centre. By 1716 the gate is shown as wider, probably carrying a walkway. A map of 1743 shows most of the eastern end covered, with faint lines possibly delineating a tunnel, the style of stonework consistent with this date. The report refers to a boathouse being built in the nineteenth century, with the western end of the tunnel lined with stone. The three gate system dates from this period. Coad, 1989, p. 180 shows a Boathouse in 1850 south of the channel. Two of the three gates form a lock, reflecting a change of use from a 'simple cut, with water levels controlled by a single gate, which would allow easy passage of masts' to 'use of the Mast Pond to include extensive work on boats.' (SAS, 1999, pp. 12-13; Fig 10)

The survey found that the floors of the lock chambers and tunnel are of stone, covered with timber in places. At the west end of the western chamber the floor stones are cut to fit the angle of the gates. The battered lock walls are made of 1 x 0.75m squared and dressed ashlar blocks. The blocks of the bottom two courses are smaller: (1 x 0.24m), slightly offset. The ashlar is cut each side by two vertical channels, interpreted as cuts for stop-boards to control water levels. An inlet on the north side of the lock chambers is thought to connect with the system of culverts running beneath the dockyard. A twentieth century timber mat bolted to the stone floor is associated with a fixed vertical panel which blocked the channel. The entrance to the tunnels is marked by large quoins of a later date than the tunnel itself. There is a handrail designed to pull boats through by hand. The tunnel roof is of dark red local brick, mostly laid with stretchers parallel to the long axis of the tunnel. SAS note that the gates appear to be too close together to allow passage of boats used in the late nineteenth and early twentieth centuries. No trace was found of de Gomme's defensive structures. (SAS, 1999, pp. 13-14, Fig. 11) This investigation demonstrated changes in the use of this site (from a mast house to a boathouse) and use of the Mast Pond for boats rather than masts, deriving from the building of Boathouse No. 6 in 1845.

Fig. 246. Photograph of Portsmouth Boathouse No. 4 tunnel: west opening, view south, ready for pintles (PNBPT, 22.9.1999 no. 38). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 247. Photograph of Portsmouth Boathouse No. 4 tunnel: east opening, view south, ready for pintles (PNBPT, 22.9.1999 no. 40). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 248. Photograph of Portsmouth Boathouse No. 4 lock gates: east opening (PNBPT, 3.11.1999 no. 48). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 249. Photograph of Portsmouth Boathouse No. 4 lock gates: adjustments to gates (PNBPT, 1.3.2000 no. 53). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

By 1995 the MoD had no further use for Boathouse No. 4, as the reduced navy required fewer ships' boats, and it passed to PNBPT, whose small boat collection was then serviced by a team of volunteers. Exhibitions and open day entertainments are intermittently held within, while without an assemblage of flag signals spelling 'DISCOVER PORTSMOUTH HISTORIC SHIPS' was displayed on the south elevation in 2013. In November 2013 PNBPT was awarded a grant of £3.75m from the Heritage Lottery Fund (HLF) for its Boatbuilding & Heritage Skills Training Centre project which will train apprentices and allow visitors to observe the process. It is due to open in 2015.

This plan for a viable reuse aimed to extend the life of the building through a conservation management plan of refurbishment and maintenance. The reinforced concrete undercroft and parts of the walls and roof are affected by chloride ingress and carbonation-induced corrosion. The worst damage has occurred in the undercroft within the splash zone, much of which has been patched. Lowe and Preston suggested that future specialist treatment could comprise impressed current cathodic

protection or a galvanic system of protection. In the building itself chloride ingress and carbonation-induced corrosion are localised around leaking windows and areas of roof. Because the southern elevation was not completed, ineffective roof drainage has caused rain water pooling and corrosion to the gutter lining. Repairs to windows and roofs will address further deterioration, with the application of impressed current cathodic protection to the worst affected areas, 'such as the integral gutters on the NW wall.' The external elevations are suffering from carbonation-induced corrosion which could be treated by anti-carbonation paints. On the western elevation, chloride ingress will be treated with impressed cathodic protection in conjunction with treatment of the undercroft. When built, the windows were zinc sprayed, which is not as durable as hot-dip galvanised. They could have been stripped; grit blasted; damaged sections repaired or replaced; hot-dip galvanised and powder coated or replaced with Crittall Corporate W20 windows. Portsmouth City Council advised that any treatment of the windows should be applied throughout. Installation of secondary glazing is also being investigated. A new entrance is proposed through the south elevation and new mezzanine floors for exhibitions and staff facilities. (Lowe & Preston, 2013, pp. 3, 35, 43-6, 51-3) The undercroft trusses were repaired 2014–15, refurbishing the concrete and installing sacrificial anodes to consume future oxidation. A University of Portsmouth student, Ahmed Alwaal, is assessing the longevity of concrete repairs made previously to BH4, and testing the current repairs for his PhD, 'Heritage concrete structures', completion due 2018 (supervisors Dr Stephanie Barnett and Dr Robert Inkpen).

Fig. 250. BB97/012856. Photograph of the northwest corner of Portsmouth Boathouse No. 4 with Boathouse No. 4 Annex on the north side (28 Jul 1997). ©Crown copyright.HE.

Attached to its north elevation is **Boathouse No. 4 Annex and Toilets** (1956, 1/6A, CA 22, PNBPT, SU 62921 00391). This two storey extension with a shallow pitched roof was part of the original design as Paint and Oil and Hoop Stores, retaining its original ground floor windows. The first floor was modified in 1956, given Georgian style sash windows and a steeper pitched roof. (Lowe & Preston, pp. 10-11) From 1982 to 2014 it was the meeting place and office of the Portsmouth Royal Dockyard Historical Trust Support Group (PRDHTSG), many of whose members were retired following the 1982 Portsmouth rundown. They started to collect artefacts and record data for the permanent Dockyard Apprentice Exhibition which opened in 1994 in Boathouse No. 7.

Fig. 251. Statue of William III (1718) in the Porter's Garden at Portsmouth. A. Coats 2008. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 252. Statue of Captain Robert Falcon Scott (1915) at the entrance to the Porter's Garden at Portsmouth. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

On the opposite side of Main Road (SU 628964 004366) from the Visitor Reception Centre is the **Porter's Lodge** (1708, 1/8, Grade II\*, 1244584, CA 22, PNBPT, SU 630166 003202), the oldest building in the yard and, since the 1980s PNBPT offices. It was refurbished in 1994. (Lambert, 1993) It is of stuccoed brick, with a limestone and brick basement which could possibly date from the earlier Porter's Lodge recorded in King's MS 43 (BL, 1698). While it represents the lowest grade of vernacular architecture for dockyard officers, and is much less grand than the officers' houses in Long and Short Rows, it was superior to the local artisans' houses. Deceased Porter Thomas Butler's contents auctioned in 1800 included a 'Capital Collection of Prints', a four post bedstead, mahogany tables, a marble chimney piece, Brussels and Kidderminster carpets, a dumb waiter and matching furnishings (*Portsmouth Telegraph*, 1800).<sup>4</sup> Refurbishment of the roof and chimney stacks by John Winter and Associates in 1994–95 also disposed of 'an unsightly single storey ground floor extension' whose removal the Ancient Monuments Board Panel on Historic Naval Bases had requested in 1981, 'thus reinstating its original form.' (The Princes Regeneration Trust, 2006; TNA, WORK 14/3301, 23–25 February 1981) On its east side a separate house at **19 College Road** (1908, 1/9, PNBPT, SU 630232 003212) was constructed for the Police Superintendent to manage the greater number of employees arising from rearmament and the

<sup>4</sup>Thanks to Porter's Gardener Charlotte Frost who found the newspaper article.

building of the *Dreadnoughts*. It has three storeys in red brick with the large windows associated with Edwardian domestic architecture, the whole indicative of the importance of a worthy in charge of dockyard security. It is used as offices. The house was built in the Porter's Lodge garden, which has been brought to life by the volunteer Friends of the Porter's Garden who since 2000 have nurtured plants and shrubs which might have been present in the eighteenth century. Landscape architect Robert Camlin designed the outline, based on eighteenth century maps and research carried out by Hampshire Gardens Trust. A wrought iron gate forged by Southsea blacksmith Peter Clutterbuck was fitted on 25 March 2002 and a matching pair of gates, also made by Peter Clutterbuck, was installed on 20 April 2003. The paths were laid with Breedon gravel on 21 April 2005. On 24 May 2005 three recycled granite seats, sculpted by Roger Stephens, were installed along the dockyard wall, representing the hull profiles of *Mary Rose*, HMS *Victory* and HMS *Warrior 1860*. The statues of **William III** (Grade II, 1272288) and **Robert Falcon Scott** (Grade II, 1272287) have featured in the garden since 2000, Scott having moved from The Parade after the Second World War to the west side of South Office Block Annexe (1/87C), and William III moved nearby from The Green (after originally being in The Parade at the eastern end of the first Commissioner's Garden). (Lambert, 1993; TNA, 1969, WORK 14/3075; Pevsner & Lloyd, 1990, p. 411; Patterson, 2000) *Hampshire Treasures* states that Scott was damaged in the war and restored in 1968; William III was restored in 1967 (1986, pp. 42-3) Beyond the garden in College Road is further evidence of the security associated with the Main Gate. The **Guard House** (1807, 1/10A, PNBPT, SU 63120 00408) and a two storey addition, **Police Quarters** (1909, 1/10, PNBPT), were vacated in 1951 and used by the Mary Rose Trust as offices since the late 1980s.

Fig. 253. Photograph of College Road, 1980s, as part of the naval base, showing on the right the nineteenth and twentieth century buildings beyond the Porter's Lodge, then the Police Quarters and the Naval Academy in the distance. The unrefurbished Boathouse No. 6 is in the right, beyond the Sail Loft. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 254. Photograph of College Road, late 1990s, after the nineteenth and twentieth century buildings have been demolished, to reveal the Dockyard Wall. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 255. Interior of Portsmouth Pay Office (1808, 1/11), showing the cast iron bases to the vaulted brick ceiling columns. A. Coats 2012. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Despite suffering from extensive bombing in the early years of the Second World War, most of the damaged buildings in the dockyard were returned to their original condition. This does not apply to the **Pay Office** (1808, 1/11, Grade II, 1244597, CA 22, PNBPT, SU 630922 004012) which lies in College Road adjacent to the Police Quarters and beyond the security fence. Proposed by Samuel Bentham, Coad states that 'it is the earliest naval building to use cast iron as a major part of its fireproof structure.' (2013, p. 164) Moreover, this use of fireproof cast iron piers is 'perhaps an early example of the use of cast iron on the same lines as the work done at Ironbridge.' (TNA, WORK 14/3301, 23-25 March 1981) The Pay Office was badly damaged in 1941 and rebuilt as a single storey structure; it has been in office use for some time. Serious rain ingress on the north elevation through the join between the original building and the repairs made in 1941 is causing damage to the brickwork which requires urgent assessment.

An **Office and Store** (1/12, CA 22, PNBPT, SU 63071 00388) and **Garages** (1/12A, CA 22, PNBPT) were built in 1947 to replace stables which had existed since the eighteenth century at the eastern end of the Porter's Garden; a **Gas Meter House** (1/13, PNBPT, SU 63111 00400) was built in 1965. (Lambert, 1993)

Fig. 256. P241/53 FL00981/01/001. Photograph showing progress of the reconstruction of the Former Naval Academy's cupola, following its bomb damage in 1941 (09 Mar 1953). Reproduced by permission of Historic England.

In the southeast corner of Conservation Area 22 is the **Former Naval Academy** (1729-32, 1/14 and 1/16-1/19, Grade II\*, 1244573, CA 22, MoD, SU 631572 004530). The listing description statement that

the central cupola was added in 1808 when it became the Royal Naval College is refuted by Rick Bolger, BAES Historic Estate Conservation Manager:

“Inconsistencies with the Listing Description.” The cupola was actually constructed as part of the original building between 1729 and 1733, as evidenced by unpublished research carried out by Alan Webb (Lt Cdr RN Ret'd) in 2013. Academy students were required to carry out a measured drawing of the Academy building, many of which survive from its earliest days, some held at the National Maritime Museum Greenwich and elsewhere, all showing the cupola (example reproduced in Appendix 9.1, CMP, 2014). The superb model of Portsmouth Dockyard dated 1774 held at the National Maritime Museum clearly shows the cupola in place (Fig. 9, Conservation Management Plan, 2014; National Maritime Museum, SLR2147).

In 1875 the College was moved to Greenwich, but a Pilotage Course was continued. In 1906, after remodelling in 1905, it was renamed the RN Navigation School, HMS *Dryad*, using the tenders HMS *Dryad*, *Plucky* and *Harrier*. During the First World War the building was used for officer accommodation but re-opened as HMS *Dryad* in 1918. In 1938 a new block closed off the fourth side of the courtyard with a chart room and lecture rooms. Air raid damage on the night of 10 March 1941 caused HMS *Dryad* to move to Southwick. The front elevation and cupola were damaged worst and were buttressed with shores, although still used as an officers' mess. (Carding, 2014, pp. 164, 166, 167, 170-1) Demolition was proposed, but according to Lambert (1993) and Pevsner and Lloyd (1990, p. 412), it was saved by 'Hodgeman, an Australian civil engineer', Works Officer W. G. Aitken and reconstruction officers, who supported the cupola which had dropped a foot when the front wall bulged. In 1981 the Ancient Monuments Board for England Panel on Historic Naval Bases called for landscaping to 're-establish the sense of the great square', enhance their formal setting and link the buildings. It excluded shrubs or flowers. The building was wholly restored as a naval officers' mess, but since its abandonment by the Royal Navy in 2007, problems with water ingress in the southern wing are causing dry and wet rot (English Heritage, October 2013, p. 71). The large tree in front obscures its features and prevents a clear link to the Commissioner's House, the Pay Office and The Green.

North is **Admiralty House Residence (formerly the second Commissioner's House)** (1784, 1/20, Grade II\*, 1244604, CA 22, MoD, SU 631172 005055), also damaged in 1941. The house escaped damage from three unexploded bombs, but suffered a severe hit on 17 April 1941 which destroyed the ballroom and the main staircase. The ballroom was not rebuilt and became offices. (Lambert, 1993) The previous St Ann's chapel (1704), built in the present garden, had been demolished in the belief that it had never been consecrated, but a consecration stone was found in 1785 which stated that it had been consecrated on 21 August 1704. The stone survived until the 1960s but is now lost. (Smith, 2001, p. 8) NDS suggests that the blocked up gateway through the dockyard wall was built to allow Portsmouth Common inhabitants to attend this chapel.

West of Admiralty House is **South Terrace** (1816, 1/22, Grade II, 1244545, CA 22, MoD, SU 629969 004693) built as the School of Naval Architecture which closed in 1830, reopened in 1848 as the Central Mathematical School and again closed in 1853, the School moving to Kensington. The consequence of the building's mostly educational use is that the current offices of Fleet Engineering have not undergone much internal change. In 1905 it became the RN War Course College. By 1930 it was mainly offices, and during the Second World War became the Tactical School. Post-Second World War it became NATO HQ and in 1972 housed the Ship Maintenance Authority. (Lambert, 1993; Hamilton, 2005, p. xxviii)

Lying between them is **The Green** (1/21, CA 22, SU 630547 004843), an almost square garden including a tennis court and topiary. During the eighteenth century this area was used for timber storage, woodworking, saw pits and the house carpenters' and carvers' shops. In the nineteenth century it became a garden and the statue of William III was moved from The Parade to the centre of The Green. There was an air raid shelter in the southeast corner (Lambert, 1993), which is no longer there.

Fig. 257. AA98/04652. Photograph of the west elevation of Portsmouth Boathouse No. 6 showing



boats hauled onto its ramp and the Mast Pond holding many dockyard boats (1956). Reproduced by permission of Historic England.

Fig. 258. BB012873. Photograph of the west elevation of Portsmouth Boathouse No. 6 with fewer boats in the Mast Pond after the heritage area was established and before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.

Fig. 259. Pre-1985 photograph of Boathouse No. 6. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 260. BB012872. Photograph of Portsmouth Boathouse No. 6 from the southwest before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.

Fig. 261. BB012875. Photograph of the ground floor interior of Portsmouth Boathouse No. 6 from the northeast, before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.

Fig. 262. BB012878. Photograph of the first floor interior of Portsmouth Boathouse No. 6 from the west, before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.

Fig. 263. 15790/04 SU 6200/8. Aerial photograph from the west of the bombed Storehouse No. 6 (right of centre) before its refurbishment in 2001, and the buildings to the south of College Road (centre right) before they were demolished to create the Porter's Garden in 2000 (9 Sept 1997). ©Crown copyright.HE.

Fig. 264. Portsmouth Boathouse No. 6. Photograph of the ground floor, looking east showing the cast iron pillars and trusses. PNBPT Record Photograph no. G41 (June 1998). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 265. Portsmouth Boathouse No. 6. Photograph of the south elevation. PNBPT Record Photograph no. E02 (June 1998). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 266. Portsmouth Boathouse No. 6. Photograph of the east end, south and east elevations, showing the missing roof after the air raid. PNBPT Record Photograph no. E07 (June 1998). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 267. Portsmouth Boathouse No. 6. Ground Floor Plan (25.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/530 PA. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 268. Portsmouth Boathouse No. 6. Ground Floor Mezzanine Plan (20.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/531 PA. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 269. Portsmouth Boathouse No. 6. First Floor Plan (20.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/532 PA. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 270. Portsmouth Boathouse No. 6. Second Floor Plan (20.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/533 PB. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 271. Boathouse No. 6 East Elevation Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/522 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 272. Boathouse No. 6 North Elevation Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/521 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 273. Boathouse No. 6 South Elevation Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/523 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 274. Boathouse No. 6 Section AA Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/525 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 275. AA026355. Photograph of the eastern interior of Portsmouth Boathouse No. 6 showing the cinema structure inserted within the area damaged by a bomb in the Second World War (2001). ©Historic England.

North of College Road is **Boathouse No. 6** (1845, 1/23, Grade II\*, 1244594, CA 22, PNBPT, SU 630466 004237). A boathouse had been on this site since 1680. The present building was built by Lt Roger Beatson R.E. (Evans, 2004, p. 53; Coad, 2013, pp. 203-5) Its eastern end was damaged in an air raid in 1941 (Lambert, 1993). This damage resulted in temporary roofwork at the rear of the building, but PNBPT undertook substantial refurbishment 1999–2001 with architects MacCormac Jamieson Prichard. A tiered auditorium on steel supports, which mesh well with the massive interior iron beams, was inserted at the rear, now in use as a commercial cinema, partly supported by PNBPT and Portsmouth City Council. The upper floor was converted to office use. Access to the first and second floors is by external lift and staircase enclosed in glass, a contemporary touch which seems not out of place. The ground floor is the scene of Action Stations, an activity centre interpreting the modern navy, science and technology. A small café added to the successful re-use of the Boathouse. Photographs and drawings show the changes which have taken place. Externally the large double wooden doors on the west side, opening onto the Mast Pond, were replaced by two glass windows and one glass siding door. A wooden walkway was laid over the stone ramp used to draw the boats into the building, but the latter is still visible. On 20 March 2009 a Raised Garden was added to the south-east approach, designed by architect Professor Sir Colin Stansfield Smith and PNBPT Surveyor Peter Lambert. It features a flight of granite steps, a double wall flowerbed and a piazza laid with Breedon gravel. (Coats, 2012)

An archaeological watching brief was completed by Southern Archaeological Services Ltd during the refurbishment of the boathouse (SAS, 1999). In Trench 1 concrete-filled trenches were found below the lines of the iron pillars. Finds from Trench 2 comprised three fragments of post-medieval earthenware pottery, fragments of post-medieval and Modern pantiles, early Modern and Modern peg-tiles and roof tiles; fifty-nine fragments of clay tobacco pipes thought to be early eighteenth century and mid-nineteenth century; two fragments of onion bottle bases; twenty fragments of iron nails and bolts and twenty-four shavings of *Pinus* sp., *Quercus* sp. and a stake of possibly *Castanea* cf. *sativa*, one fragment of charcoal and two oyster shell valves. A cobbled surface was found at the northern section of Trench 2, thought to be 'part of a road, path or hardway and post-dates the boathouse.' A line of north-south stakes cutting part of Trench 2, associated with a decayed wooden spread, could indicate control of water flow. Clay pipe fragments were found around this area. Examination of the ramp leading from the Boathouse to the Mast Pond 'showed that rails had been replaced by a set of rollers to facilitate the movement of craft in and out of the work area.' (SAS, pp. 2, 7-11) This evidence confirmed that the area presently occupied by Boathouse No. 6 had been used for boatbuilding and control of water flow since the early eighteenth century. (SAS, 1999, p. 2)

West of Boathouse No. 6 is the former **Mast Pond** (1665, SAM397, 1001852/Grade I, 1272267, CA 22, SU 629859 003930), dug by garrison soldiers and dockyard labourers (and possibly Dutch POWs, TNA, 1964–65, CM 1/163). The defensive pallisades around the yard did not encompass the pond until c.1695, when its shape was an irregular polygon connected to the harbour by a culvert. Moore's shading implies that it did not have vertical walls. (TNA, De Gomme, 1666; TNA, Moore, 1667; BL, King's MS 43, 1698) By the mid-eighteenth century it had acquired almost a regular rectangular shape (BL, Desmaretz, 1750). The pond is now fed from the harbour through a narrow channel. In 1797, a pair of lock gates was inserted to maintain the water level. Before land to the west of the pond was reclaimed there was a narrow bridge over the open channel to give access to the yard. With the advent

of steam powered ships the Mast Pond lost its function and became a Boat Pond. Two wooden framed and clad buildings were erected on iron piers over the south and north parts of the pond, with arches to hold the masts underwater.

Fig. 276. PK318/11 FL00982.02.001. Photograph of the conversion of Boathouse No. 5 (1/28) and the Sail Loft (1/27) into the Mary Rose Museum (8 Mar 1984). ©Crown copyright.HE.

**Boathouse No. 5** (1882, 1/28, Grade II, 1272290, CA 22, PNBPT, SU 630031 003690) lost its function of repairing small boats in 1973, and in 1984 was leased to the Mary Rose Trust for an exhibition of artefacts and a small cinema. The entrance on Main Road was modified with the construction of a display window for the Mary Rose shop. The entrance to the Mary Rose Museum until 2013 was via the much smaller wooden clad building (**Sail Loft** 1912, 1/27, Grade II, 1272290, CA 22, PNBPT, SU 630091 003543) formerly of two storeys but now one only, adjacent to the south side of Boathouse No. 5, but not lying over the Mast Pond. In 2014 it reverted to being a boathouse while Boathouse No 4 was refurbished as a Boatbuilding Academy. On the north side of the Mast Pond and parallel with Boathouse No. 5 is **Boathouse No. 7** (1875, 1/29, Grade II, 1272291, CA 22, PNBPT, SU 629672 004249), converted in 1993/4 to house a large café, shop, a cash point and the Dockyard Apprentice Exhibition. Of significance in the latter are four of Marc Brunel's pulley block-making machines, formerly in the possession of Portsmouth Museums and Records Service. The machines comprise a mortising, a scoring, and a shaping machine, together with a corner saw. Considering their importance in engineering history, these machines are not given the publicity they deserve. Inside the entrance is a modern maquette of the Georgian yard. To the north of Boathouse No. 7 is a **Clocking Station** (1938, 1/30, PNBPT, CA 22, SU 629366 004293); a toilet was added in 1956.

Fig. 277. BB003709. Photograph of the interior of Portsmouth Boathouse No. 7 from the northwest before its refurbishment in 1993–94 to house the Dockyard Apprentice Exhibition, a café and a nautical shop (11 Jun 1991). ©Crown copyright.HE.

Fig. 278. Entrance to Sunny Walk Offices (1950, 1/31). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 38. Concrete architrave, north elevation, Storehouse No. 5 (1951, 1/34). A. Coats 2013. Reproduced with the permission of the MoD.

Within the naval base, further north on the eastern side of Main Road is the impressive central entrance to **Sunny Walk Offices** (1835, 1950, 1/31, CA 22, MoD, SU 629641 004684), the refurbished remnant of the eastern section of Second World War bomb damaged Storehouse No. 8. Until 1991 it housed the RN Film Corporation, then in the 1990s the CNH Reserves Offices (Lambert, 1993); it now houses the Department of Community Mental Health. In the space created by the demolished western section, in considerable contrast, are twentieth century wooden clad **Offices** (1963, 1/32, CA 22, MoD, SU 629385 004546), a small **Electricity Sub-Station** (1963, 1/33, CA 22, MoD, SU 629297 004734), a brick **Store** (1/34, CA 22, MoD) and **Snack Bar and Rest Room** (1/34A, CA 22, MoD), were built. The western end of **No. 8 Store** (1835) was rebuilt as **Storehouse No. 5** (1951, 1/34, CA 22, MoD, SU 629219 004568). It is single storey, square in plan, in red brick; the east and west elevations have a wide concrete architrave beneath the guttering. The opportunity was taken to use the space to the west, formerly occupied by a curving rail track and earlier cartway entering the building, to site the new shipwrights' workshop to the west of the original.

On the opposite side of Main Road, in the heritage area, is **Storehouse No. 9** (1782, 1/35, Grade I, 1272283, CA 22, PNBPT, SU 628895 004116). Remarkably little has changed since its construction; the ground floor doors facing onto Main Road were removed in 1980, making a visitors' internal walkway along the length of the building. For some time there was a Victory shop at the north end of the ground floor, but this has since been converted into a café. The other half of the ground floor is leased to a high quality antiques shop. Since the 1990s the floor above has been the storeroom for PNBPT archives in the care of the Portsmouth Royal Dockyard Historical Trust Support Group, a group of

volunteers, many of whom formerly worked in the yard. Outside the northern end of the storehouse is a rail weighbridge, while above it, fixed to the corner of the building are the base plates of a crane, the jib, which transferred goods between rail and the first floor, having been removed. By the 1960s the use of the dockyard railway was diminishing, finally to close in 1978. There is a Camber Road sign on the south elevation.

**Storehouse No. 4** (1/36, CA 22, MoD, SU 62859 00419) was built in 1938 where there had previously been a weighbridge until c.1930. In the 1990s it was used by PSTO(N). An **Amenity Centre** (1/37, CA 22, MoD, SU 62869 00403) was built in 1894 as a Dining Hall. It has been unused since 1990. (Lambert, 1993)

The area within the naval base to the west of the Camber is known as Watering Island.<sup>5</sup> Access is by bridge supported by circular iron piers. To facilitate the unloading of vessels at low tide, in 1804 a caisson was provided, prior to the present fixed link c.1850. The road surface is no more than a decade old, as are the pedestrian walkways on each side.

West of Storehouse No. 9 lies the **Hydraulic Engine House** (1861, 1/38, Grade II, 1272286, CA 22, MoD, SU 628803 003806) with its characteristic hydraulic accumulator tower constructed by the dockyard engineer John Murray, extended in 1904 and modified in 1928 (Lambert, 1993). At its peak the system powered eight cranes, nine capstans, nine lifts, and for a time the mechanism in the Chain Test House (q.v.) (Riley, 1986, p. 191). By 1929 it was the last hydraulic engine house to be working in the Yard.

West of the Hydraulic Engine House is a Store (c.1859, 1/39, CA 22, MoD, SU 628573 003630) in dark red brick with two gables and a slate roof, with twentieth century alterations, used by Hythe Marine Services. It was formerly Oil Storehouse No. 3, built on piles at the south end of South Camber, using unused space when ships became too large to use the Camber. (Lambert, 1993)

Fig. 279. Semaphore Tower and Rigging House fire 1913, saluting party. Image 1499A/3 supplied by PMRS, courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 280. Photograph by Stephen Cribb, 'The last of the Old Semaphore Tower falling down after the day of the fire in 1913.' PMRS, PORMG 1945/652/5. Photograph reproduced with the kind permission of Portsmouth Museums and Records Service.

Fig. 281. Eastern elevation of the former Sail Loft/Rigging House (1784, 1/40-49), Portsmouth Semaphore Tower (1810-24 1/40) and Lion Gate (1778, 1/50A). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 282. Lion pediment of Portsmouth Lion Gate (1778, 1/50A), one of Portsea's town fortifications (formerly situated close to the entrance to Anglesey Barracks and the present HMS *Nelson* Gate), incorporated into the west (seaward) arch of the Sail Loft/Rigging House (1784, 1/40-49) and Semaphore Tower (1810-24, 1/40) in 1929. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 283. Portsmouth Semaphore Tower (1922-23). 1/50. Record Drawing, HM Dockyard Portsmouth. Proposed Reconstruction of Semaphore Tower A.E., SCE, Drawing no. L286. BAES. Reproduced with the permission of the MoD.

Fig. 284. Portsmouth, Rigging House and Semaphore Tower, Basement and Ground Floor Plans, (2.11.1926). 1/50. Record Drawing no. 1, A22/26, by A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

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<sup>5</sup> This area, with sufficient depth of water and close to the harbour entrance, supplied ships with water in the seventeenth century through a wooden water pipe. Sir Anthony Deane, Portsmouth Commissioner 1672-75 sketched a 'New watering place' and a 'New pipe' leading from a 'New well' in the area of The Green (1/21). (TNA, SP29/341, fos 218, 218v, 25 February 1672/3).

Fig. 285. Portsmouth, Rigging House and Semaphore Tower, 1st and 2<sup>nd</sup> Floor Plans, (2.11.1926). 1/50. Record Drawing no. 3, A23/26, L291 by A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

Fig. 286. Portsmouth, Rigging House and Semaphore Tower, Flag pole removed, sections and south elevation (2.11.1926). 1/50. Record Drawing No. 5, A26/26 A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

Fig. 287. Portsmouth Rigging House and Semaphore Tower, east elevation (2.11.1926) 1/50. Record Drawing no. 6, A27/26 by A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

Fig. 288. Portsmouth, Rigging House and Semaphore Tower, Detail of Upper Portion of Tower West Front, central flagpole removed, elevation (2.8.1927) 1/50. Record Drawing no. 9, 38/27 by A. C. Hodges. CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

Fig. 289. 15790/05 SU 6200/7. Aerial photograph of the Semaphore Tower and Rigging House from the west (9 Sept 1997). ©Crown copyright.HE.

Fig. 290. 15800/33 SU 6200/17. Aerial photograph of the Semaphore Tower and Rigging House from the east. (9 Sept 1997). ©Crown copyright.HE.

Dominating the road leading to Watering Island is the **Semaphore Tower** (1810–24, 1923–29, 1/40, CA 22, MoD, SU 627986 003991). On 20 September 1913 the tower was destroyed by fire, but was rebuilt 1924–29. Portsea's old **Lion Gate** (1778, 1/50A, Grade II, 1272303, CA 22, MoD, SU 627986 003991), which had been in store since the 1870s when it was removed from Portsea's town fortifications (situated close to the entrance to Anglesey Barracks and the present HMS *Nelson* Gate), was built thoughtfully into the arch in 1929 (Ordnance Survey, 1861, Hampshire Sheet LXXXIII.7.25). A sketch of the numbered stones dates from 1900 (TNA, WORK 41/328). Upon the harbour elevation is inscribed: 'THE LION GATEWAY PORTSEA BUILT 1778 INCORPORATED IN THIS BUILDING IN THE YEAR 1929'. This gate is known as the Gateway to Empire. The steel of the 126 foot mast is said to have been taken from German cruiser *Nürnberg*, which surrendered to the Grand Fleet in 1918 and was scuttled on 21 June 1919 at Scapa Flow. The vessel was salvaged and used as a target off the Isle of Wight in 1920, so it may well have been berthed at Portsmouth Dockyard between trials and the metal removed (Buxton, pers. comm., 2014). It was noted later on two drawings that the flagpole was removed (BAES, annotated 1926 drawing No. 5 and 1927 drawing No. 9). The original tower was slotted into the space between two other buildings, the **Sail Loft** (1784, 1/40, CA 22, MoD, SU 628161 003704) to the south and the **Rigging Store/Store 28** (1784, 1/49, CA 22, MoD, SU 627761 004354) to the north. The Sail Loft was gutted in the 1913 fire and rebuilt as a five storey office block in rich red brick, now used by the Flag Officer Portsmouth and the Harbour Control Centre. Its south elevation is signed BAE Rigging Department; added to the east elevation is a late twentieth century red brick stairwell. Solid brickwork on the north elevation 'anticipated a north wing to balance the south wing comprising the rigging store and offices, but this never transpired.' (BAES, PSA, Building Management SE, Dec 1991, p. 2) The ground floor of the Rigging Store was considered worth saving, the original brickwork and Portland stone base being much in evidence, although the windows have been given concrete lintels. It is now used as a Sea Cadet Store.

In 1983 PSA (Property Services Agency) surveyed Lion Gate as follows.

The arch when approached from the East (Dockyard) is approximately 7 metres high to the apex and about 4.5 metres wide with a smaller rectangular opening on either side. The West elevation (to the harbour) has a smaller central arch with two round headed arched openings originally for pedestrian traffic, one of which is now glazed. The main arch is crowned by a pediment incorporating a lion moulding with two circular column projections either side of the arch. There are also bullseye windows over each pedestrian arch. Within the gateway the flank walls are faced mainly in red engineering brick with high level semi-circular windows,

with stone and concrete dressings. There are windows in the main central section which have been replaced with modern windows which are not in keeping with the original type. (BAES, PSA, 1983)

A 1991 PSA survey found that:

The building is supported by loads from stanchions transmitted to pile groups. Information on general arrangement drawings indicates that the reconstruction has utilised the foundation construction from the original building, which comprised counterfort brick piers supported some 5.8m below ground level, by a square raft and pile group in square of nine. As the original building dated back to the 19<sup>th</sup> century, it is likely that both raft and raft group are of timber, but no details are available as to timber species. (BAES, PSA, 1991)

In 1995 Sawyer Architects noted:

Modern electrical fittings and signage have been fixed to the gate's stonework. At present these are not severely damaging to the stone but over a period of time the metal hangers will in all probability begin to affect the stonework. (BAES, Sawyer, 1995)

Fig. 291. AA045925. Photograph of the interior of the Chain Test House looking south. (9.7.2003). ©Historic England.

Fig. 292. AA045923. Photograph of the floor of the Chain Test House, the pathway consisting of Portsmouth Dockyard cast iron ballast pigs (9.7.2003). ©Historic England.

West of the Semaphore Tower is the **Chain & Cable Test House & Store** (1843, 1/41, Grade II, 1272294, CA 22, MoD, SU 627836 003466), having this function from 1905 to the 1970s, with its own independent hydraulic pressure mechanism, the most recent by Greenwood & Batley, Leeds, installed in 1929. Prior to this it was a chain store. On 12 August 1940 a raid demolished the greater part of the roof and windows, badly damaging machinery (TNA, ADM 1/10949). For a few years in the late 2000s it was a store for Mary Rose Trust items recovered when the *Mary Rose* stem was excavated in 2005, but is now empty. On the edge of South Railway Jetty originally stood the decorative **Royal Navy Railway Shelter** (1893, 1/45, Grade II, 1272292, CA 22, MoD SU 62968 00423) at the terminus of the single track branch railway line from Portsmouth Harbour station. However, following doubts as to the strength of the Jetty, and to clear space on the quay, the Shelter was moved c.2000 a short distance to the edge of the Camber (SU 627580 004860), where it is in incongruous isolation, no railway line ever having passed this way. The railway line crossing the Hard had a swing bridge adjacent to the Jetty which was dismantled in 1946. Remains of the circular iron columns and cast iron fittings are extant. The coping stones marking the edge of the Jetty prior to the 1929 extension seawards are still visible. The rail track that can be seen at the edge of the Camber was that of a travelling crane. The present site of the Royal Shelter was formerly that of the **Buoy Workshop** (1900), its presence indicated by a collection of metal buoys of various descriptions outside it. The location was one of the last cobbled surfaces in the Yard. Nearby a number of ballast pigs have been set into the surface. The single storey **Storehouse No. 1** (1905, 1/46, CA 22, MoD, SU 627511 004166) is also empty. It has no particular architectural merit, but is important since it represents the move away from multi-storeyed stores, while the use of steel girders for the roof span obviates the need for internal piers, facilitating interior movement. Associated with the original site of the Railway Shelter was the small **Former Railway Station and Waiting Room** (1878, 1/47, Grade II, 1272293, CA 22, MoD SU 627293 004579), complete with typical railway canopy valancing above the iron piers made by local ironfounder W. H. Sperring. It is now empty.

Fig. 293. Remaining cast iron elements of the Portsmouth Railway Swing Bridge to South Railway Jetty, c.1876. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 294. Portsmouth Railway Waiting Room (1878, 1/47) on South Railway Jetty. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 295. Portsmouth Railway Shelter (1893, 1/45) on South Railway Jetty, re-sited since c.2000 on the west quay of the North Camber. A. Coats 2013. Reproduced with the permission of the MoD.

On the north-facing quay of the Camber, west of Storehouse No. 10, is **Storehouse No. 12** (c.1880, 1/51, CA 22, MoD, SU 628736 003916). Built c.1880 as a Shipping Store (Lambert, 1993); since 1998 it has held the Library of the National Museum of the Royal Navy, Portsmouth. Its narrow plan allowed the use of iron beams without internal support, perhaps one reason for its present-use selection.

West of Storehouse Nos 9, 10 and 11 is the quay onto which goods were unloaded from the Camber. (The elegant appearance of these buildings facing Main Road was actually their back elevation). When ships arriving in the mid-nineteenth century became too large to gain access to the Camber, the quay space was put to other uses. Thus to the west of Storehouse No. 11 the **Jettyman's Store** (c.1870, 1/52, CA 22, MoD, SU 628211 004823) was built. More accurately this might be described simply as boathouses; there are thirteen bays facing the Camber, four with double doors, with a Portland stone course close to the footing, suggesting that the modification might have been early twentieth century, and four bays on the northern elevation. It is used by Admiralty pilots.

Fig. 296. Former Office for the Portsmouth Captain of the Yard/Harbour Master (c.1850, 1/53), now the Disposal & Reserve Ships Organisation. A. Coats 2013. Reproduced with the permission of the MoD.

At King's Stairs is the former Office for the Captain of the Yard/Harbour Master (c.1850, 1/53, CA 22, MoD, SU 627258 005399) now the **Disposal & Reserve Ships Organisation** (DRSO), dating from 1906. It stored the C-in-C's and Royal Yacht's boats in the 1930s. Nearby is the Captain of the Port's Flagstaff which was at Victory Gate but was moved in the early 1990s to make way for HMS *Warrior 1860*. The title 'Captain of the Port' was introduced to Portsmouth in July 1969. Nearby, Store No. 20A (1/54) was an Air Raid Shelter built in 1939, a single story red brick building with a reinforced concrete roof, now gone, possibly destroyed in the air raid on 12 August 1940, see below (Lambert, 1993; Donnithorne, pers. comm. 2013)

Fig. 297. 'Two low buildings with steam coming out of pipes, railway line in front, dock in right foreground.' (c.1920) Photograph looking southwest towards the buildings, formerly on the site of the Victory Gallery, which included a caulkers' cabin, a divers' gear store and an engine house office (The Princes Regeneration Trust, 2006; Lambert, 1993). Dock No.1 is in the foreground and the Former Office for the Captain of the Yard/Harbour Master (1/53) is in the background. Image 404A/6/17 supplied by PMRS, courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 298. Rainwater hopper dated 1927, Portsmouth Victory Gallery (1938, 1/57, NMRNP). A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 299. Stone laid by W. L. Wylie in 1929, re-cut in 1988, Portsmouth Victory Gallery (1938, 1/57, NMRNP). A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 300. Rainwater hopper dated 1962, Portsmouth Victory Gallery (NMRNP, 1938, 1/57). A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Immediately north of Storehouse No. 11 is the **Victory Gallery** (1938, 1/57, CA 22, PNBPT, SU 627711 005816). Previously on the site were a caulkers' cabin, a divers' gear store and an engine house office (The Princes Regeneration Trust, 2006; Lambert, 1993). A museum was required to store Nelson relics during and after the restoration of HMS *Victory*, as future plans did not allow space on board for the artefacts. This site, with a lawn in front, did not obscure the view of HMS *Victory* from the harbour. (Aberg, 2005, p. 362-3) The Gallery was built in three stages after W. L. Wylie R.A. laid a stone on 22 May 1929. In 1930 George V opened Wylie's panorama during his visit to the first Whale Island Tattoo. Lambert (1993) records that previously the museum had been located at the east end of the Ropehouse. The Gallery was opened on 25 July 1938, ready for Navy Week in July 30–August 6

(*Illustrated London News*, July 30, 1938; Issue 5180). It is one of only three principal twentieth century buildings in the oldest part of the dockyard. Its purpose was to amplify the deeds of Nelson and HMS *Victory*, which appropriately faces the Gallery from Dock No. 2 (q.v.). In red brick, the two wings are single storey, while the main structure is much taller with a substantial round-headed window above the entrance. The roofs are flat topped. It is now an essential part of the National Museum of the Royal Navy. On the south west corner is a stone inscribed 'THIS STONE WAS LAID BY W L WYLIE R.A. AS A TRIBUTE TO THE MEMORY OF NELSON AND HIS OLD SAILING NAVY MAY 22 1929'. It was recut during renovations in 1988 which also re-clad the roof with copper following the October 1987 hurricane. Rainwater hoppers bear the inscriptions 'GR 1927', 'AD 1931' and 'ER 1962'.

Fig. 301. Dockyard apprentices monitoring HMS *Victory* for hull movement in Portsmouth Dockyard, c.1954. Reproduced courtesy P. Nex.

HMS *Victory* was berthed in Dock No. 2 in 1922 and restored by the Admiralty with funds raised by the Society for Nautical Research, its docking costs provided by the Admiralty (Aberg, 2005, pp. 358-68). The fabric of the ship has changed considerably since it was docked, restored to Trafalgar condition, with the Royal Navy, and since 2012 the National Museum of the Royal Navy, responsible for maintaining and interpreting the ship with continuing SNR support. HMS *Victory* was gifted on 29 March 2012 to the HMS *Victory* Preservation Trust, incorporated within the HMS *Victory* Preservation Company. The Ministry of Defence donated timber (600 cu m of teak, mahogany, and oak) to be used in her preservation and conservation, with further Crown-owned timber also available for the preservation of the ship. During 'the next 10-20 years, it is projected that a sum in the region of £30.625million (at current costs) will be expended in bringing the Ship to (something close to) new condition.' (NMRN, 10 December 2014, p. 35)

Fig. 302. J186/01/71. Photograph of the west elevations of Storehouse Nos 9, 10 and 11 (28 Apr 1971). ©Crown copyright.HE.

Fig. 303. AA98/04645. Portsmouth Dockyard prints FL00981. Photograph of the eastern elevation of Portsmouth Storehouse No. 11 taken from outside South Office Block Annexe (1931, 1/87C) by Eric de Mare (1956). The statue of Captain Robert Falcon Scott was in this spot following the Second World War until 2000, when it was moved to the Porter's Garden. Reproduced by permission of Historic England.

Fig. 304. Three postcards of Portsmouth Dockyard Museum (n.d.), probably within one of the three Georgian storehouses. Courtesy George Malcolmson Collection.

Fig. 305. J057/01/72. Storehouse No. 11, north end, conversion to the McCarthy Museum (28 Apr 1971). ©Crown copyright.HE.

Fig. 306. J057/03/72. (28 Apr 1971). Photograph of Storehouse No. 11, ground floor conversion to the McCarthy Museum. ©Crown copyright.HE.

Fig. 307. J106/04/72. Photograph of Storehouse No. 11, ground floor conversion to the McCarthy Museum (28 Apr 1971). ©Crown copyright.HE.

Fig. 63. Photograph of Storehouse No. 11, ground floor conversion to the McCarthy Museum (28 Apr 1971). HE NMR, J356/01/72. Reproduced with the permission of Historic England.

The earliest of the impressive eighteenth century stores is **Storehouse No. 11** (1763, 1/58, Grade I, 1272285, CA 22, PNBPT, SU 628070 005410). On 12 August 1940 it suffered a 'near miss' to the northwest corner, causing severe damage to the cellar where the Dockyard Area HQ was situated and two people were killed (TNA, ADM 1/10949). Another near miss occurred in 1963: A. E. Chatterton of the Ministry of Public Buildings and Works (MPBW) wrote to G. W. Newton, MPBW Senior Civil Engineer, regarding the replacement of Storehouses 10 and 11 by a modern office block, emphasising the significance of the historic buildings grouped around HMS *Victory* and declining to prepare any



further such schemes. He reported that Rear Admiral Sir John Walsham, Admiral Superintendent at Portsmouth Dockyard, 'is most perturbed at the suggestion that these buildings might be pulled down' and 'intends to write to somebody at the Admiralty about it.' Chatterton informed Walsham that the MPBW had ruled that 'modernisation of a building should only be resorted to if the estimated cost of conversion does not exceed two-thirds of the estimated cost of a new building'. Furthermore, 'any excess costs over the two-thirds would have to be related to the degree of importance attached to any preservation order'. He queried why they had not been listed in view of their historical significance and proximity to HMS *Victory*. (TNA, 1950–65, CM 18/3) In 1981 the storehouses were visited by the Ancient Monuments Board for England Panel on Historic Naval Bases, including Dr Basil Greenhill and Jonathan Coad. They reported that it was 'unthinkable that they should ever be removed. If this could be accepted by the Navy as an immutable fact, then the sooner the roof and timber repairs were put in hand the better it would be for all concerned'. They urged: 'At the same time careful thought would need to be given to appropriate uses for the Storehouses. An imaginative conversion was required which would retain as much of the original structure and design as possible.' They observed that

the adaptation of the ground floor for use by the naval museum, which had completely concealed the structure by internal panelling, was inappropriate as well as expensive, and could only be regarded as an example of how not to use the existing structure. (TNA, 1981, WORK 14/3301)

In discussing a proposed bridge link with Storehouse No 10 in 1989, the view of one member of the Panel was that 'the bridge should not be overdesigned and that it should resemble something which may have been erected by the Dockyard.' (PNBPT, 12 September 1989) The storehouses were not in fact listed (they had been scheduled monuments) until 1999, following Lake and Douet's recommendation, but it was due to such individuals that many buildings survived the modernisation movement of the 1960s and naval base development in the 1980s.

The storehouse passed to the Royal Naval Museum in 1986. Here the ground floor doors have been replaced by windows above a lower brick wall and there is no visitors' walkway. In 1987–79, English Heritage made a grant following the October 1987 hurricane for a new lead and slate roof and dormer windows (The Princes Regeneration Trust, 2006; PNBPT Storehouse No. 11 roof repairs, 1987). Approval was given for a Bridge Link between Storehouses 10 and 11 and refurbishment of Storehouse 11 and Victory Gallery: conversion of the 1<sup>st</sup> and 2<sup>nd</sup> floors of Storehouse 11 as a library, offices and storage of museum exhibits and an external fire escape (PNBPT Stores 10, 11, 1987–1989). Designs for new floor layouts for the museum were submitted in 1989 (PNBPT Storehouses 9, 10, 11, 1989). The Library opened as a public resource in 1990. The ground floor comprises a gallery, the floors above now used as offices and conference room, the whole being serviced by a lift enclosed in a glass surround installed in 1997. The clock in the central pediment came from the RN Armament Depot, Lodge Hill, Rochester, in 1963 (Lambert, 1993). The restoration of Storehouses 9, 10 and 11, excellent examples of eighteenth century industrial architecture, is a great asset to the heritage area.

Fig. 308. J186/05/71. Photograph of Storehouse Nos 9, 10 or 11 (28 Apr 1971). ©Crown copyright.HE. It is hoped that the particular storehouse can be identified.

Fig. 309. J186/06/71. Photograph of Storehouse No. 9, 10 or 11 (28 Apr 1971). ©Crown copyright.HE. It is hoped that the particular storehouse can be identified.

Fig. 310. J360/06/72. Photograph of Storehouse Nos 9, 10, 11: Mr Hartley's fire plates on first floor joists and floorboards (c.1971). ©Crown copyright.HE.

To the north of Storehouse No. 9 is **Storehouse No. 10** (1776, 1/59, Grade I, 1272284, CA 22, PNBPT, SU 628470 004779) whose former wooden ground floor doors facing Main Road have been replaced by opaque glass doors. The central clock tower was destroyed in the Second World War, but was restored in 1991–92, as far as possible replicating the original design by using pre-war photographs. Timbers

infested by beetle (*Xestobium Tessellatum*) were renewed. (PNBPT, Entablature and Capital to Clock Tower, Project No. 61, Drawing PX61/5K/2, 16.11.89) The clock itself, manufactured in 1878, came from Bristol Grammar School at a cost of £50,000 (Lambert, 1993). A metal weather vane, thought to have originated from the Fire Station, was placed above the tower. Since 1972 the ground floor has been used by the National Museum of the Royal Navy (Portsmouth) (until 2009 known as the Royal Naval Museum) for exhibitions. Its recent refurbishment for the twentieth century Babcock Galleries (2014) has revealed the structure and the story of the building.

Fig. 311. AA98/04650. Portsmouth Dockyard prints FL00981. Photograph by Eric de Mare of the eastern elevation of Portsmouth Storehouse No. 10, with the railway track in evidence. (1956). The doorways were modified for the NMRN twentieth century Babcock Galleries (2014). Reproduced by permission of Historic England.

Fig. 312. Ground floor of Portsmouth Storehouse No. 10 (1776, 1/59) looking south along the eastern bay, showing renewed brickwork and timber pillars and beams during its refurbishment for the twentieth century Babcock Galleries (2014) A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 313. Ground floor of Portsmouth Storehouse No. 10 (1776, 1/59) detail of renewed brick arches displaying twentieth century ordnance in the twentieth century Babcock Galleries (2014) A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 314. Currently the rear (west) elevation of Portsmouth Storehouse No. 10 (1763, 1/59), which was originally the front elevation facing the North Camber, showing the new glazed entrance refurbished for the twentieth century Babcock Galleries (2014). A. Coats 2014. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 315. A rear (west) door of Portsmouth Storehouse No. 10 (1776, 1/59), facing the North Camber. A. Coats 2014. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 316. A refurbished rear pediment of Portsmouth Storehouse No. 10 (1776, 1/59), showing the access doors to the upper floor and cast iron bracket (2014). A. Coats 2014. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 317. J188/01/71. Photograph of Storehouse Nos 15, 16 and 17 (28 Apr 1971) from the west, showing the former site of Storehouse No. 14 or West Sea Store (1771), which suffered a direct hit on 24 August 1940. ©Crown copyright.HE.

Fig. 318. J188/03/71. Photograph of Storehouse Nos 15, 16 and 17 (28 Apr 1971) from the east, showing 'GR 1771' inserted in darker bricks on the east elevation of Storehouse No. 16. ©Crown copyright.HE.

North of the Security Office, turning east from Main Road, is Sunny Walk (SU 630474 005160). On its north side was **Storehouse No. 14** or **West Sea Store** (1771), a Georgian building which suffered a direct hit on 24 August 1940, demolishing its western end (TNA, August 1940, ADM1/10949). In its place a small **Electricity Sub-Station** (c.1960, 1/60, CA 22, MoD) was constructed in red brick in 1957, and to its east, space was made for a car park, very much a land-use of the late twentieth century dockyard. To the east of the car park are three fine Georgian stores. **Storehouse No. 15** or **East Sea Store** (1771, 1/62, Grade II\*, 1272262, CA 22, MoD, SU 629771 005060), **Storehouse No. 16** or **West Hemp House** (1771, 1/63, Grade II\*, 1272263, CA 22, MoD, 630361 005248), and **Storehouse No. 17** or **East Hemp House** (1782, 1/64, Grade II\*, 1272265, CA 22, MoD, SU 630999 005448). Storehouse No. 15 suffered fire damage in 1941 and all have undergone slight modifications in the post-Second World War period, notably the insertion of new larger doorways with concrete surrounds and folding doors. By 1910, Storehouse No. 16 incorporated a reading room, which in 1930 was replaced by an officers' billiard room (Lambert, 1993). Storehouse No. 16 has 'GR 1771' inserted in darker bricks on

its eastern elevation. Parallel to Sunny Walk, north of the above storehouses, is Anchor Lane (SU 630361 005391), so called because it was used to store anchors, gantry cranes being fitted above. No trace of these remains, nor of the stone setts put down in 1930 to support the anchors. A late twentieth century security gate has been erected at its western end.

Fig. 319. Arches cut through the former Portsmouth Great Ropehouse (1771, 1/65), north elevation, when it ceased making rope in 1868. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 320. Keystone (probably twentieth century) on the north elevation of the vehicular arch cut through the former Portsmouth Great Ropehouse (1771, 1/65) in 1868. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 321. AA98/04648. Portsmouth Dockyard prints FL00981. Photograph (1956) by Eric de Mare of the western gable of Portsmouth Great Ropehouse (1771), before the roof and windows were substantially altered in the 1960s. Reproduced by permission of Historic England.

Fig. 322. P96/01/60. Photograph of the interior of the Ropehouse, undergoing conversion (June 1960). Reproduced by permission of Historic England.

Lying between Stony Lane to the north and Anchor Lane to the south is **Storehouse No. 18/Great Ropehouse** (1771, 1/65, Grade II\*, 1272305 (listing shared with 1/75), CA 22, MoD, SU 630230 005510). Its location has not changed since it was built in the seventeenth century across the dockyard's widest axis. Fires in 1760 and 1770 necessitated its rebuilding *in situ*, preventing it from being moved to land to the north which had not yet been reclaimed (Coad 1989, p. 204). In 1859 the House of Commons Report of the Committee on dockyard economy and the 1861 House of Commons *Report of the Commissioners appointed to inquire into the control and management of Her Majesty's yards* led the Admiralty to introduce new steam powered machinery to increase rope production at Chatham and Devonport. In 1868, 76 Portsmouth rope makers and spinners were discharged with pensions or gratuities among a total of 2,000 discharges, the result of "reconstruction of the navy by the substitution of ironclad ships", the ropehouse locked, with its machinery still within. (House of Commons, 1859; Ryan, 2011, pp. 74-9, 86, citing the *Western Daily Mercury* 20 May, 13 June 1868; Hamilton, 2005, pp. liii, 63) The arches were cut through for access.

It appears that a 'large and interesting' Dockyard Museum was opened in the Ropehouse in 1911 by Mark E. Pescott-Frost (1859–1953), Secretary to the Admiral Superintendent. Aberg cites the 'Dockyard Museum then [1924] held in the "Old Ropewalk"' (2005, pp. 360, 363; NMM, SNR/7/2, 7 March 1924–9 July 1924). After Pescott-Frost's retirement in 1919, and according to Robert Sutherland Horne, the collection was dispersed to other museums or destroyed.<sup>6</sup> (PNBPT; National Portrait Gallery; TNA, 1964–65, CM 1/163) McMurray states that it received around 17,000 visitors a year, but was closed during the First World War. After the war it declined and it was decided by the SNR during discussions about the new Victory Gallery that this should supercede the Dockyard Museum, with 'a substantial number of Dockyard Museum artefacts' being incorporated. (McMurray, 2012, pp. 24-5) David Pulvertaft cited Douglas Owen's 1913 articles on figurehead collections which referred to "Mr Frost's delightful little museum", the contents of which had also been catalogued and form the basis of today's collection at the Royal Naval Museum.' He noted that 'the museum was founded in 1906–10' and its catalogue was published by Pescott-Frost in 1911. Pulvertaft further recorded that the *Royal Sovereign* (Queen Victoria) and *Frederick* (Frederick, Duke of York, second son of George III) figureheads 'stood originally just inside the entrance to the Dockyard Museum but in the 1920s were moved to HMS *St Vincent*', where they had decayed by 1957. (Pulvertaft, 2009, pp. 77, 81, 86) Further clues to the location of the museum are given in three postcards dating from c.1911–12 (**Fig. 304**). They show the two figureheads at the

<sup>6</sup>Horne noted that the Works Department had a collection of old plans stored in the Pigeon Loft. In 1939 a selection was made of which should be kept, stored in the Area Office of the Ministry of Public Buildings and Works in the Dockyard; the rest were destroyed. (TNA, 1964–65, CM 1/163) He 'worked as an architectural assistant in the drawing offices of the Department of the Civil Engineer-in-Chief, Navy Works Department and Ministry of Public Building and Works at HM Dockyard Portsmouth and nearby establishments, circa 1954–1971.

foot of a staircase and indicate a location in one of the three Georgian storehouses; the beams, wooden columns and the stair newel need to be compared with what survives. (G. Malcolmson Collection).

In 1953 The Ropehouse's reconstruction was a priority, as its floors could not take 'sufficient weight for economical storage.' It became the subject of a Major Works Programme 1957–58 to reconstruct it for SNSO. (TNA, ADM 1/26499) Five new entrances with folding doors were added to both the north and south elevations in 1960 and very large entrances were inserted at the western and eastern ends. All the dormer windows have been removed and a new roof constructed, also in 1960. A plaque records: 'N<sup>o</sup> 18 STORE 1095 FEET LONG ORIGINAL ROPE HOUSE BUILT ABOUT 1655 REBUILT THREE TIMES AFTER FIRES IN 1760, 1770 AND 1775 MODERNISED AND REROOFED 1959–1961'. The length is significant within the context of intra-dockyard rivalry. Plymouth's 1774 Ropehouse was 1200 feet long and Chatham's 1792 Double Ropehouse was 1128 feet long (Coad, 1989, pp. 197, 215). Effectively the exterior structure is only a skin for the interior steelwork which bears the weight of the machinery within. In 2014 it was in use as a workshop and to store HMS *Victory*'s masts while her hull is refurbished.

East of Storehouse No. 17 is **St Ann's Church** (1785, 1/66, Grade II, 1386817, CA 22, MoD, SU 63171 00567). Air raids on 17–18 April and 3 May 1941 badly damaged the west end, roof beams and east window:

The first, in April 1941, demolished the north-west corner of the church. A fortnight later, blast from a second bomb entered the open space at the west end and caused further damage inside the church. Two days later small pieces of brick and other materials began to fall from the west wall, and later another part tumbled to the ground, taking with it main roof beams and the belfry. (HE NMR, 1738/41)

The west end was clad in corrugated iron until 1955, repaired by A. E. Cogswell and Son, supervised by M. J. Dew and Mr Hodgeman, using the original drawings, with new drawings by Diana V. Cundall but sixteen feet shorter. The ceiling rose survived the bombing. Fragments of the east window were reused in a memorial fanlight shield by Hugh Easton over the north door. A new east window was designed by Easton showing a bird's eye view of the dockyard in 1945, funded by an appeal through the *News* and an Admiralty grant, dedicated in 1947. The Chaplain's offices were built in 1961. (Lambert, 1993; Smith, 2001, pp. 12-14, 16-18) Together with Devonport Naval Barracks HMS *Drake* Chapel of St Nicholas (1905–7, Grade II, 1386364), it still holds services.

Fig. 323. E 48/39. Detail of the west elevation of St Ann's Church, Portsmouth. Reconstruction Drawing 1939, signed Diana V. Cundall. Reproduced by permission of Historic England.

Fig. 324. E 48/39. Detail of Cupola, St Ann's Church, Portsmouth. Reconstruction Drawing 1939, signed Diana V. Cundall. Reproduced by permission of Historic England.

**Short Row Numbers 10-14** (1787, 1/68-1/72, Grade II\*, 1244549, CA 22, MoD, SU 63207 00616) are five terraced houses designed by Thomas Telford for dockyard officers of a lower rank than those living in Long Row, built of local red brick in the angle of Bonfire Corner. Two cast iron lamp standards in front bear the inscription 'VR 1865'.

***Inhabitants 1910***

- No. 10 Master Rigger
- No. 11 Electrical Engineer
- No. 12 Chief Boatswain
- No. 13 Naval Stores Officer
- No. 14 Command Surgeon

***Inhabitants 1993***

- FO Royal Yacht
- COS to CNH
- Commodore HMS *Nelson*
- MG Royal Marines
- Captain of the Port (Lambert, 1993; HMNBPR, 1992)

The Commissioner/C-in-C's Stables and Coach Keeper's Quarters dating from 1740 or possibly earlier, became the ex-Photographic Section Laboratory (closed) (c.1740, 1/121, Grade II, 1244550, CA 22, MoD, SU 63187 00687). A garage has replaced part of the stables. It is next to a hole made c.1960 in the original dockyard wall to give access to the two Central Office Blocks 2/11 and 2/10; COB1 was built in 1965; COB2 in 1972.

At the east end of the Ropehouse on the north side is a covered, vaulted passageway over Stony Lane (SU 630315 005716) linking it to the **Hatchelling House** and **Hemp House** or **Store No. 19** (1771, 1/75, Grade II, 1272305 (shared with 1/65), CA 22, MoD, SU 631518 006360). In 1993 the Hemp House contained the Naval Base Badminton Court (Lambert, 1993).

To the west along Stony Lane is the red brick **Telephone Exchange** (1910, 1/76, CA 22, MoD, SU 630896 006173), extended once by 1924 and on three more occasions since then, as the use of this means of communication has grown. Reflecting the importance of the Exchange is its staggered entrance, designed to minimise damage from bomb blast.

Fig. 325. PK318/10. Photograph of the Fire Station personnel, police and divers on Parade (c.1900). HE. Reproduced by permission of Historic England.

Fig. 326. AA034962. Photograph of Portsmouth Fire Station (former water tower), north end looking south, with the Ropehouse in the background (2005). ©Historic England.

Fig. 327. Original corrugated iron and fittings inside Portsmouth Fire Station (1843, 1/77). A. Coats 2012. Reproduced with the permission of the MoD.

Next to it is the **Fire Station** (1843, 1/77, Grade II, 1272306, CA 22, PNBPT, SU 630704 006224), used to store Portsmouth Royal Dockyard Historical Trust Support Group artefacts, having lost its water tank in 1950. In 1981 the building housed a telephone exchange. The Ancient Monuments Board for England Panel on Historic Naval Bases contended that it was 'essential that the basic frame should be preserved.' (TNA, 1981, WORK 14/3301) In 1993 it housed the MoD Police Traffic Division (Lambert, 1993).

Across The Parade is the two storey **Laboratory** (1848, 1/78, MoD, SU 630058 005841) in light red brick with stone string courses and cornices, some replaced by concrete. It remained the Central Dockyard Laboratory until 1991, when it became the Occupational Health Centre, now being used by the Defence Information Infrastructure.

**Storehouse No. 21** (c.1950, 1/79, MoD, SU 630165 006204) south of Jago Road was originally a timber shed. It has notably large windows and a reinforced concrete frame with brick infill. There is an internal gantry with a safe working load of 1 ton. At present the building is empty.

Fig. 328. Rainwater hopper dated 1961, west elevation of Portsmouth Fleet Headquarters, Jago Road (1961, 1/80). A. Coats 2014. Reproduced with the permission of the MoD.

Between Admiral's Walk and Jago Road is **Fleet Headquarters** (1961, 1/80, MoD, SU 629621 006110), a four storey red brick structure whose west elevation, facing HMS *Victory*, has a Georgian air, with no less than forty-four windows. The rainwater hopper on the western elevation is dated 1961. This is the rear of the building, the east elevation having the main entrance, very much a modern affair with steps and a glazed doorway. A map of 1924 indicates that the site was then a shed for timber storage.

Fig. 329. Western entrance to a Portsmouth nineteenth century courtyard surrounded by stores and workshops (c.1850–90, 1/81) on the site of the original Commissioner's House (1666). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 330. In Portsmouth Admiral's Walk, a seven foot wide section of setts running along the north side of 1/81 (c.1850–90). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 199. Set into the south elevation of Portsmouth Building 1/81 is a dressed Portland stone or

replacement concrete plaque which reads 'Under this Stone theres a water Beer', marking an old well or water tank surviving from the seventeenth century dockyard. This would have supplied the garden to the original Commissioner's House (1666) which lay north of Stony Lane until the house was demolished in the 1780s. A. Coats 2013. Reproduced with the permission of the MoD.

The **DSG Medical and Dental Servicing Section** (c.1850–90, 1/81, MoD, SU 62975 00576) is entered from the west through double wooden gates with an embedded cannon at either side. Within the courtyard formed by the outer ring of two-storey red brick buildings is the two storey, irregularly glazed corrugated iron former Wheelwright's Shop (c.1850, 1/82). Used as such until the 1950s, this is now a store, built on the site of an earlier building. Thales workshops occupy the buildings around the central courtyard, accessed through a northern set of double gates. On the north and south sides respectively are **Latrines** 1/83A and 1/83. There is a first floor link from Storehouse No. 21 above 1/83A. In 1924 the whole complex, occupying the same footprint, comprised Workshops; the same plan shown on the 1900 HE map MD95/03034. Lambert (1993) stated that the complex was originally the site of a Deal Yard at the east end and a Mason's Yard established after the first Commissioner's house was demolished in the 1780s. By 1850 the east store was a Paint Store, with a Smithery, Joiners' Shop and Store Rooms located around the central open space by 1890. Lean-to buildings were built along the south side, in Stoney Lane, by 1880 for stores, quarters for the Fire Engine Man, Stables, and a Mortuary. The Mortuary was demolished c.1987. Along Admiral's Walk on the north side of 1/81, running for approximately fifty feet, is a seven foot wide section of setts.

**Scott Road Offices**, formerly the **Hemp Tarring House**, then the **Boiler Shop West** (1771, 1/84, Grade II, 1272313, MoD, SU 629311 005491), lie between Stony Lane and Scott Road. Part is now used as a Firearms Training Centre. At the eastern end, oriented south-north, is a smaller building (1/84A) with distinctively different architecture. It has purely aesthetic gables above three large round-headed windows at each end and a partly glazed roof. First noted on an 1807 map, called the Tar House in 1860, an 1887 map describes it as a mortuary (Wessex Archaeology, 2004); some rebuilding was carried out in the early twentieth century. It is has since 2004 stored archives of the Naval Historical Branch.

Fig. 331. Rainwater hopper dated 1931 on Portsmouth South Office Block Annexe (1931, 1/87C). A. Coats 2013. Reproduced with the permission of the MoD.

At the Main Road end of Scott Road is **South Office Block Annexe** (1931, 1/87C, MoD, SU 628843 005335). This is a single storey building in light brown brick with a pitched roof and particularly decorative window surrounds facing Main Road, creating a neo-Georgian appearance. A rainwater hopper is dated 1931. It was linked to another building attached to the Ropehouse. Almost certainly this was the original entrance, a view supported by the presence in front of a small garden with chain railing. The building was used as a Naval Stores Office and in 1992 the Command Communications Office. It is now empty. The statues of William III and Captain Robert Falcon Scott were in front of the building from before 1967 until 1999/2000, facing the three storehouses. After the Second World War, Commander Peter Scott had been 'disappointed to see his father's statue hidden by shrubs in the Parade, where it had been damaged by German bomb splinters and pigeon droppings.' In 2000 they were moved to the Porter's Garden near Victory Gate. (Pevsner & Lloyd, 1990, p. 411; Patterson, 2000, pp. 1-2)

Facing HMS *Victory* is **South Office Block** (1786, 1/88, Grade II\*, 1272314, MoD, SU 628955 005620). The west wing is one of the few buildings in the old part of the Yard fulfilling its original function. The east wing was converted from a store in the nineteenth century.

North of South Office Block and between Dock Nos 2, 3 and 4 were a number of small buildings, all removed in 2010 for the new **Mary Rose Museum**. The **Destroyer's Store** (1900, 1/92, PT) was used by the Mary Rose Trust and known as the Shiphall Workshop. The **Dock Shed** (1900, 1/93, PT) was rebuilt in 1972 and then leased to the Mary Rose Trust. The **Bath House** (1935, 1/95, PT) was refurbished in 1972 and after 1982 was a Mary Rose Trust store. Buildings 1/91-1/95 were demolished

in 2010 under Conservation Area Consent (08/02220/CON, 2009), under which Gifford recorded Buildings 1/91 to 1/94 to English Heritage Level 2 and Building 1/95 to English Heritage Level 1, to preserve by record their character and relationships to the historic development of the dockyard. (English Heritage, 2006, p. 14)

Fig. 332. 23852/25 SU 6300/79. Aerial photograph of the Mary Rose Ship Hall in Dock No. 2 from the northwest, before its redesign and the demolition of the buildings either side in 2010 (11 Apr 2005). ©Historic England.

#### Building 1/91: **Trafalgar Building**

1887–1901 - the former working shed was built (1901 OS map).

1910–1933 - a possible small extension was added to the east end (1933 OS map).

1939–1959 - it was converted to a First Aid Station during the Second World War and the Cold War, including a decontamination room in case of aerial gas attack. A basement was constructed as a bomb refuge, two storey boiler house and chimney and exit baffles to mitigate bomb damage were added.

1962–1978 - A storey was added, plus an extension to the west and an external flight of stairs to the east end projection, with an alteration to the south west extension.

Post 1978 - During 1993 the building was refurbished with uPVC windows. A suspended polystyrene tile ceiling was added in 2001. From the 1990s part of the building was used by HMS *Victory* tour guides and crew and visitors. Probably only the external walls survived from the original working shed. The basement of the east range is entered from stairs at the south east of the building. The walls are double thickness pink-brown bricks in English bond. The ceilings are concrete slabs supported by concrete beams resting on iron or steel joists. (Gifford, 2009)

#### Building 1/92: **Mary Rose Ship Hall** a former Destroyer's Store;

1887–1901 - a possible store and saw house are shown partially within the footprint of Building 1/92 on a map from 1774. There was no evidence of them above ground. No buildings are shown in the 1887 map. On the 1901 OS map they are labelled together as a Working Shed.

These buildings first appear on the 1910 OS map respectively as the Destroyer's Store and Working Shed. Elements dating from this period are English bond brickwork, bull's eye brick detailing at the gable end of 1/92, shallow buttresses, wooden framed sash windows, and riveted double fink type steel trusses.

1951–1977 - a 1962 architect's plan proposed alterations to add a hot water system: blocking up the louvre within the east gable bull's eye and adding a new door at the gable end to provide access to the new boiler. Corrugated metal roof and panelling may have been added to the elevations of 1/93 between the 1950s and 1977. By 1977 the two buildings had become one structure.

#### Building 1/94: **Latrine Block**

There were some earlier sheds on the site since at least 1910. It was constructed as a latrine between 1951 and 1962. Post 1951 or 1962 a ramp and double doors were possibly added to the north elevation. It went out of use as a latrine by the 1980s and was used for storage by the Mary Rose Trust.

#### Building 1/95: **Shower Block/shed**, a former workshop

1933–1937 - the building first appears as a wash house on the 1937 OS map.

1970–1977 - the building was altered internally with structural repairs to the south and west elevations and another door added to the north elevation with an access ramp. Architects' plans show an officers' washroom to the east and the ratings' washroom to the west; a central boiler house, drying rooms and projecting oil store. It was declared unsafe in the early twenty-first century.

For all these buildings see Gifford (2009).

On Main Road at the junction of the heritage area and naval base is a small glass-fronted and timber-backed octagonal **Security Office** (1986, 1/101, SU 629014 004604), known as Lion Gate, where permits are issued to visitors wishing to enter the Naval Base. The office was created when the steel fencing was erected in 1986 round the boundary of the heritage area as a precaution against IRA terrorism, the threat of which caused the Yard to be closed to visitors between November 1984 and January 1985 (Riley, 1987). Ironically a Health and Safety official commented that the pointed tops to the railings were potentially hazardous. A second rectangular glass fronted **Security Office** (1/102) and gate are adjacent to Victory Arena (SU 628430 005732).

Fig. 333. MD95/03099 (c.1797). Plan and Sections, Great Basin Entrance and South Dock, Plan of Improvements proposed by Samuel Bentham. HM Dockyard, Portsmouth. Reproduced by permission of Historic England.

Fig. 334. J195/01/71. Photograph of Basin No. 1 and Docks 1-5 looking east pre-*Mary Rose* and pre-Monitor HMS *M33* (28 Apr 1971). ©Crown copyright.HE.

Facing Victory Building (1/100) to the west, across Main Road, lie **Basin No. 1** (1698, 1801) and **six docks** (SAM397, 1001852/Grade I, 1272267, CA 22, SU 627961 007185) dating from between 1698 and 1803, arguably one of the finest collections of stone docks in Britain, if not in the world. Inevitably structures so elderly have been modified, but fundamentally little has changed, certainly in the twentieth century, since the modern navy has scant need for such small docks. From around 1815 until at least the 1880s, Dock Nos 3-6 had wooden roofs (Coad 1989, pp. 110-13; Hawkins, 2014). In the 1980s their future was not assured, as 'there were suggestions for a car park in the area.' The Ancient Monuments Board for England Panel on Historic Naval Bases recommended that 'they should be maintained in a reasonable condition....that those docks in the best condition should be repaired in real stone', the others to be repaired in concrete, 'provided it was done more skillfully than in the past.' (TNA, 1981, WORK 14/3301)

Fig. 335. Dock No. 1 (6.1.1909). Photograph of completed extension, looking northeast. TNA, ADM 195/79 (1857–1915). 100 photographs depicting construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

**Dock No. 1** (1801, SAM397, 1001852/Grade I, 1272267, CA 22, SU 627708 006263) has been modified at its head to maximise the space available for iron-hulled ships' bows. The extension work, consisting of shuttered concrete, was completed in 1909. On 12 August 1940 the dock wall on the south side was 'severely damaged, water and air mains severed.' (TNA, ADM 1/10949) It was evidently hit again on 10 March 1941, a section of the upper vertical wall on the south side near the dock head being demolished (photograph held by NMRN). The dock was finally closed in 1984. Compressed air capstans, dated 1902 and 1911, are located at the entrance, but in fact the dock has been cut off from the Harbour following the construction of Victory Jetty as a berth for naval vessels in the 1990s. Before this took place the First World War monitor, *M33*, later named HMS *Minerva*, owned by Hampshire County Council, entered the dock, where it was refurbished and opened briefly to the public. It has been refitted in a joint project with the National Museum of the Royal Navy to mark the 100th anniversary of the 1915 Gallipoli campaign (National Historic Ships Register), opening to the public as HMS *M33* in 2015.

**Dock No. 2** (1802, SAM397, 1001852/Grade I, 1272267, CA 22, SU 628477 006170) is the least altered of the group, partly because since 12 January 1922 HMS *Victory* has been positioned within, a concrete



lock gate sealing off what is a permanently dry dock from the Basin. The pattern of the stone steps on the floor of the dock may be seen thanks to the location of *Victory* on a cradle which equates her level at sea with that of the surrounding quayside. To the east of the dock were sited a two storey, narrow **Amenity Centre** (1935, 1/91, q.v.) for staff serving on *Victory*, and associated buildings 1/921-1/95 already described, demolished in 2010 to create space for the new approach to the *Mary Rose*. A cast iron lamp standard inscribed 'VR' is close to the dock on the southeast corner.

Fig. 336. Cross-section of *Mary Rose* within Dock No. 3 (1803). Wilkinson Eyre Architects, 2012.

Fig. 337. Lower ground floor plan of *Mary Rose* within Dock No. 3 (1803). Wilkinson Eyre Architects, 2012.

Fig. 338. Western profile of the new timber-clad *Mary Rose* Museum at Portsmouth (2013). A. Coats 2013. PNBPT. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

**Dock No. 3** (1803, SAM397, 1001852/Grade I, 1272267, CA 22, SU 628908 006726) was at one time covered with a wooden roof. In 1859 the shipwright officers advised retaining the roof, since it "is the only dock at this yard suitable for extensive repairs to large ships." The Surveyor, Sir Baldwin Wake Walker, concurred. But this had been removed by 1910, when such roofs were considered unnecessary for working on metal ships. The dock head was lengthened in 1858, making it 263 feet 6 inches long, with further length to be added at the stern. In June 1859 the Director of Works, Col. G. T. Greene, agreed that a caisson would be substituted for the gate. (Hamilton, 2005, pp. 48-9) In 1982 the dock became home to the hull of the *Mary Rose*, which was then enclosed within a temporary structure.

An Archaeological Watching Brief commissioned by the *Mary Rose* Trust investigated 'various large stone-built dock-side structures, both contemporary with, and post-dating the Dry Dock itself,... along with a stone-built drainage culvert that may pre-date the dock.' (Watson, 2011, p. 4) Technically innovative mortar dating from 1799–1803 has been noted in Part 1. The archaeologists found that in 1924 'the upper altars of the south wall were in-filled with mass concrete to facilitate the construction of a platform to support crane rails' and in 1934 the dock floor was reconstructed with an *in situ* concrete floor slab. *Mary Rose* and her support frame were placed in the dock in 1983, supported by a 'number of brick and concrete plinths' resting on the dock floor and altars, and a lightweight roof was built to cover the ship. In 1989 a permanent concrete dam replaced the ship caisson. (Watson, 2011, pp. 13-15, 61)

The new *Mary Rose* Museum (2013) fits within the 'geometry of the dry dock where the *Mary Rose* is berthed', fittingly close to where her keel was originally laid in 1509. Engineers Bouygues Warings, with ECE Architects and CSC Engineers, placed the main steel structure on four piled supports outside and spanning the dock, producing a low building, with a lighter internal frame bearing partly within the dock. (AJ Buildings Library, 2012; *Mary Rose*, Portsmouth Historic Dockyard, 2013; *Current Archaeology*, 2013; Jackson, 2013; Ijey, 2013) The hull's 'toroidal geometry' generated Wilkinson Eyre's elliptical ship hall. Pringle Brandon Perkins+Will designed the museum 'from the inside-out', with intentionally claustrophobic galleries and inclined walkways. The north and south pavilions housing ancillary functions have been criticised as "boxy limpets", lacking the strength of the hall and limiting views to the waterfront, although Mara considers that the curves encourage 'the eye to look around and beyond' the building. Its considerable internal volume and void will be environmentally controlled until the water has been removed from the hull in 2017. Ijey perceives the "black hole" profile' as a 'void', and reflects that the 'restrained architecture...creates a palpable and compelling sense of absence', but to Mara it is a 'bulky sarcophagus-like volume'. Its external black carvel planking to Wainwright evokes the 'timeless, primitive sense of an ancient vessel'. (CABE, 2009; Wainwright, 2013; Ijey, 2013; Mara, 2013) The timbers are 'stained black to reflect England's vernacular boat shed architecture. Inscriptions drawn from the ciphers used by the crew of the *Mary Rose* to identify their personal belongings have been carved into the shell.'

New Mary Rose Museum Statistics:

Architect: Wilkinson Eyre Architects

Interior Architects: Pringle Brandon

Exhibition Design: Land Design Studio

Structural Engineers: Ramboll

Mechanical & Electrical Engineers: Ramboll

Area: 4,500m<sup>2</sup>

Value: £27m

Completed: May 2013 (Wilkinson Eyre, 2013)

**Dock No. 4** (1772, SAM397, 1001852/Grade I, 1272267, CA 22, SU 628824 007220) was in 1859 extended at the head to 263 feet 6 inches and further lengthened at the stern, with a caisson to replace the gate. The roof required extensive repairs so the Director of Works, Col. G. T. Greene ordered it to be removed. (Hamilton, 2005, pp. 48-9) The dock was further modified by the construction of a travelling crane on its north side; since these devices were not introduced until after the First World War, this was probably interwar. In order to give the crane jib maximum reach, the top five steps of the dock side were blocked with concrete and one of the crane tracks was built above it, making the dock sides asymmetric. One of the tracks is still visible. The dock was closed in 1983. During the First World War an emergency electric power station was built on the north side of the Dock; the engine was a Ljunstrom steam turbine (Anon, 1929, p. 20).

Erected between Dock Nos 4 and 5 was a **Dock Shed** (c.1900, 1/99, PNBPT, SU 628580 007463), becoming a store in 1913 and much later in 1990 used as a workshop by the HMS *Minerva M33*/Restoration Team. Free space between these docks is allocated to car parking.

**Dock No. 5** (1698, SAM397, 1001852/Grade I, 1272267, CA 22, SU 628855 007688) had its timber roof removed c.1910, while the head was slightly extended eastwards to accommodate the bows of metal vessels, probably at the same time. A travelling crane was built into the north side, the top three steps forming the concrete base for one of the tracks. The dock was closed in 1983.

Fig. 339. Portsmouth Dock No. 6 (1700), showing disintegration of the lower altar stones through weathering. Following the straightening of the western jetties for the new *Queen Elizabeth* class aircraft carriers in the early 2000s, it is no longer connected to the harbour and no longer has the environmental protection of seawater. A. Coats 2012. Reproduced with the permission of the MoD.

**Dock No. 6** (1700, SAM397, 1001852/Grade I, 1272267, CA 22, SU 627961 008166) closely retains its eighteenth century form since the proximity of its head to the Block Mills (q.v.) militated against it being lengthened by more than few yards, again in shuttered concrete. It had a wooden roof from at least 1832 until after 1875 (Coad, 1989, pp. 110, 113). The rebuilding of Sheer Jetty (1800–4) in the 1990s resulted in the dock losing its access to the harbour; it is now an isolated structure since its closure in 1984, protected only by its listed status. Re-use for such a structure is not apparent. As the stonework is no longer submerged in water it is exposed to weathering by sun and frost and the lower altar stones are disintegrating: 'The dock is suffering from rotation and mortar joints on the stonework altars on the north side have opened up.' (English Heritage, 2013, *South East Heritage at Risk Register*, p. 72)

In comparison with the surrounding docks, **Basin No. 1** (1698, 1801, SAM397, 1001852/Grade I, 1272267, CA 22, SU 627961 007185) has been little altered since its 1801 extension. The chief change has been the removal of fixed cranes, a travelling crane on the north side, the 25 ton capacity sheer legs on the west side, one of whose base plates survives, and the 30 ton capacity sheer legs on the harbour side. The sheer legs were scrapped c.1920 and replaced with cranes. There were also travelling cranes on **Pitch House Jetty** (1690–1700) (where some pitch houses remained until c.1910) and Sheer Jetty giving on to the harbour, respectively south and north of the entrance to the Basin.

**Sheer Jetty** (1800–4), also known as Masting Sheers Jetty in c.1830, was extended westward into the harbour in the 1920s and 1930s beyond the sea wall, using reinforced concrete; it was further extended c.2000 and is now termed **Victory Jetty**, blocking the former entrance to Dock No. 6. The entrance to the Basin may have been retained, but the new linear jetty on the seaward side of this area of the yard is indicative of its function – no building, no repairing facilities; simply berthing accommodation. **Boathouse Jetty** lay between King's Stairs and Dock No. 1. When Basin No. 1 was extended to the south in 1790–1810, and the three storehouses had been built, it may have referred to the boathouses west of Storehouse No. 11. At the northwest corner of the yard, **North Railway Jetty** (1780, 1790) was rebuilt in stone in 1790 to form the entrance to the new North Camber. It became North Railway Jetty when the yard's line was extended there in 1870. (Lambert, 1993) In the 1760s four slips and jetties were built on reclaimed land, a fifth in 1845. Around 1900 the slips were modified for the rearmament programme, producing **South, Middle and North Slip Jetties**.

North Wall Jetty extended along the northern face of the reclaimed land as far as the first entrance into Basin No. 2. After 1876, when the entrance to Basin No. 2 was re-sited, it was renamed **North Corner Jetty**, its continuation forming the southwest wall of the Tidal Basin, which became **South West Wall**. **South Wall Jetty** (1840s) runs along the south of the Tidal Basin between Basin No. 2 and Dock No. 9. **North Wall** (1863–72) opposite was originally the south side of the old Coaling Point; it is now the north side of the Tidal Basin, '70 ft from cope to cope'. Movement was observed in 1891 and recorded regularly, although the report stated that the recordings had not been correlated. In 1949 it was decided to strengthen the wall by a large shingle bank and restore berths lost by wartime bombing by a reinforced concrete slab jetty supported on pre-stressed concrete piles, to carry cranes, railways and services. This was carried out in four stages between the early 1950s and 1963. (TNA, CM 1/277) **North West Wall Jetty** (1867) was originally the side of the Fitting Out Basin No. 3; it now forms the northwest side of a reduced Pocket in Basin No. 3. When **Fountain Lake Jetty** (1867) was completed it included a north entrance into Rigging Basin No. 4. This was closed c.1912 when access to Basin No. 3 was through C and D Locks. The jetty was widened to accommodate travelling cranes. (Lambert, 1993) It was hit by a bomb on 24 August 1940, demolishing thirty feet of masonry (TNA, ADM 1/10949).

Fig. 340. Portsmouth Joiners Shop 3.2.1911. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

Fig. 341. Portsmouth Victory Building 1/100 (Feb 1992). BAES. The [former] Site. Defence Works Service (Nov 1991). Option Study Annex A. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth. Reproduced with the permission of the MoD.

Fig. 342. Portsmouth Victory Building 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, Location of New Building. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

Fig. 343. Portsmouth Victory Building. 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, west, south, east elevations. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

Fig. 344. Portsmouth Victory Building 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, north elevation. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

Fig. 345. Portsmouth Victory Building 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, plan. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

Fig. 346. 15800/32 SU 6200/16. Aerial photograph of the Victory Building from the southeast (9 Sept 1997). ©Crown copyright.HE

Fig. 347. One of the concrete entrance piers, east of Portsmouth Victory Building (1993, 1/100), dated 1984. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 55. East-facing neoclassical portico of Portsmouth Victory Building (1993, 1/100) incorporating the lion and the unicorn from two of the dockyard gates. A. Coats 2013. Reproduced with the permission of the MoD.

Lying between the docks and The Parade, the wide space between the front of Long Row and the four great Georgian storehouses has undergone considerable late twentieth century alteration. It was used originally for timber storage and associated saw pits. Subsequently another **Joiners' Shop** (1911, 1/107) and a **Timber Storehouse** (1894, 1/115) were erected. The latter ran parallel to Main Road and was unusual in having a rail-side raised platform to facilitate movement to and from wagons. Other edifices such as a Medical Records Store (1939, 1/110), a Mould Loft (1891, 1/119), an Amenity Centre (1966, 1/112), and a Surgery (1902, 1/116), approximating 9,877m<sup>2</sup> overall, have been replaced by **Victory Building** (1993, 1/100, MoD, SU 629727 007191), none of the former deemed to have been of 'any architectural or historic interest'. The headquarters of the Naval Base Commander was designed by Scott Wilson Kirkpatrick to 'emulate the naval architecture of neighbouring historic buildings', the foundation stone being laid in 1992. It is a modern neoclassical three storey steel-framed office complex aligned north-south in an H plan, with three internal courtyards including a fish pond. The pitched roof is of Welsh slate and its bricks have the colours light red and blue merging, causing the new building to stand out from the surrounding Georgian reds. The main entrance faces east towards The Parade, the doors beneath a large reconstituted stone pediment bearing a low relief of a lion and a unicorn and supported on reconstituted stone columns. Both the north and south elevations boast twin pediments, as does that facing west over Basin No. 1 (q.v.), bearing fouled anchors, white painted pilasters being much in evidence. First floor storey-height sash windows disperse natural light throughout the building. Testifying to contemporary workers' transport is a car park at the front, taking up an area similar to the building itself. The date on the entrance pier is 1984, indicating an earlier design phase. (BAES, Unicorn, Nov 2001, Technical Inspection Report, pp 2, 8; BAES, 13 Dec 1995, MSG Study 09/95/01, Plans and elevations)

To the north of Fleet Headquarters in Jago Road and Storehouse No. 21, bounded by Jago Road (SU 630032 006307) on the south and Murray's Lane (SU 629935 008135) to the north, are located four Georgian buildings forming a rectangle, all with similar characteristics: rectangular in plan with a central covered yard, around which were small workshops, giving the appearance of a flatted factory. That to the south-west is **Storehouse No. 24** (1789, 1/117, Grade II\*, 1244580, CA 22, MoD, SU 629696 006516); it originally included a mould loft, but in 1930 was substantially altered by the addition of an upper storey and converted internally in 2004 to house the MoD Admiralty Library, Naval Historical Branch, Portsmouth. Contractors working in the central courtyard in 1984 revealed a cobblestone floor. To the south-east **Storehouse No. 25** (1786, 1/118, Grade II\*, 1244578, 1244578, CA 22, SU 630283 006554) had a mould loft on the upper floor, operational until the 1980s. Twentieth century buildings in the courtyard were demolished in 2011 (Bolger, pers. comm. 2013). It is reported to be 'In fair condition but vacant. Future use uncertain.' (English Heritage, October 2013, p. 72) The original roadway separating the stores has been covered by a concrete slab and a one storey link.

Fig. 348. J198/01/71. (28 Apr 1971). Photograph of Storehouse No. 25, southwest corner. ©Crown copyright.HE.

Fig. 349. J198/04/71. Storehouse No. 25 doorway (28 Apr 1971). ©Crown copyright.HE.

Facing the storehouses and The Parade are **1-8 Long Row and Mountbatten House** (1715–19, 1/124-1/132, Grade II\*, 1272307, CA 22, MoD, SU 63095 007720), a terrace of nine very fine houses built to house the Principal Officers who were previously scattered elsewhere in the dockyard (Coad, pp. 52-4; HE, MD95/03034). They were stuccoed in the early nineteenth century. In 1832 the southernmost house, now called Mountbatten House, was enlarged for the Admiral Superintendent and its entrance moved to face south. In the garden is an **Icehouse** (1/119, MoD, SU 63117 00648). *Hampshire Treasures*

(1986, p. 43) dates this to c.1840, stating that ice was brought from the Baltic each spring and that it was used as an air raid shelter in the Second World War. It now contains toilets. The NDS suggests that it could originally have been the mound at the end of the first Commissioner's garden upon which William III's statue was first displayed in 1718. Nos 1-8 were converted to office use c.1990.

**Occupants 1910****Occupants 1993**

1 Captain of the Yard	FOSF Residence
2 Manager Constructive Department	FOSF Offices
3 Manager Electrical Department	FOSF Offices
4 A/Captain of the Yard	FOSF Offices
5 Electrical Engineer	FOSF Offices
6 Constructor	FOSF Offices
7 Commander in Chief's Secretary	RN Positive Vetting Unit
8 Admiral's Secretary	RN Positive Vetting Unit
9 Admiral Superintendent	Flag Officer Portsmouth (Lambert, 1993)

On The Parade are three cast iron lamp standards dated 1845 (*Hampshire Treasures*, 1986, p. 43) To the east at the rear of Long Row the **Top Deck Canteen** (1/134) was built in 1973 to serve the adjacent Central Office Blocks. It was demolished in 2005 due to structural defects in the concrete (Bolger, pers. comm. 2013).

Fig. 350. Portsmouth Iron Foundry and Subsidiary Buildings, Basement and Ground Floor Plans, BAES. MPBW (June 1964). 1/136 and 1/140. Drawing no. 980/64. Reproduced with the permission of the MoD.

Fig. 351. Portsmouth Iron Foundry Structural Appraisal, First Floor Detail section drawing. 1/136. BAES. Evans Grant via Unicorn (Feb–Apr 1997). Reproduced with the permission of the MoD.

On the south side of Victoria Road, in an architectural style matching the Iron and Brass Foundry (q.v.) and the Post Office (q.v.), and contiguous with the latter, is the **Gunnery Gear Store and Pattern Shop** (1857, 1/136, Grade II\*, 1272310 (shared with 1/140), MoD, SU 631594 008265), the east wing of the Iron and Brass Foundry. It remains unused and at risk due to water ingress. (English Heritage, 2013, *South East Heritage at Risk Register*, p. 71) By 1930, pattern-making had been moved into the upper floor of the south-western part of the Iron and Brass Foundry, whose roof beams are dated 1875, the building becoming a Dining Room, although pattern making was still operation in 1983. Evans Grant reported 'We understand that the last smelting in the Foundry took place in 1983 with machinery being shipped out in 1984.' (BAES, Evans Grant, Feb 1997, Structural Survey, p. 2) It is now termed the Auto Control Workshop. A survey carried out in 1997 found that first floor timber joists rested on 100mm thick brick arches supported by primary steel plate girder beams and secondary cast iron beams. Water was penetrating the west elevation. (BAES, Evans Grant, Feb 1997, Structural Survey, pp. 4-5)

Fig. 352. Former Portsmouth Chief Inspector's Office (1857, 1/138) at the western side of the first Marlborough Gate, adjoining the original Dockyard Wall (1711). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 353. Cannon protecting the northeast corner of the former Portsmouth Chief Inspector's Office (1857, 1/138). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 354. Western gate pier of the first Portsmouth Marlborough Gate (1711, 1/138). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 355. Plinth bearing a broad arrow at the base of the western gate pier of the first Portsmouth Marlborough Gate (1711, 1/138). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 200. Ivy Lane runs east-west between the north side of Portsmouth Long Row Officers' Houses (1715–19, 1/124-132) and the south of the Iron and Brass Foundry (1854, 1/140), then turns north following the west side of the 1711 dockyard wall, meeting Victoria Road. A. Coats 2013. Reproduced with the permission of the MoD.

Some original structures remain of the early Victorian Yard, in some cases a consequence of listing. On the eastern side of Marlborough Road, attached to the original dockyard wall, is the small, square in plan, two storey building known as the **Whitley Rooms** (1857, 1/138, Grade II, 1272309, MoD, SU 631825 008399), also known as Ivy Lane Cottage. This was the Chief Inspector's office at the western side of the original Marlborough Gate. A notice outside describes it as gunnery gear store, but since the entrance doors are narrow – one being stepped – it can hardly have been a conventional store. It is now empty. The pillar on the east elevation bearing a broad arrow on its plinth may have been the gate pier to which the gate was fixed. The building on the east side of the gate, constructed in 1848 and later used as a drawing office, was demolished in 1955.

On the north-east corner of the Iron Foundry is the former **Marlborough Gate Post Office** (1857, 1/139, MoD, SU 631622 008427), sited there from c.1905 to 1990. Marlborough Gate, termed Factory Gate in 1854, was relocated further south to Bonfire Corner in 1944, after which the premises became trades union offices.

Fig. 356. West elevation of the refurbished Portsmouth Iron and Brass Foundry (1854, 1/140), now BAES HQ. A. Coats 2012. Reproduced with the permission of the MoD.

To the east of The Parade is the monumental **Iron and Brass Foundry** (1854, 1/140, Grade II\*, 1272310 (shared with 1/136), MoD, SU 631244 008193). In 1956–58 the Modernisation and Development Programme planned to demolish and reconstruct it on the same site to 'Conform to new Foundry Regulations' and 'modernise for efficient output.' It noted that if this were not carried out, the Foundry would have to be extended into the Post Office site and improvements would need to be made to the cupola furnaces (TNA, 1956–58, ADM 1/26499). This was not carried out and it closed in 1982, becoming **No. 35 Store**. The original building housed (Lambert, 1993):

- 140A Sailmakers/Laggers' workshop and offices
- 140B Lay-apart Store
- 140C Workshop
- 140D Store
- 140E Pattern Trimming Shop
- 140H Liferaft Repair Shop
- 140J Patternmakers' Workshop

Later were added:

- 140K Telecom Test House 1948
- 140L Paint Store 1939
- FM2 Store 1939

The foundry was modified in 2011 by the removal of external pipework, wall crane, and stairways and restoration of inner brickwork and ironwork in conversion to BAE Systems offices, with appropriate glazed entrance doors to The Parade.

To the south of Basin No. 2, across Victoria Road, is the **Brass Foundry/34 Store** (1848, 1/142, Grade II, 1272308, MoD, SU 630410 008355), now a store/office, with no trace of its original function, although the gantry crane is dated 1860. It is named the Lancelot Building, for the Commodore Portsmouth Flotilla. It has concrete cills with some granite and some brick footings, and three double metal

doors inserted into the northern entrances. The **Steel Foundry** (1925, 1/143, MoD, SU 630063 008355) is a relatively small single storey brick edifice with structural steel by Dorman Long, sporting an interior gantry crane, but now used as a store. At its closure in 1983 a 3-phase electric arc furnace was still in place. Outside in Murray's Lane until 1985 remained one of the yard's railway turntables by Kilmarnock Engineering, the solution to the problem of moving railway wagons in and out of buildings where there was insufficient space for curved rail track. It has plaques bearing the date on each end of the south elevation. To the east of the Brass Foundry is the Georgian **North Office Block, Main Road**, (1791, 1/144, Grade II, 1272311; **Victoria Road** (1791, 1/144, Grade II, 1272312, MoD, SU 629586 008354), which in 1993 took staff from the COBs.

Fig. 357. Storehouse No. 33 before reconstruction after fire 23.3.1908, photograph no. 99. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

Fig. 358. Wrought iron lamp bracket on Portsmouth Storehouse No. 33 (1786, 1/150). A. Coats, 2013. Reproduced with the permission of the MoD.

The north-eastern of the group of four Georgian storehouses is **Storehouse No. 34** (c.1786, c.1955, 1/149, MoD, SU 630246 007904), originally a Joiners' Shop. It was badly damaged in 1941, the only part considered to be worth saving being the ground floor on the south side, above which a new storey was built. The remainder of the site was rebuilt as a single storey in matching architectural style with that on the south side. The whole is now used by BAES for non-magnetic bulk parts. On the south side of Murray's Lane is the north-western of the four storehouses. **Storehouse No. 33** (1786, 1/150, Grade II\*, 1272289, MoD, SU 629652 007885) suffered a fire in 1908 which appears to have gutted the top floor. A picture was taken after the fire and before reconstruction (TNA, 23.3.1908, ADM 195/79, photograph no. 99). It was given an additional floor in 1939 with a steel frame and reinforced concrete slab floor. It was damaged on 24 August 1940, blast and flying debris causing damage to nearby buildings, estimated to cost £11,000 to clear and repair:

the bomb pierced the slate roof and concrete slab and, bursting on the first floor, blew the walls out and thus collapsed the building as the R.C. slab broke up into very large areas as much as 10' and 20'. A length of approximately 70-ft from the West end was completely demolished to ground level (TNA, ADM 1/10949)

In 1981 the Ancient Monuments Board for England Panel on Historic Naval Bases noted that it was being used for flagmaking, employing an 'old manually operated rope-making machine' which was '18<sup>th</sup> century and could well predate the machinery at Chatham Ropery.' The Panel urged that it be recorded, 'this being the sort of object which could easily be scrapped when it became redundant.' (TNA, 1981, WORK 14/3301) It was formerly the office of the Yard Services Manager; it is now occupied by Defence Estates. An oil lamp bracket lingers above a door in Murray's Lane, indicative of the means of lighting before the advent of electricity.

From the foregoing it is clear that while Georgian buildings dominated what may be termed the Georgian dockyard, nineteenth and twentieth century buildings are also present. By the same token a small number of eighteenth century structures are found north of the old shoreline which represents the southern margin of the early Victorian yard marked by Victoria Road. In fact three building slips were constructed on made ground north of the shoreline, known as North Corner, between 1764 and 1784. The early Victorian yard is the area associated with the Steam Basin, constructed in 1848 as the navy began to switch to steam-driven vessels.

The area north of Victoria Road and west of **Basin No. 2** or **Steam Basin** (1848, SU 630205 010079), terminating at **North Corner Jetty**, has undergone more fundamental changes than elsewhere in the dockyard. Whereas most of the buildings in the Georgian yard have lost their original use, but have been retained largely consequent upon their listed status, this part of the yard possessed only four such structures, making it possible for virtually everything else to be cleared after the 1981 Fleet

Review (Secretary of State for Defence, 1981). Chiefly because of the growing reliance on nuclear submarines, the review scaled down the number of surface vessels, reducing the need for repair facilities, resulting in the concentration of activities in the more modern parts of the yard to 'retain a large and versatile ocean-going surface fleet.' Royal Navy numbers were to be reduced by 8,000-10,000 by 1986, and UK civilian jobs by 15,000-20,000 (Secretary of State for Defence, 1981, pp. 8, 12, 13). The principal function of the area is now that of a car park, the use of motor vehicles dramatically contrasting with earlier years when pedalling dockyardmen would dominate surrounding Portsea roads at in- and out-muster times.

North of Victoria Road and the West Pumping Station were **Dock No. 7** (1849) and **Dock No. 10** (1858), infilled in 1989 and 1993 respectively, their former presence signalled by iron bollards bearing the letters 'VR' by the side of the road. A bomb struck the ground and pierced the brick arch of the vaults beneath Dock No. 7 on Saturday 24 August 1940. The Admiral Superintendent reported: 'Little structural damage was done, but as the vault was used as a shelter, there were casualties to personnel.' (TNA, ADM 1/10949)

Fig. 359. MD95/03057. Ordnance Survey, Hampshire Sheet LXXXIII.7.8. HE (1893–94). Plan of Jetty at North Wall, HM Dockyard, Portsmouth, showing North Corner at the beginning of the twentieth century. Reproduced by permission of Historic England.

Fig. 360. Damage to Portsmouth No. 1 Slip Jetty looking east, 1.2.1915, with the Smithery and the Steam Factory in the background. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

Fig. 361. Portsmouth No. 2. Slip and S. Side Laying Out Shop looking west, 1.2.14. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

North of Dock No. 10, which gave into the harbour, was the small **Slip No. 1** (1764), rebuilt by 1925 as a Steel Store. To the north again was **Slip No. 2** (1764, c.1890), a much more substantial affair used later for hauling up torpedo boat destroyers rather than building. Jetties 'between the slips were built or extended in 1863 and 1868' (Hamilton, 2005, p. 51). At the head of Slip No. 2 was an 1896 steam-driven winding engine built by Cowans Sheldon inside a corrugated iron shed. There were two iron tracks for the cradles whose emergency brake was the tried and tested ratchet acting on a central toothed rail. The whole was demolished in 1979.

Next in a northerly direction was **Slip No. 3** (1784), adjacent to **Slip No. 4** (1838); they were covered by an interconnected metal roof of 1845–46, thought to have been the widest iron span roof in Britain at the time. As the size of ships increased, these structures' use as building slips diminished and, c.1900, the slips were filled in, the seaward ends being blocked off from the harbour, becoming **Ship Shop Nos 3-4**. Important as the roof was in construction engineering history, it was not listed, resulting in its destruction in 1980. It was argued that a better example was to be found in Chatham Dockyard.<sup>7</sup>

Fig. 362. MD95/03032 (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing based on 1850 map showing changes in yellow and later buildings in red dotted lines. Section showing Portsmouth North Corner showing Slip No. 5 enlarged in 1912 and Dock No. 5 infilled in 1898. Reproduced by permission of Historic England.

Fig. 363. HM Dockyard Portsmouth Harbour (1907–12), showing North Corner changes made to

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<sup>7</sup>J. Coad remembers being told that proposals to relocate Ship Shop Nos 3 and 4 to a northern industrial museum had to be abandoned when a structural survey revealed that the iron frames were largely crystalline and would fracture into little pieces if disturbed. Fortunately the Chatham examples were not in a similar state. (Coad, pers. comm., 13.12.2014)



Slip No. 5 for building *Dreadnoughts*. Defence Estates Plans. Scale 1:2500. AdL, Vz 14/115 (1897–1907). Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

Fig. 364. MD95/03045 (1930). Western Frontage Plan for Proposed Reconstruction, HM Dockyard Portsmouth. Reproduced by permission of Historic England.

Fig. 365. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. North Corner from the west. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 366. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. North Corner from the south. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 367. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. North Corner from the north. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 368. J297/06. Photograph of Ship Shop Nos 3-4, south of Slip No. 5, before their demolition in 1980 (23 June 1971). ©Crown copyright.HE.

Fig. 369. J297/11. Photograph of the interior of Ship Shop Nos 3-4 before their demolition in 1980 (23 June 1971). ©Crown copyright.HE.

Adjacent to the north lay **Slip No. 5** (c.1845, 1900), after extension some 666 feet in length for the construction of the *Dreadnought* class of battleship. The slip was roofless since metal ships were not harmed by weather during construction; this too was demolished in 1979. Not only did the head of the slip come close to the Steam Factory (q.v.) but a ship under construction was almost the same height, creating a powerful visual image. This was the slip used for the construction and launching of some of the best known battleships of the rearmament era. Other battleships were built in dry docks and simply floated out in the absence of the *éclat* accompanying slip launching. Photographs of vessels sliding down the slip, such as that of HMS *Iron Duke* on 12 October 1912, cheering crowds apart, indicate the rudimentary derrick cranes still in use. By the Second World War hammer head cranes had been put up beside the slip. These were dismantled in 1978. Arguably the nearby **Engine Smithery No. 3** (1903) with its corrugated iron walls, fourteen metal chimneys and ventilators protruding through its roof presented an even weightier impression. The date of its demolition is uncertain, but it was not in place in the 1970s. Illustrating the way naval architecture was constantly effecting structural change on the ground, was the fate of **Dock No. 9** (1850).<sup>8</sup> Although it had the advantage of opening directly into the harbour, this space was needed for the stacking of steel plates for use on Slip No. 5. It was infilled in 1898. Two photographs in Patterson's *The Royal Navy at Portsmouth since 1900* (2005, pp. 84, 149) show North Corner with Slip Nos 5 and 2 and Ship Shop Nos 3-4 in 1969, compared with the same site in c.2005.

The Slips described gave rise to six knuckles, known as the **South Slip, Middle Slip and North Slip Jetties**, which were extended into the harbour in the 1920s and 1930s. At the same time **North Corner Jetty** was constructed on an east-west line at right angles to Middle Slip Jetty (see map HE NMR M95/03034, 1900). The Western Frontage Plan for Proposed Reconstruction, HM Dockyard (HE, MD95/03045, 1930) shows work carried out during the 1930s.

In 1981–82 the Way Ahead group, planning works relating to Portsmouth's transition to a naval base, noted that reconstruction of North, Middle and South Slip Jetties would be completed in 1983, reconstruction of North Corner Jetty was under discussion, but that of North Railway and Sheer Jetties was 'not active'. (TNA, 1981–82, DEFE 69/668) In the late 1980s the Jetties were rationalised to give a long linear berth to the west of the original knuckles, renamed **Middle Slip Jetty** and **Sheer Jetty** or **Victory Jetty** to its south. The linear quay now extends as far south as the entrance to Basin No. 1, greatly improving berthing facilities. In 1999 those jetties constructed in the 1920s and 1930s not covered by the SAM397/Grade I designation 1001852 (which covers the whole of Basin No. 1, including

<sup>8</sup> Not to be confused with the 1875 Dock No. 9.

the old sea wall frontage to Pitch House and Sheer Jetties and Dry Dock Nos 1-6), were demolished. Groundworks were centred to the south and west of the substation on North Railway Jetty. The existing substation was enlarged and new cable ducts were installed to service the new Western Jetties refurbishment for the new *Queen Elizabeth* class aircraft carriers. Gifford & Partners carried out an excavation of the Western Jetties, reported as follows.

The Western Jetties are thought to have been constructed of timber and cast iron between 1840 and 1870, extending from the south Camber to Dock No. 9. These were replaced in the 1920s and 1930s with concrete jetties, Middle Slip Jetty being replaced in the 1990s. (Gifford, 2000, pp. 1, 3, 6)

Excavation around the substation exposed 30m of the back of the sea wall, which was in poor condition due to the insertion of service ducts and a culvert in c.1905. A number of facing stones had been replaced by concrete. At its greatest width the wall was 3m thick, constructed of dressed stone with a rubble core. In the south west corner a stepped footing (0.28 x 2.5m) was observed. It did not run the length of the wall and may have been built to strengthen the corner. A short section of the southern end of the sea wall was exposed. Its northern face consisted of dressed stone blocks similar to the western wall. A buttress was seen 2m east of the south west corner (0.66m x 1.9m), also of dressed stone blocks. (Gifford, 2000, pp. 1, 4-5)

A large bollard whose foundation was c.1m<sup>3</sup> was removed from the south east corner of the excavation, retained for use elsewhere. A capstan base (6m x 2m), marked on the 1905 Engine House plans, was uncovered north of the bollard. (Gifford, 2000, p. p. 5)

At the junction of two trenches excavated north of the substation another capstan base was uncovered, c.1m x 2m, with brass fittings and without a housing for a motor. This capstan was also marked on the 1905 Engine House plans. To the north of this capstan base the northern face of a wide brick structure was seen, faced in large stone blocks. (Gifford, 2000)

Fig. 370. PK318/07 FL00982.02.001. Photograph of the Block Mills from the southeast (n.d. c.1970s). ©Crown copyright.HE.

Fig. 371. PK318/07 FL00982.02.002. Photograph of the Block Mills from the southwest with the head of Dock No. 6 on the left (n.d. c.1970s). ©Crown copyright.HE.

Fig. 372. 23852/27 SU 6300/81. Aerial photograph of the Block Mills from the southwest, before its refurbishment in 2007–8, when the external staircases were removed (11 Apr 2005). ©Historic England.

Fig. 374. South elevation of the Portsmouth Block Mills (1802, 1/153), with the external twentieth century fire escapes removed. A. Coats 2010. Reproduced with the permission of the MoD.

Fig. 375. Interior of the Portsmouth Block Mills (1802, 1/153), showing new roof timber and two beams where traditional scarf joints bond old and new timber. A. Coats 2010. Reproduced with the permission of the MoD.

Located to the east of Dock No. 6 are the **Block Mills** (1802, 1/153, SAM395, 1001851/ Grade I, 1078288, CA 22, MoD, SU 628586 008154). Probably because of their importance in the history of both engineering and production engineering, the three buildings comprising the Mills are remarkably little changed. In 1956–58, the Portsmouth Dockyard Modernisation and Development Programme planned to demolish and reconstruct the building, as it was 'Outdated and a serious fire risk. A metal furniture shop is an urgent requirement which will be incorporated into the new building.' (TNA, 1956–58, ADM 1/26499) It survived, however, and in 1981 the building was still being used for hose-making, but the Ancient Monuments Board for England Panel on Historic Naval Bases suggested that, as 'a working exhibit' it could demonstrate how blocks were made and provide additional interest to visitors to HMS *Victory*. Some production of wooden pulley blocks was still in process until 1983,

by which time demand was negligible. A few machines had by then been transferred to Boathouse No. 6; that which remains *in situ* – the swing arm circular saw – does so because it is built into the timbering itself. A second is a treenail-making machine. Otherwise the buildings are empty. They are in the naval base but their divestment to the heritage area has been discussed since the 1980s. In the early 1970s the Block Mills were recommended for guardianship by the Ancient Monuments Board for England and were to be taken into care as soon as the hose-makers vacated the building. By the time they vacated it in 1984 there was a moratorium on guardianship and the opportunity had been lost (Coad, pers. comm. 13.12.2014).

Work began at the end of 2006 to remove the Block Mills buildings from the At Risk Register. The North Range roof was extremely fragile, with missing slates, ridge lead flashing ripped away and lead guttering in the valleys worn to almost nothing. 'It was at the end of its life.' (Steve Barrett, White Young Green (WYG) Management Services, quoted in Coats, 2009)

One enigma was a disappearing course of bricks running from east-west in the North Range south-facing wall, below the top range of windows. It meant that window frames and cills were misaligned. This was corrected, the whole top section of the wall and roof parapet being rebuilt with mostly new bricks by Cathedral Works. Lambs Bricks & Arches. The new imperial bricks look much brighter than the 200 year-old grimed bricks, but were colour-matched to the inside of the originals. Where possible originals were retained, including glazed headers. The roof is now the same height as the south roof, but with a slightly different pitch, and without the west-facing rooflight of the south roof. This could be inserted later. Steel trusses were used to support the roof, as 11m spans of timber were unavailable. Timber rafters topped them, then sarking boards (75% were retained) to take the slates. Portland stone was used for the coping stones.

All window frames were taken out and rebuilt individually by joiners who set up their woodwork shop inside Block Mills for a year. Sound wood was retained and frames remade according to the existing pattern, testimony to changes made over 200 years. They were pivoted in the existing manner. All woodwork was painted.

Rubbed brick arches over doors and windows were replaced by Cathedral Works. Bricks were repointed. A large piece of concrete between two doors on the south front between the first and second floors was faced by new brickwork. Cement mortar could not be replaced throughout due to cost restraints, but in the worst areas it was replaced with lime mortar, carefully tested to match the original composition.

The former ships' timbers used in the north-south first floor corridor were rotten, as lead flashings had perished. Windows were replaced to the same design and lead flashings applied in very difficult positions. English Heritage approved the use of lead to replace the shallow pitched slate roof.

The lead-lined roof gutter on the South Range was worn and its shallow pitch had allowed water to rise by capillary action, therefore a steeper pitch was designed. Richardson Roofing did all the leadwork. Ffestiniog slates were used for the roof.

A major change to the building's appearance was removal of the twentieth century fire escapes from the south front. In all 400 pieces of iron (brackets, nails etc) were removed, as rust was pushing apart the brickwork.

In the central ground floor range lights were remade with cedar, replicating the existing pattern. Where rain had penetrated from the crossing corridor, roof-mounted machinery had to be carefully surveyed and taken down to replace the cross beams, incorporating a very complex scarph joint. Wall plates of 3m in the south-facing north wall had to be replaced by reclaimed timber from France.

Inside the North Range ground floor timbers, badly rotted from the water below, were replaced, with a damp proof membrane added. Wessex Archaeology recorded them as they were removed. (Coats,

2009; see English Heritage, March 2010, p. 40) Ironically, since the Block Mills became weathertight but lack any regular use which would ventilate the buildings, the smell rising from the underground reservoir has become quite noticeable.

To the east of the Block Mills, their south elevations aligned, are two small single storey buildings in red brick: **Office** (1945, 1/152, SU 628868 007985) and **Office** (1966, 1/151, MoD, SU 629018 007991). On this site until 1930 was a Shipwrights' Shed, appearing on a map of 1849. Immediately to the north of these tiny offices is the **RN Film Corporation** (1929, 1/154, MoD, SU 628993 008116). It has two storeys of red brick, string courses above the windows and a slate roof. Previous occupancy of the site was a Plumbers' Shop. It was originally the Central Estimating Office, and one of the few interwar structures in the yard.

North of the Block Mills, on Victoria Road, is the **Water Distillation Plant** (1960, 1/159, MoD, SU 628593 008504). Visually it is an unusual structure comprising reinforced concrete piers with brick infill, topped by metal holding tanks, the weight of which accounts for the strength of the piers. West of the latter, north of Dock No. 6, is the **West Pumping Station** (1909, 1/161, MoD, SU 628211 008454). There are two storeys in quality red brick with window cills of glazed blue brick and round windows in the gable ends. The height of the building indicates that the original machinery was likely to have been vertical triple or quadruple expansion steam engines, the most efficient means of pumping at that time. Unfortunately, interior access was not possible. The original chimney is *in situ*, and its modified flue indicates that it is still in use. The relatively impressive architecture is indicative of the contemporary view of industrial pump houses which were regarded as key elements of dock areas. On the dock side of the Pumping Station is an **Amenity Centre** (1959, 1/161A, MoD, SU 62814 00859), single storey in red brick; there is a strong possibility that this originally housed electric pumps which require very much less space than steam-powered equipment of comparable capacity. West of the Pumping Station is the **Western Area Boiler House** (1909, 1/162, MoD, SU 627949 008504), completely rebuilt, encased in reinforced concrete piers with brick infill with a flat topped roof. Waste gases are expelled via the 1909 chimney. Adjacent to and south of the chimney, overlooking Dock No. 6, are the small **Shore Squadron Offices** (1955, 1/163, MoD, SU 627574 008516), constructed as the Small Craft Planning and Production Office; in the late 1980s the first floor housed the Yard Rat Catcher's Office (Lambert, 1993).

Fig. 376. Portsmouth Steam Factory (1847, 1/208), east elevation, showing the 10 ton gantry crane. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 377. 'VR' bollard near Portsmouth Steam Factory (1847, 1/208). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 378. Portsmouth Steam Factory (1847, 1/208), rainwater hopper, east elevation, dated 1847. A. Coats 2013. Reproduced with the permission of the MoD.

The key feature of the early Victorian Dockyard, flanking Basin No. 2, is the architecturally impressive, long, narrow **Steam Factory** or **Ship Shop No. 2** (1847, 1/208, Grade II\*, 1272270, MoD, SU 629368 010191), its survival doubtless a consequence of its listing. When the Factory (q.v.) was completed in 1903, this became the main Shipfitting Shop (Malley, pers. comm. 2011). The manual gantry cranes which spanned the width of the building were still *in situ* in the 1980s. At this time part of the upper floor was used by the hosemakers and the sailmakers, whose machine tables were by Singer, 1929. It is now used as offices, workshops, stores and a gymnasium. The undoubtedly impressive appearance of the Steam Factory apart, the most unusual feature of the east elevation, facing Basin No. 2, is the 10 ton gantry crane by Stothert & Pitt, one set of whose wheels runs on a track fixed high on the wall, the other conventional set being at the edge of the Tidal Basin. This arrangement has the advantage of consuming less quay space than that of a travelling crane, but can only be employed when there is a convenient building for the aerial track. This occurs nowhere else in the dockyard. Until the 1930s there were steam-driven swan neck cranes, whose curved iron jibs extended from the base plate to the pulley wheels. They may have had a lifting capacity of up to 40 tons, but they were immobile,

lacking the flexibility of gantry or travelling cranes. The round-headed windows on the first floor of each bay could be opened, materials being moved by a small wall crane. Most of these have been removed, but a new crane has been constructed, probably in the 1950s, in the second bay from the south. A few quayside bollards, some bearing the letters 'VR', are still in place.

Fig. 379. Former 80hp Portsmouth Engine House (1849, 1/209) from the northeast, with the Steam Factory in the background. A. Coats 2014. Reproduced with the permission of the MoD.

In the centre of the west elevation of the Steam Factory, almost attached to it, is a series of buildings extending westwards the same distance as the Smithery, the largest of which, at the western end, was the **80hp Engine House** (1849, 1/209, MoD, SU 628593 010035), in architectural style not dissimilar to that of the Steam Factory. Since it was single storey, the engine was probably horizontal, powering pumps linked to the Steam Basin and the Harbour. The Engine House was subsequently used to feed the dockyard compressed air grid through electric Bellis & Morcomb pumps (Riley, 1987, p. 12). None of this machinery remains. All three buildings have the same dockyard notation as the Steam Factory, even though they were not functionally linked to it. At present they are leased to the firm of Burgess Marine, a partner of BAE Systems, and to Outboard Motor Workshops.

Fig. 380. Former Portsmouth Smithery (1852, 1/209), south and west elevations, showing the original western chimney bases dated 1852. A. Coats 2014. Reproduced with the permission of the MoD.

At the head of former Slip Nos 1 and 2 is the large **Smithery** (1852, 1/209, MoD, SU 628850 009655), now Store No. 30, which until the 1980s retained its massive steam hammer and other elements of heavy engineering; it now houses a squash court, various stores, offices, messrooms, an amenity room and a self-service laundry built into its west elevation – very much an all purpose facility. The west and south elevations have been reclad and painted grey, with some remaining brickwork. The contractors were Brazier & Son, carrying out the work in 1993. Its five chimneys have been removed.

Other than the buildings described, this part of the yard is given over to car parking, containers which are their own storehouses, and some circular fuel storage tanks. There are new roadways facilitating vehicular traffic, some of the car parks are designated 'long term' and there are even bus stops with shelters, the whole being redolent of an industrial estate rather than a dockyard, or since 1984, a naval base.

Fig. 381. Portsmouth Final Sketch Design Fig. 2 Existing Site Plan, showing original docks and slips at Portsmouth North Corner, 1/223. BAES. FMBF (June 1978). Item FB45, PSA, DOE, Directorate of Defence Services II (June 1978). Reproduced with the permission of the MoD.

Fig. 382. Portsmouth Final Sketch Design Fig. 8 East Elevation, 1/223 (June 1978). BAES. FMBF Item FB45, DOE, PSA, Directorate of Defence Services II. Reproduced with the permission of the MoD.

Fig. 383. Portsmouth Final Sketch Design, Fig. 8 North and South Elevations, 1/223. BAES. FMBF (June 1978). Item FB45, DOE, PSA, Directorate of Defence Services II. Reproduced with the permission of the MoD.

Fig. 384. Portsmouth Final Sketch Design Fig. 8 West Elevation, 1/223. BAES. FMBF (June 1978). Item FB45, DOE, PSA, Directorate of Defence Services II. Reproduced with the permission of the MoD.

Fig. 385. Portsmouth Slip Jetties Reconstruction, PSA, DOE Stores & Ablutions Block, Elevations, Sections. Unicorn (Sept 1976). 1/225. F83, Drawing no. XB2/7C. BAES, Unicorn (Feb 1998). Technical Support. Reproduced with the permission of the MoD.

Fig. 386. Portsmouth Slip Jetties Reconstruction, PSA, DOE, Block 2, East, South, West Elevations. BAES. Unicorn (Sept 1979). 1/225. F83. Drawing no. AB2/4C. Unicorn (Feb 1998). Technical Support. Reproduced with the permission of the MoD.

Fig. 64. 23852/14 SU 6201/4. Aerial photograph of Portsmouth North Corner from the east showing a landscape which, apart from the Smithery and the Steam Factory, has changed completely since the beginning of the twentieth century (11 Apr 2005). ©Historic England.

Fig. 43. 23834/01 SU 6200/31. Aerial photograph of Portsmouth's straightened Western Jetties and North Corner from the west, showing Dock No. 6 cut off from the harbour, as is Monitor HMS M33 in Dock No. 1, with HMS *Victory* in Dock No 2 and *Mary Rose* in Dock No. 3 (11 Apr 2005). ©Historic England.

Fig. 387. Typical rich red brick of the late twentieth century Portsmouth buildings: Admin Offices North Corner (1982, 1/224). A. Coats 2013. Reproduced with the permission of the MoD.

North Corner Development alongside the new Middle Slip Jetty (see the discussion of the jetties above) comprises a group of entirely new structures, designed in 1978 to replace the 'inadequate' buildings around Slip Nos 1, 2 and 5. South is the **Triton Galley** (1/220, post-1993, SU 62793 01058), a Portakabin-like structure on the site of a 1960 substation; west and north are four medium sized buildings of one or two storeys in rich red brick, including a **Garage** (1982, 1/214, MoD, SU 62748 01068). The **Joiners' Department** (1982, 1/223, MoD, SU 62815 01106) is the largest, designed to have 'spaces functionally related but in such a manner as to be sufficiently flexible to accept modification.' (BAES, FMBF FB45 Final Sketch Design June 1978, p. 6) It includes large workshops, small specialist workshops, with roof glazing and overhead travelling cranes in the large workshops. It is constructed of reinforced concrete, clad in brick, the Workshop block having a steel frame, supported by RC ground beams bridging Slip No. 5 and concrete piles elsewhere. The roof is double-pitched with steel sheets. The **Fleet Engineering Office** (1982, 1/224, MoD, SU 62778 01108), which was built in the same project, houses welfare facilities (divided into junior and senior ratings sections) and offices with demountable partitions and bears the logo 'Portsmouth Engineering Group Partnering at Work' on the seaward side, Its roof is of concrete covered with asphalt. Next is the **Base Main Store** (1982, 1/225, MoD, SU 62746 01138) (BAES, FMBF FB45 Final Sketch Design June 1978, p. 3; Fig. 2 Existing Site Plan, Building 1/223; BAES, Unicorn, Dec 2000, Technical Inspection, p. 2, Building 1/224)

### 3.6.2 Area 2

Fig. 388. Portsmouth HM Naval Base Area 2 (1974). MoD *HM Naval Base Building Location/Numerical Index*. Reproduced with the permission of the MoD.

Fig. 389. T85 FL00981/01/002. Aerial photograph of Portsmouth Harbour looking northeast with Whale Island at top centre. It shows the Tidal Basin with a bridge link and the docks and locks west of Basin No. 3 (1965). Reproduced by permission of Historic England.

Fig. 390. MD95/03054 (1874). Basins and Locks North Yard Extension Plan. 'Plan shewing by a Red Tint the Work included in the first Contract, two locks, one deep dock, two ordinary docks, two dock entrances, basin and harbour walls.' Reproduced by permission of Historic England.

Fig. 391. MD95/03056 (n.d.) Extension of Dockyard Plan and Sections, Docks, Locks and Basins showing the dimensions of the excavations. HM Dockyard, Portsmouth, probably close to HE MD95/03054 (1874). Reproduced by permission of Historic England.

Fig. 392. Portsmouth Dockyard Extension: Plan Shewing state of the works in Jany. 1875 (progress since 1865). To accompany Colonel Pasley's Report of Feb. 1875. Director of Works. Defence Estates Plans. AdL, Vz 14/111 (1875). Courtesy MoD Admiralty Library Naval Historical Branch, Portsmouth.

Fig. 393. Map showing the swing bridge and timber staging removing surplus excavated material from the Great Extension which enlarged Whale Island. AdL Vz14/111 (1875). Portsmouth Dockyard Extension: Plan Shewing state of the works in Jany. 1875 (progress since 1865). To accompany Colonel Pasley's Report of Feb. 1875. Director of Works. Defence Estates Plans. Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

Fig. 394. His Majesty's Dockyard at Portsmouth Defence Estates Plans, Scale 1:2500. West section of Portsmouth Basin Nos 3, 4 and 5 to 2 and 3 'before' changes. AdL, Vz 17/16 (1896, corrected to 1909). Courtesy MoD Admiralty Library Naval Historical Branch, Portsmouth.

Fig. 395. His Majesty's Dockyard at Portsmouth. Defence Estates Plans, Scale 1:2500. Portsmouth Basin Nos 3, 4 and 5 to 2 and 3 'after' changes. AdL, Vz 17/16, (1896, corrected to 1909). Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

Fig. 396. His Majesty's Dockyard at Portsmouth). Defence Estates Plans. Scale 1:2500. East section of Portsmouth Basin Nos 3, 4 and 5 to 2 and 3 'after' changes. AdL, Vz 17/16 (1896, corrected to 1909). Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

Fig. 397. Portsmouth Dockyard Extension Works 1881. Plate 4. Colson, C. (1 January 1881). Portsmouth Dockyard Extension Works (including Appendices and Plate at back of volume). *Minutes of the Proceedings of the Institute of Civil Engineering*, 64(1881) Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Fig. 398. MD95/03042. (1905 corrected to 1913). Portsmouth Harbour Plan of Fountain Lake (coloured), HM Dockyard Portsmouth. Reproduced by permission of Historic England.

Fig. 4. Numbers and Dimensions of Locks, Docks and Basin Entrances in HM Dockyards, June 1908. Admiralty Book. HE NMR, ADM01 (1908) p. b. Reproduced with the permission of Historic England.

Fig. 399. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. View of the Great Extension Basins, Locks and Docks looking west, with North Corner in the distance. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 400. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. View of the Great Extension Docks looking south, with the infilled Dock No. 13 in the centre and the Factory on the left. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 401. 15800/20 SU 6301/13. Aerial photograph looking west from Basin No. 3 towards the Tidal Basin and Basin No. 2, with (left to right) Dock No. 9, A Lock, B Lock, C Lock and D Lock in the centre. On the left Dock No. 15 can be seen full of water, with a vessel in Dock No. 14 near left. Beyond is Dock No. 8 opening into Basin No. 2 and Dock No. 11 with its caisson *in situ* (9 Sept 1997). ©Crown copyright.HE.

Developments in the early Victorian dockyard hinged round the appearance of steam warships, but such were the rapid strides made in shipbuilding technology, steam propulsion and gunnery, coupled with the perception of the public and the government that France was posing a real military threat, that the state of the yard had once more to be reviewed. In 1864 the Admiralty obtained parliamentary sanction for what came to be called the Great Extension, beginning in 1867 and terminating in 1881. The works trebled the area of the dockyard, half of the new ground, some ninety-five acres, being reclaimed from the Harbour. Three enormous basins, each larger than the Steam Basin/Basin No. 2, were constructed for fitting out, rigging and repairing, access to the Harbour being via two locks, while three docks were built, provision being made for two more. To achieve this a dam was constructed, enclosing the area to be drained and excavated, but since the mud was in some places as much as thirty-five feet thick, excavating machinery had to be mounted on wooden piling, as did the railways delivering masonry and removing spoil, much of which was deposited on Whale Island. Steam-driven gantries were constructed above the locks and docks, allowing the heavy blocks of masonry to be positioned precisely, a method which years later came to be standard practice in the shipbuilding industry. The entire system involved a high degree of technical sophistication, although something similar had been employed in the construction of the port of Holyhead in Anglesey (Riley, 1985, pp. 22-5). While employing the latest steam technology, Plan E, approved by Portsmouth Dockyard officers in March 1865 and adopted, also utilised convict labour. This was estimated annually at

£50,000 (1866–69), compared with annual contractor costs of £200,000 (1866–67 and 1868–69) and £250,000 (1867–68), and dredging costs of £10,000 and £12,000 in 1866–67 and 1867–68 respectively. The tinted areas on Plan E marking areas to be built by convict labour show that they were involved in constructing all three basin and wharf walls and the six docks and two locks entering the Repairing Basin, as well as the wharves running along the south side of the earlier Tidal Basin. (Hamilton, 2005, pp. xiii, 60-1, plan E endpaper)<sup>9</sup>

Huge as this project may have been, some elements proved to be inadequate for the ever increasing size of warships, driven by the rearmament race with Germany. Between 1910 and 1914 two larger entrance locks had to be constructed and the three basins amalgamated. In ‘Equipment Used in the Extension of Portsmouth Dockyard 1868–74 and 1910–13’, Riley analysed differences in the equipment used in the two periods, such as steam-driven, rail-mounted pile drivers, steam-driven dredgers and overhead gantries, from contractors’ photographs, the crucial difference being the presence of up to twelve metres of mud which had to be excavated in the earlier period (1995, pp. 395-401).

To isolate all these works from Portsea a **Dockyard Extension Wall, Circular Road and Flathouse Road** (Grade II, 1244592, SU 63999 00829) was built between 1863 and 1865 of light grey Purbeck stone edged with three string courses of dark red brick. The wall boasted bartisans at intervals on its outer side. It is popularly believed that the weapon slits were for the use of guards overseeing convict workers. But since convicts were employed as labourers and brick-makers inside, not outside the yard, it is clear that this belief is a myth. The bartisans are aesthetic, not functional. The wall may date from the 1860s, but with the exception of two small extensions in the twentieth century, it enclosed all the substantial developments effected in the yard leading up to the two world wars.

Fig. 402. Decorative bartisan in the Portsmouth Great Extension wall, Circular Road (1863–65), built by convicts. It was then facing outwards (south), but following the building of the Naval Barracks c.1899, came within the current Naval Base. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 403. Head of Portsmouth Dock No. 8, 1850, showing limestone setts, granite coping stones and walls, and cast iron fittings to reduce wear. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 404. Head of Portsmouth Dock No. 8, 1850, showing granite sliders and cast iron fittings to reduce wear, and limestone setts. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 405. Clarkson & Beckitt capstan, 1905, north of Dock No. 8. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 406. Cowans Sheldon capstan, 1956, southeast of Portsmouth Basin No. 2. A. Coats 2013. Reproduced with the permission of the MoD.

On the north side of Victoria Road, opposite the Iron Foundry, is **Dock No. 8** or **South Inlet Dock** (1850, SU 631352 008804). Its northern entrance has been rebuilt in concrete, possibly a result of wartime damage on 5 December 1940. HMS *Cameron* was under refit when it was hit by a bomb during an air raid on Portsmouth and set on fire. It was ‘Bodily moved off supporting blocks and flooded by fire-fighting.’ (Royal Navy and Naval History Net, 1998–2014; NavSource Naval History, 2014). However, the 1905 capstan by Clarkson & Beckitt of Maryhill, Glasgow has survived intact. Judging by the flotsam in the dock it is seldom used. The travelling crane on the south side of the dock is by John Boyd, 1977; an identical crane is located to the west on the edge of the Basin. Earlier a 10 ton electric travelling crane by Cowans Sheldon dated 1920 was in position at the edge of the dock (Anon, 1929, p. 14). In the Basin on the north side of the dock entrance were sheer legs with a 30

<sup>9</sup>House of Commons Sessional Papers (1865). *Papers relating to the proposed extension of basin and dock accommodation in the royal dockyards*, 1865, no. 227, vol. xxxv, part I, 1865, pp. xi, 615, 623 for both endpapers.



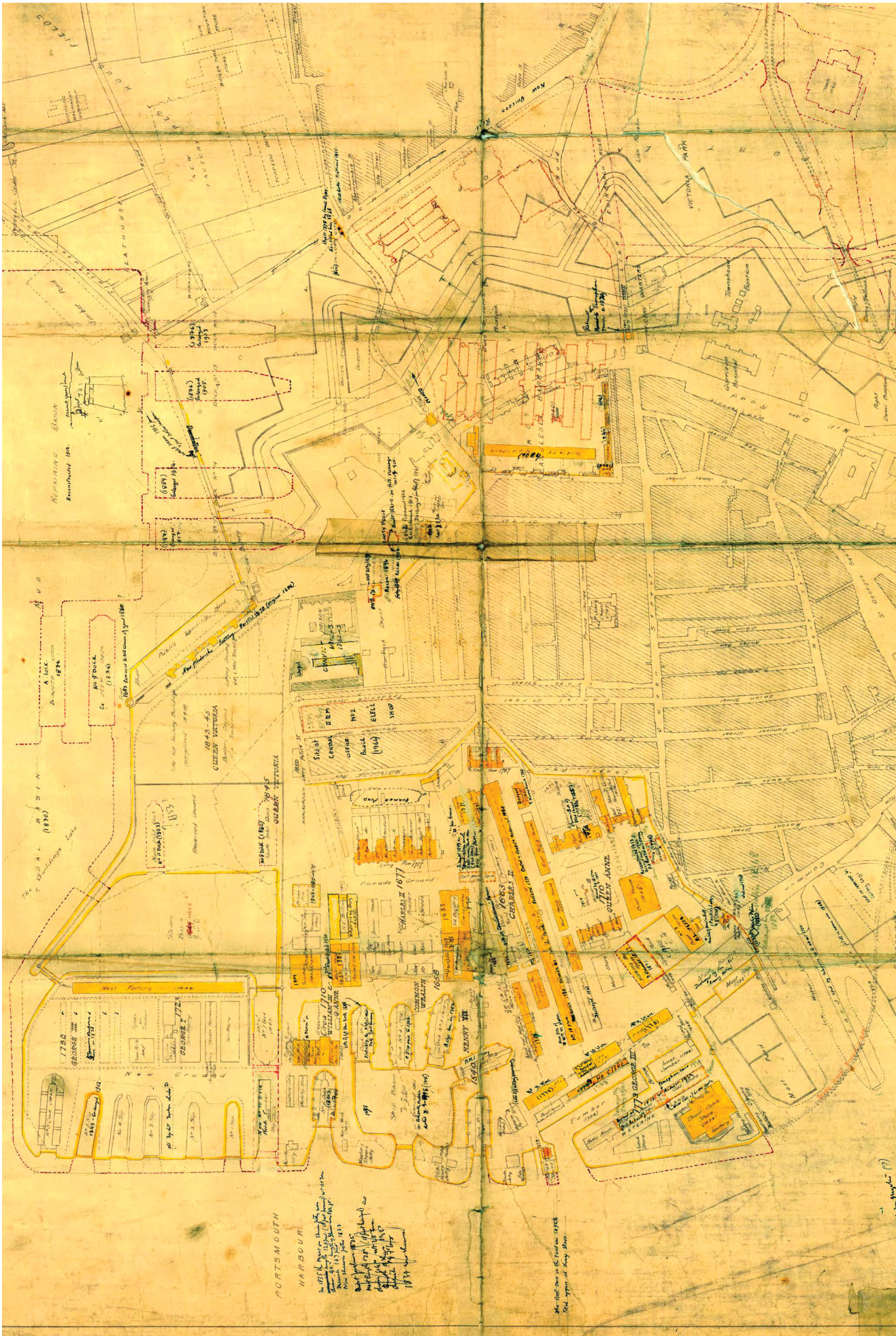


Fig. 188. MD95/03032. (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing shows Portsea fortifications and Pesthouse Field, over which much of Area 3 was constructed, based on 1850 map showing changes in yellow and later buildings in red dotted lines. Reproduced by permission of Historic England.



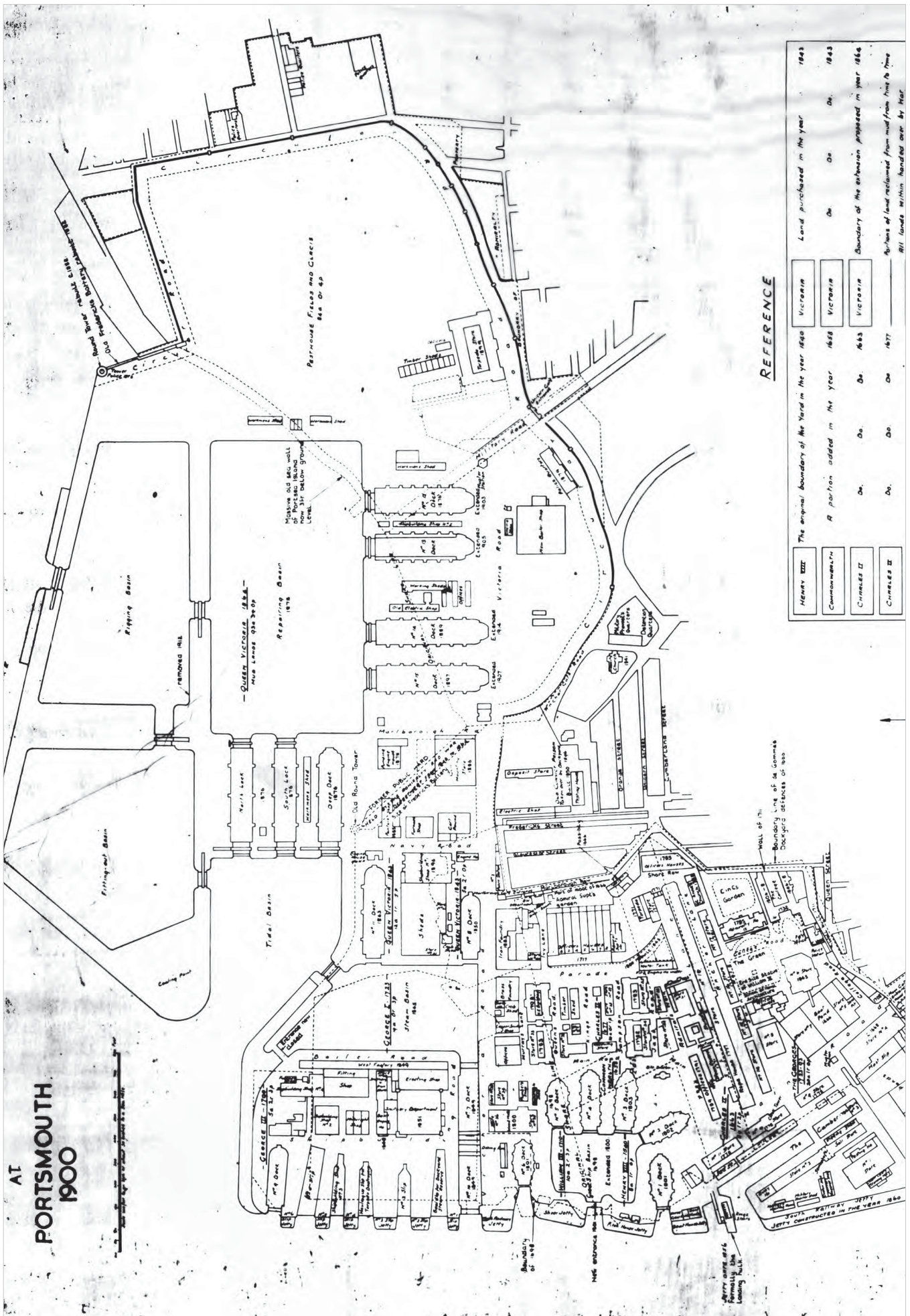


Fig. 190. MD95/03034 (1900). Her Majesty's Dockyard at Portsmouth showing development and enlargement from 1540 to 1900. Reproduced by permission of Historic England.



Fig. 191. MD95/03039 (1936). Plan Showing Proposed Revision of Boundary of HM Dockyard Portsmouth. Reproduced by permission of Historic England.



Fig. 192. HM Naval Dockyard, Portsmouth: Miscellaneous. Sketch plan of naval establishments, showing Portsea, Gosport, Haslar and Bedenham (section). Drawing no. B4. Scale not shown. Director of Works, Admiralty. TNA (1910). WORK 41/310. Reproduced with the permission of The National Archives.

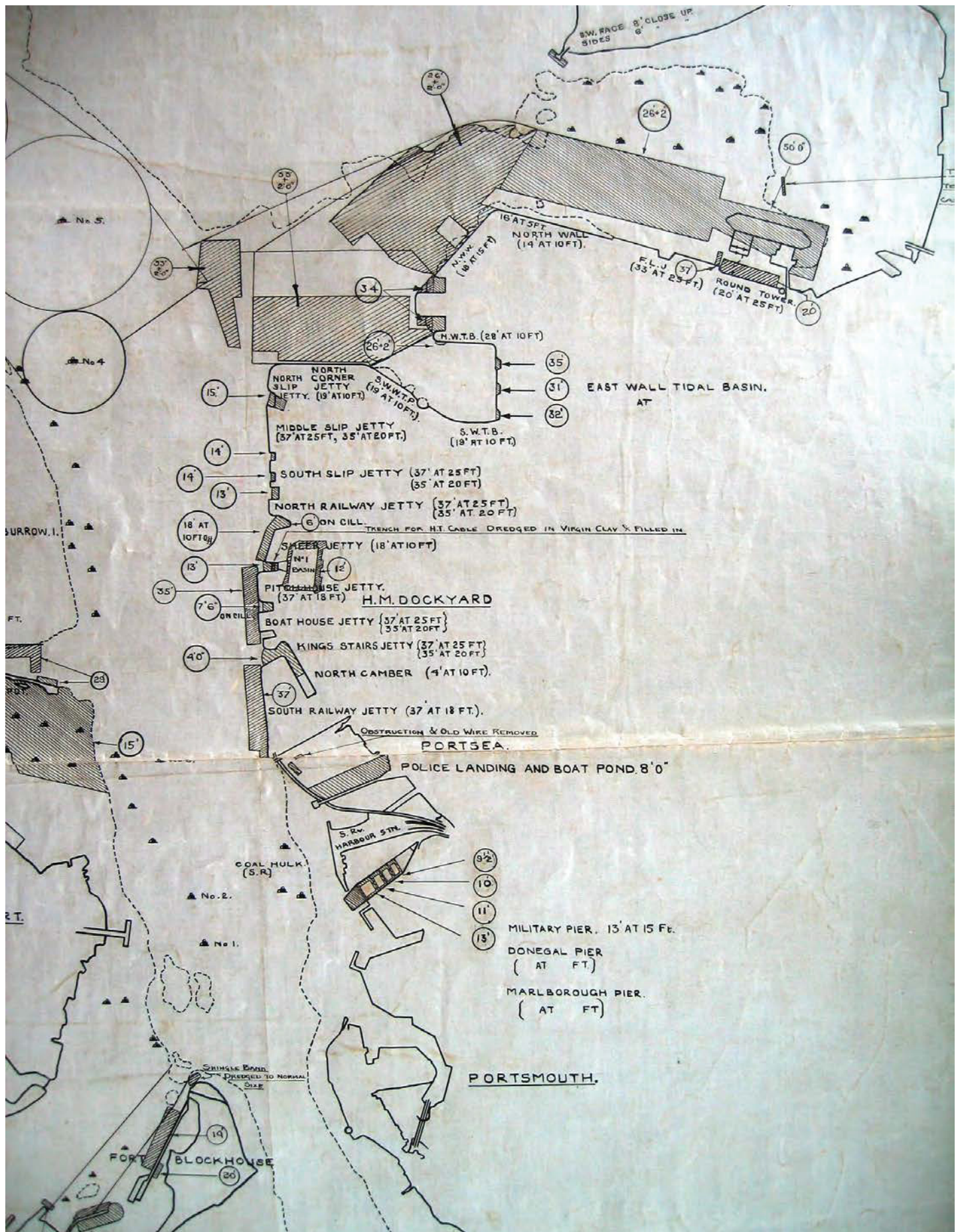


Fig. 193. HM Naval Dockyard, Portsmouth: Miscellaneous. Dredging progress chart, 1935–1938: section showing depths and hatching of work executed during 1935–1936. TNA (1936). WORK 41/311. Reproduced with the permission of The National Archives.

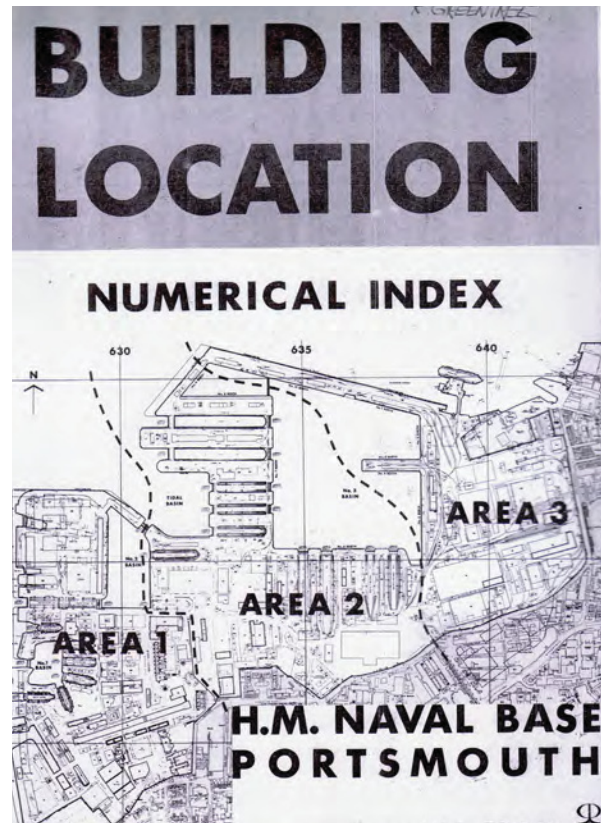
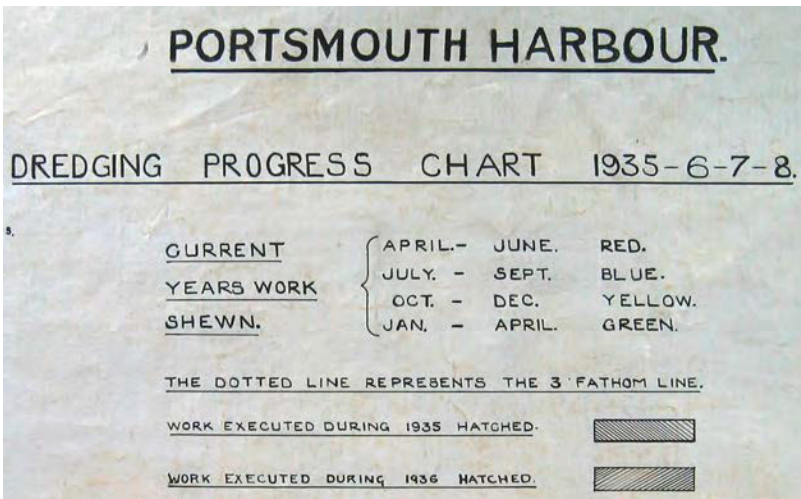


Fig. 194. HM Naval Dockyard, Portsmouth: Miscellaneous. Dredging progress chart, 1935–1938: section showing the hatching key. TNA (1936). WORK 41/311. Reproduced with the permission of The National Archives.

Right: Fig. 195. MoD (1974) *HM Naval Base Portsmouth Building Location/Numerical Index* map showing the three operational areas. Reproduced with the permission of the MoD.

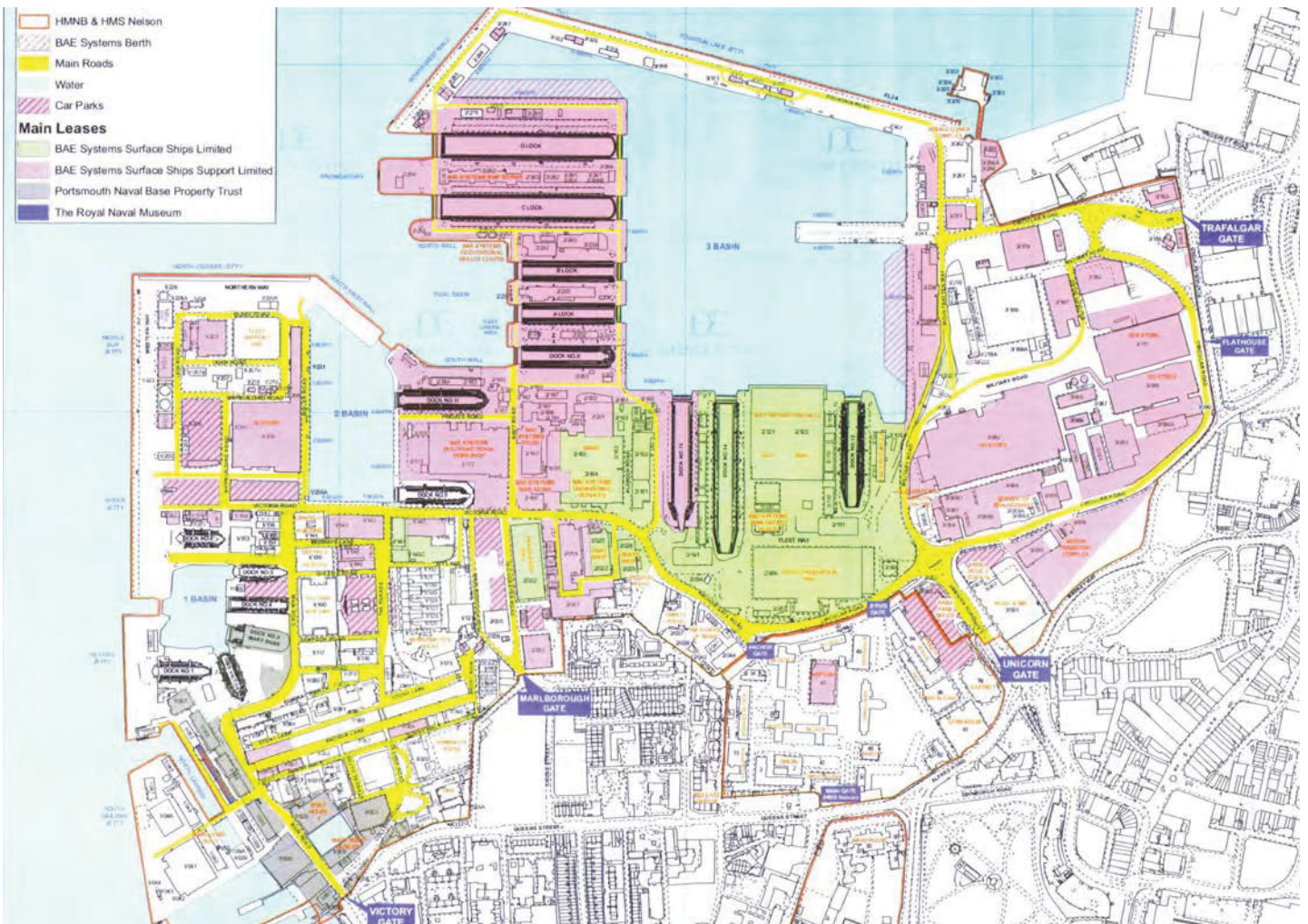


Fig. 196. HM Naval Base Portsmouth, Site Plan. Ministry of Defence: Defence Infrastructure Organisation (2012). Reproduced with the permission of the MoD.



Fig. 197. Aldrich Road, formerly Marlborough Road, Portsmouth (c.1704–11). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 198. Stony Lane runs east-west along the north wall of the Portsmouth Great Ropehouse (1771, 1/65). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 199. Set into the south elevation of Portsmouth Building 1/81 is a dressed Portland stone or replacement concrete plaque which reads 'Under this Stone there is a water Beer', marking an old well or water tank surviving from the seventeenth century dockyard. This would have supplied the garden to the original Commissioner's House (1666) which lay north of Stony Lane until the house was demolished in the 1780s. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 200. Ivy Lane runs east-west between the north side of Portsmouth Long Row Officers' Houses (1715–19, 1/124-132) and the south of the Iron and Brass Foundry (1854, 1/140), then turns north, following the west side of the 1711 dockyard wall, meeting Victoria Road. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 201. Guardhouse Road sign on the former Portsmouth Lime and Cement Store (1878, 3/218) which survives as one of the convict workshops shown on Colson's 1881 map. A. Coats 2013. Reproduced with the permission of the MoD.

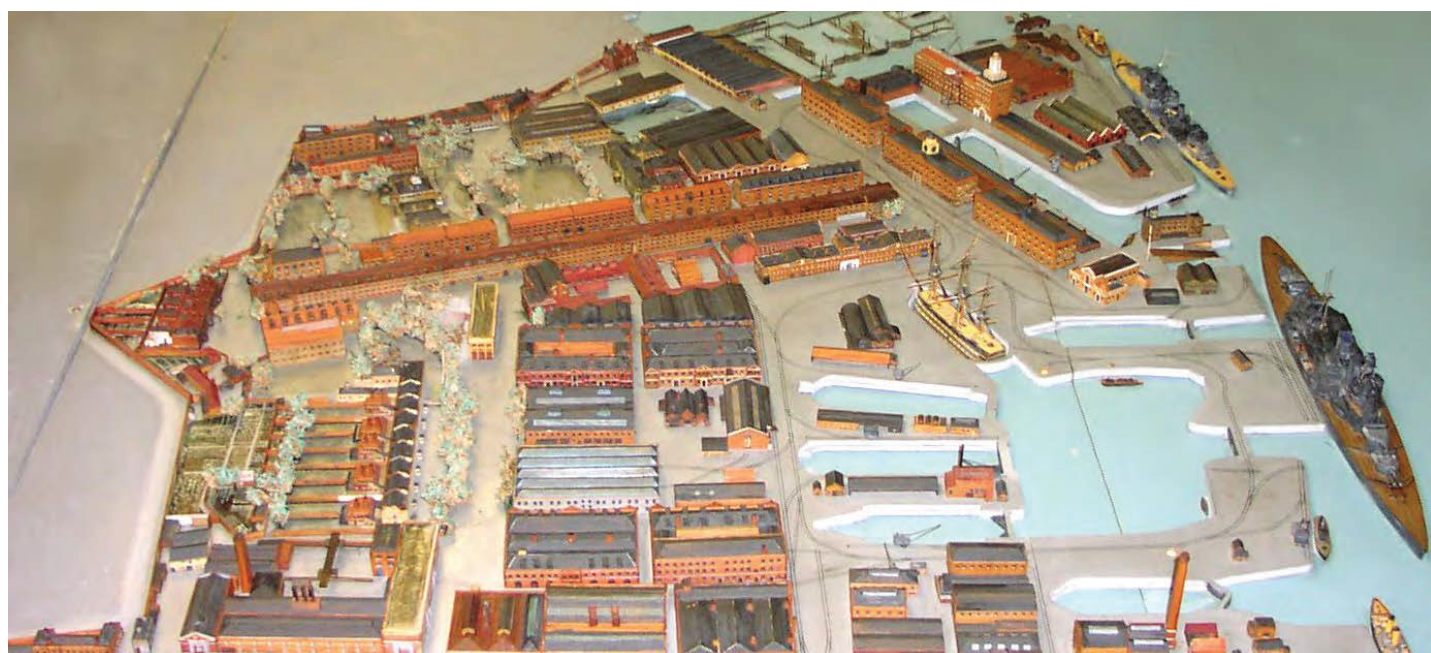


Fig. 202. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. View of the Georgian Dockyard looking south. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



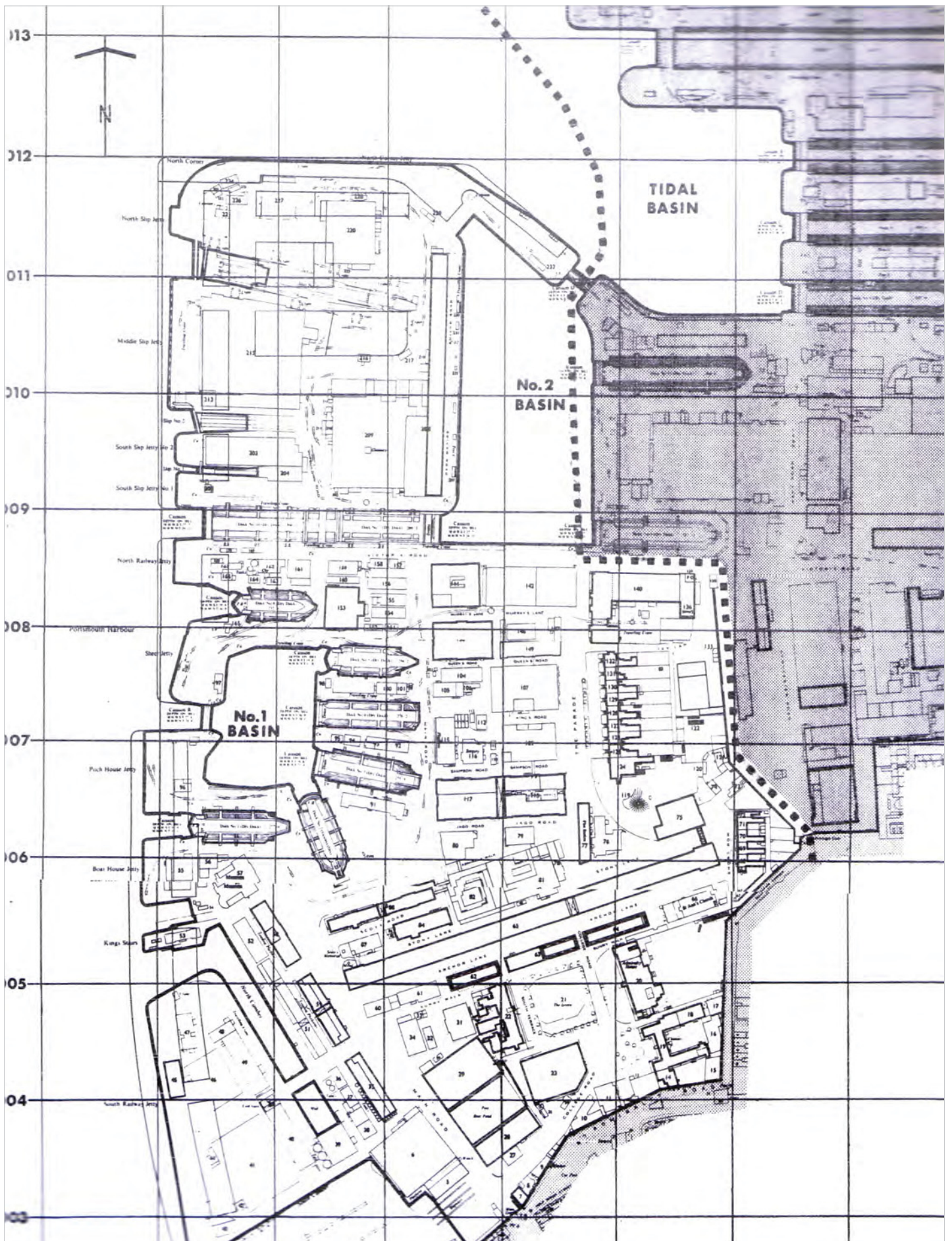


Fig. 203. Portsmouth HM Naval Base Area 1 (1974). MoD *HM Naval Base Building Location/Numerical Index*. Reproduced with the permission of the MoD.



Fig. 204. Photograph of the north elevation of the Main (now Victory) Gate in 1895, showing its original width. Courtesy of Portsmouth Royal Dockyard Historical Trust.



Fig. 205. Admiralty plaque to mark the widening of the then Portsmouth Main Gate (November 1943). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 206. Pre-1985 photograph of the Main Gate, Cellblock (1883, 1/2), Search Rooms (1/2B and 1/2C), Clocking Station (1949, 1/2D) and Romney Hut Boathouse (1948, 1/5). Courtesy of Portsmouth Royal Dockyard Historical Trust.

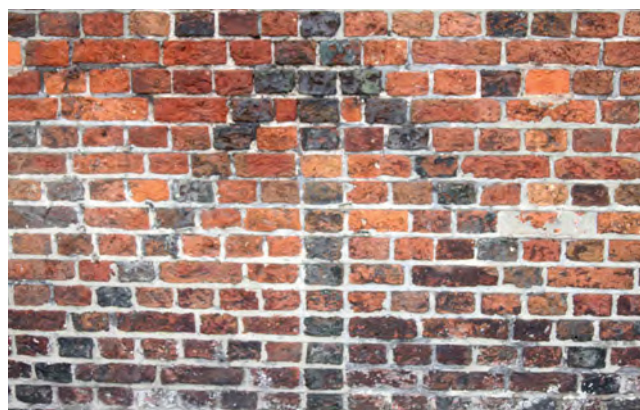


Fig. 207. Broad arrow incorporated into the Dockyard Wall near Victory Gate. A. Coats 2012. Reproduced with the permission of the MoD.



Fig. 208. Blocked gateway through the Dockyard Wall at Bonfire Corner which was aligned with the first (1704–c.1784) Dockyard Chapel. A. Coats 2012. Reproduced with the permission of the MoD.



Fig. 209. Original 1711 Portsmouth Dockyard Wall, this section now within the Naval Base between the new and original Marlborough Gates, taken inside the yard as the Marlborough Salient in 1944. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 210. Twentieth century fouled anchor on the outside of the Dockyard Wall built c.1944 after the Marlborough Salient was taken into the Dockyard. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 211. Former Portsmouth Naval Recruiting Office (1862, 1/1, PNBPT) with the additional wing created by Portsmouth City Council for use as a Tourist Information Centre (2001). A. Coats 2013. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 212. Tourist Information Centre Richard Partington Architects: Elevations, No. 2023.005A. PNBPT, 9.10.2001. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

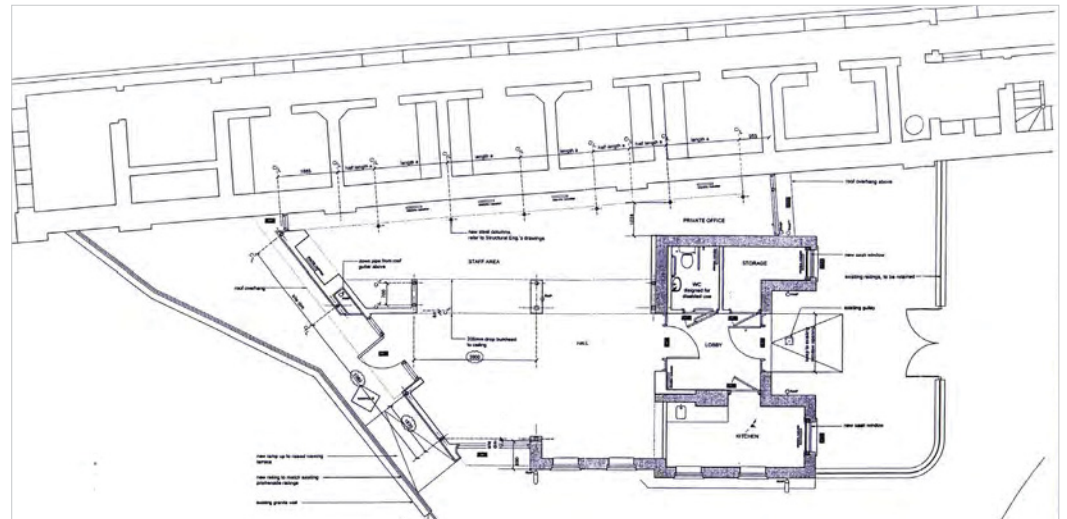


Fig. 213. Tourist Information Centre Richard Partington Architects: Ground Floor Plan, No. 2023.003C. PNBPT, 9.10.2001. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

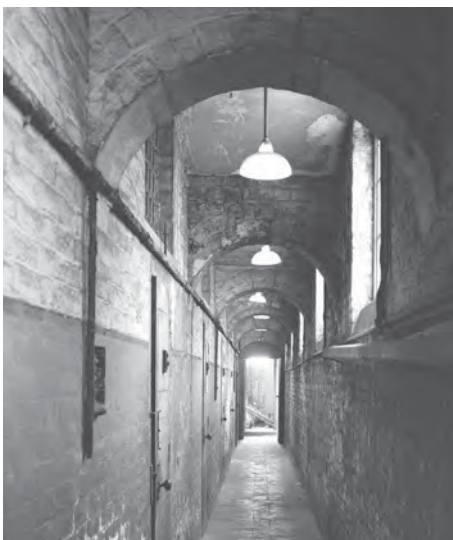


Fig. 214. J473/03/71. Photograph of the Cell Block Interior: ground floor looking east/west (8 Oct 1971). ©Crown copyright.HE.



Fig. 215. J473/07/71. Photograph of the Cell Block Interior: first floor cell door (8 Oct 1971). ©Crown copyright. HE.

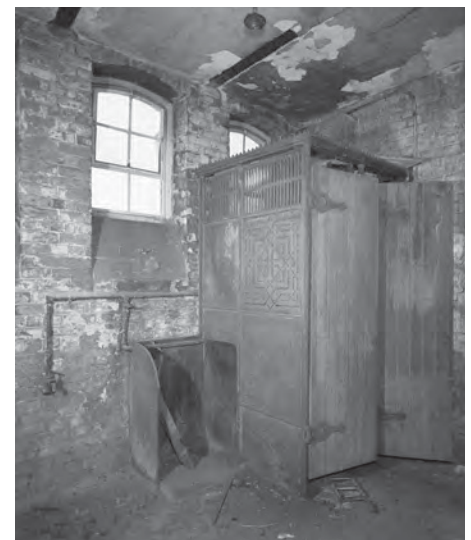


Fig. 216. J473/11/71. Photograph of the Cell Block Interior: urinal (8 Oct 1971). ©Crown copyright.HE.



Fig. 217. 15767/34 SU 6200/4. Aerial photograph of HMS *Warrior* 1860 and Jetty (1987) from the northwest (9 Sept 1997). ©Crown copyright.HE.

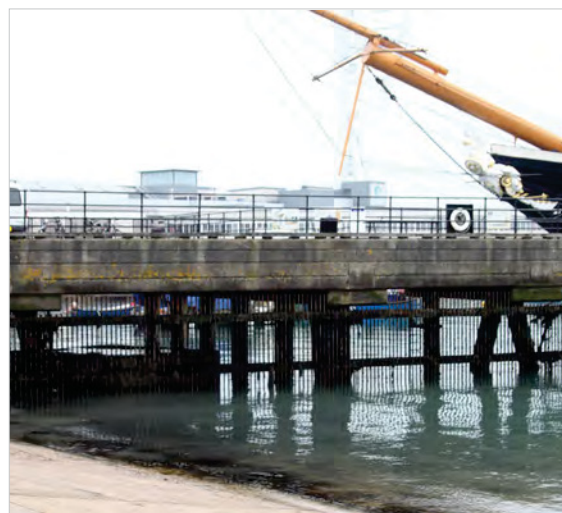


Fig. 218. HMS *Warrior* 1860 Jetty at Portsmouth (1987, PNBPT). A. Coats 2014. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 219. Photograph of Portsmouth Muster Bell (1791), mounted inside the Main Gate until 1922. Courtesy of Portsmouth Royal Dockyard Historical Trust.



Fig. 220. Photograph of the Muster Bell Plaque. Courtesy of Portsmouth Royal Dockyard Historical Trust.



*Above right:* Fig. 221. MD95/03032 (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing based on 1850 map showing changes in yellow and later buildings in red dotted lines. Section showing Portsmouth Mast Houses, indicating that the site was 'Destroyed by Fire 1941 (Enemy Action)', not acknowledging that Boat House No. 4 was there by then. It also shows the 'New Site of Muster Bell'. Reproduced by permission of Historic England.



Fig. 222. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. View of Portsmouth Mast Houses and slips before Boathouse No. 4 (1937–40) was built. It may be surmised that the model-maker began at the southwest corner and did not amend it to reflect actual later changes in the dockyard. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

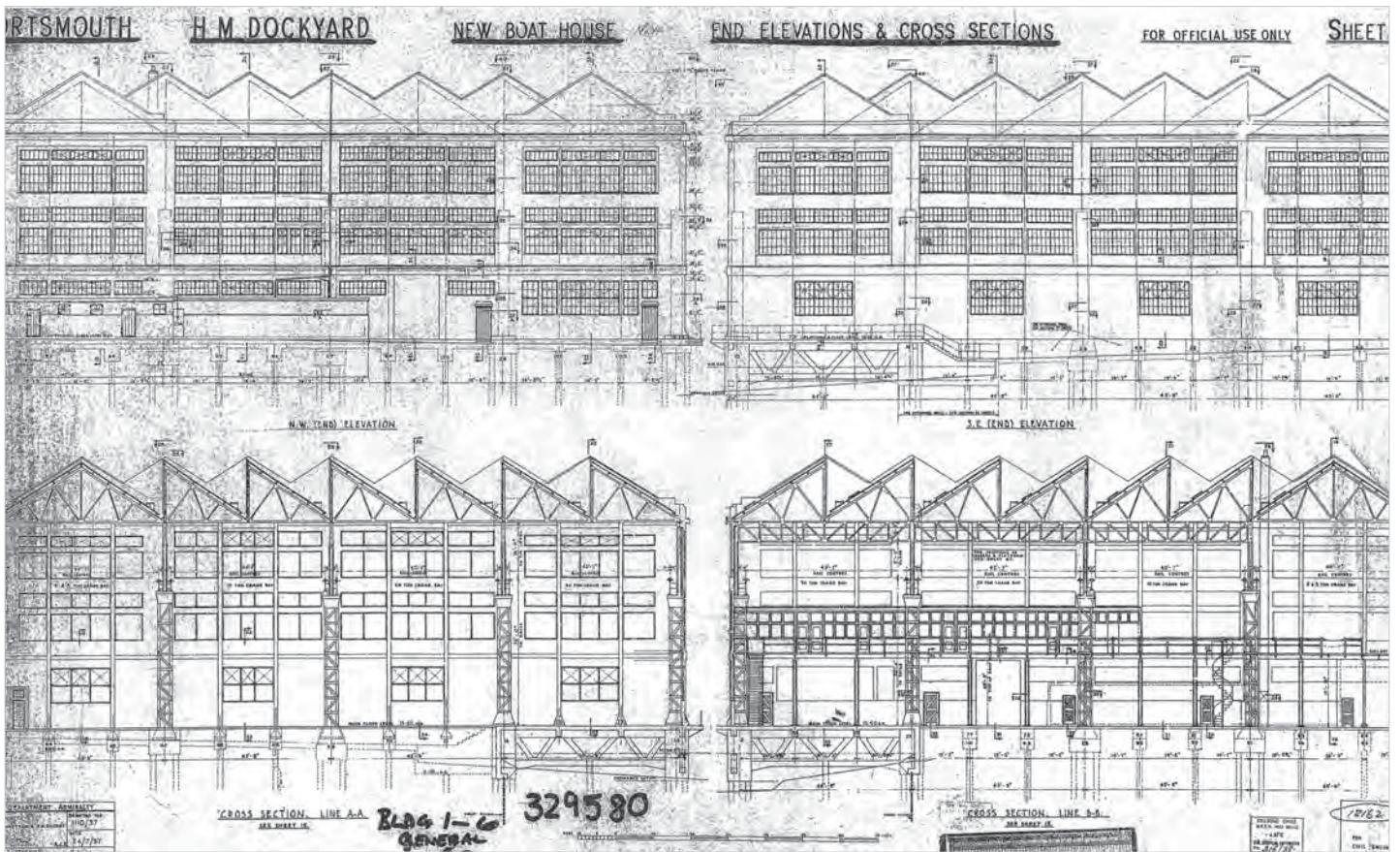


Fig. 223. New Boathouse HM Dockyard Portsmouth Elevations, Sheet 16. MPBW Drawing no. 1111/37, 24.7.37. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

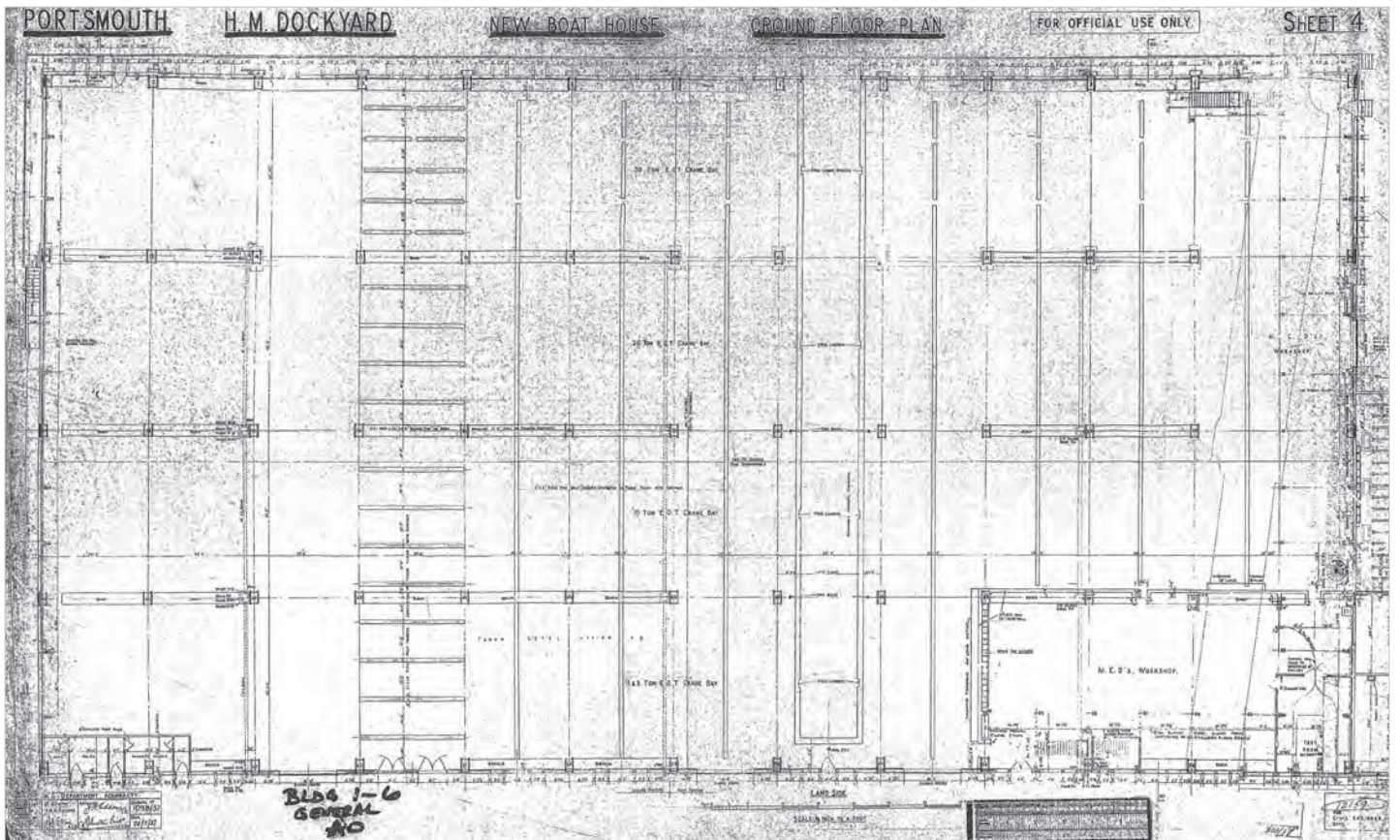
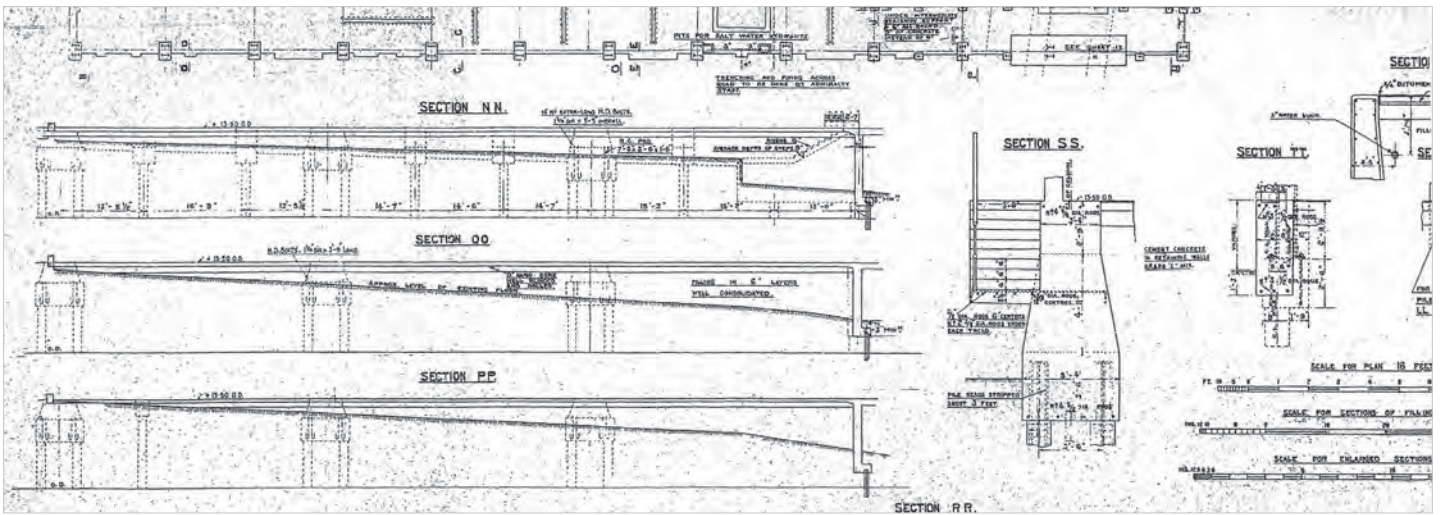
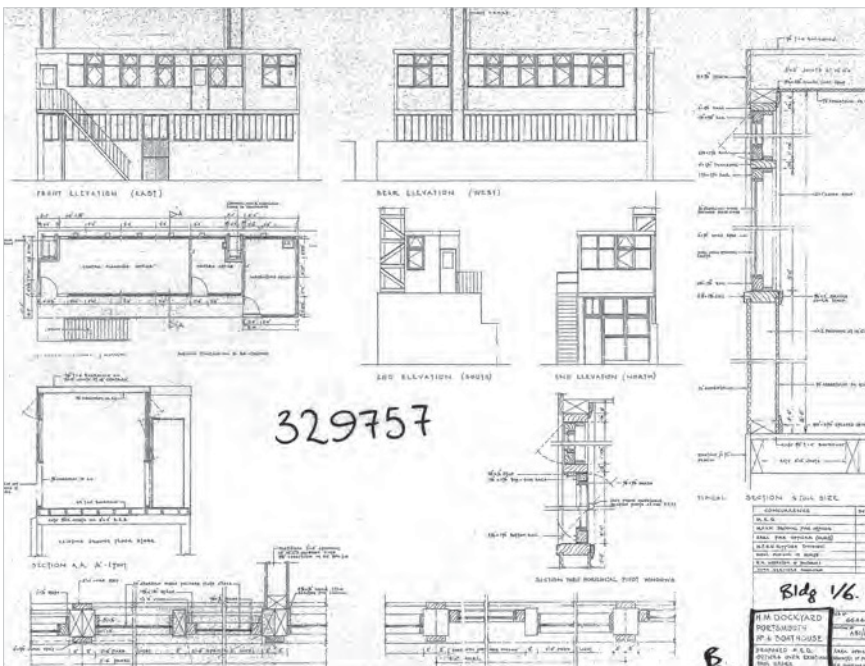


Fig. 224. New Boathouse HM Dockyard Portsmouth Ground Floor Plan, Sheet 4. Drawing no. 1098/37, by E. Scott for Civil Engineer in Chief, 24.7.37. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Above: Fig. 225. New Boathouse HM Dockyard Portsmouth Retaining Walls Sections. Drawing no. 1096/37, by J. D. W. Ball, 24.7.37. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Left: Fig. 226. Proposed M.E.D. Offices over existing Tool Store Elevations. HM Dockyard Portsmouth No. 4 Boathouse. MPBW Drawing no. AB1/1, 13.6.67. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

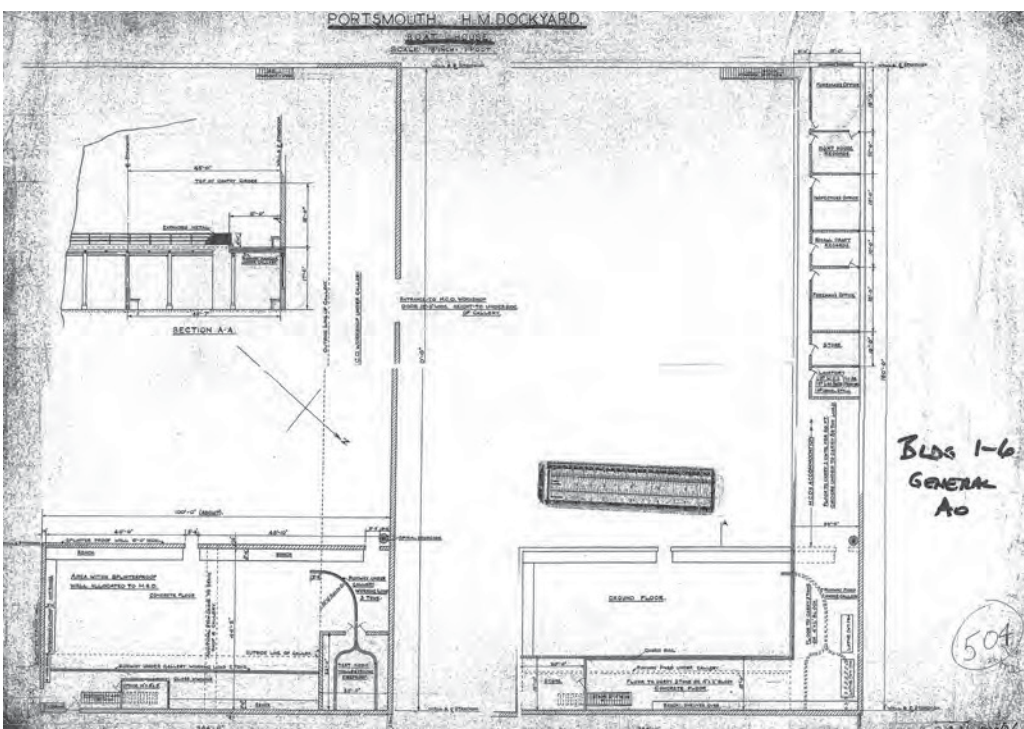


Fig. 227. Gallery Plan and Section, HM Dockyard Portsmouth Boathouse. Drawing no. 73036, (no date visible but probably associated with AB1/1). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 228. BB97/09275. Photograph of Portsmouth Boathouse No. 4 from the north west corner (28 July 1997). ©Crown copyright.HE.



Fig. 229. BB97/09274. West elevation of Boathouse No. 4 showing the concrete supporting trusses at high tide (28 Jul 1997). ©Crown copyright.HE.



Fig. 230. West (harbour) elevation of Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 231. Southern extent of the concrete and steel trusses forming the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) on its west (harbour) elevation. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 232. West elevation of the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) at low tide, showing its beams and trusses. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 233. Northern extent of the concrete and steel trusses forming the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) on its west (harbour) elevation, showing the shuttered concrete west seawall. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 234. Northern extent (east end) of the concrete and steel trusses forming the undercroft of Portsmouth Boathouse No. 4 (1940, 1/6) showing the eighteenth century Portland stone north seawall and slipway stones. Concrete repairs to the trusses were carried out in 2014–15. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 235. Lowest level of the eighteenth century Portland Stone slipway stones, held in place by a line of wooden posts, visible beneath a layer of solidified bags of concrete, below Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 236. Underside of a Portsmouth Boathouse No. 4 (1940, 1/6) concrete truss, showing its corroded iron reinforcing bar. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 237. Unused reinforced concrete beams lying beneath Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 238. Underside of Portsmouth Boathouse No. 4 (1940, 1/6) showing the shuttered concrete surface with twentieth century repairs using steel wire which has corroded. Concrete repairs were carried out in 2014–15. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 239. Southern extremity of the seawall of Portsmouth Boathouse No. 4 (1940, 1/6), sitting on the older and only operational patent slip in the naval base. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 240. Lock entrance to Portsmouth Boathouse No. 4 (1940, 1/6), showing the wooden lock gates which connect the channel running beneath Boathouse No. 4 and into the Mast Pond with the harbour. On the right is the battered eighteenth century Portland Stone sea wall, at the top a reinforced concrete beam supporting the building, and on the left shuttered concrete above Portland stone. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 241. Dock entrance to Portsmouth Boathouse No. 4 (1940, 1/6) on the west (harbour) elevation. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 242. Interior of the corrugated steel wall forming the south elevation of Portsmouth Boathouse No. 4 (1940, 1/6), showing the newly constructed stairway and mezzanine floor. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 243. Exterior of the corrugated steel wall forming the south elevation of Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

Fig. 244. Interior steel frame and beam of Portsmouth Boathouse No. 4 (1940, 1/6). A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 245. BB97/09263. Photograph of the spiral staircase in north end of Boathouse No. 4, Portsmouth (28 Jul 1997). ©Crown copyright.HE.



Fig. 246. Photograph of Portsmouth Boathouse No. 4 tunnel: west opening, view south, ready for pintles (PNBPT, 22.9.1999 no. 38). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 247. Photograph of Portsmouth Boathouse No. 4 tunnel: east opening, view south, ready for pintles (PNBPT, 22.9.1999 no. 40). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 248. Photograph of Portsmouth Boathouse No. 4 lock gates: east opening (PNBPT, 3.11.1999 no. 48). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 249. Photograph of Portsmouth Boathouse No. 4 lock gates: adjustments to gates (PNBPT, 1.3.2000 no. 53). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 250. BB97/012856. Photograph of the northwest corner of Portsmouth Boathouse No. 4 with Boathouse No. 4 Annex on the north side (28 Jul 1997). ©Crown copyright.HE.

Fig. 251. Statue of William III (1718) in the Porter's Garden at Portsmouth. A. Coats 2008. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 252. Statue of Captain Robert Falcon Scott (1915) at the entrance to the Porter's Garden at Portsmouth. A. Coats 2015. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 253. Photograph of College Road, 1980s, as part of the naval base, showing on the right the nineteenth and twentieth century buildings beyond the Porter's Lodge, then the Police Quarters and the Naval Academy in the distance. The unrefurbished Boathouse No. 6 is in the right, beyond the Sail Loft. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 254. Photograph of College Road, late 1990s, after the nineteenth and twentieth century buildings have been demolished, to reveal the Dockyard Wall. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 255. Interior of Portsmouth Pay Office (1808, 1/11), showing the cast iron bases to the vaulted brick ceiling columns. A. Coats 2012. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 256. P241/53 FL00981/01/001. Photograph showing progress of the reconstruction of the Former Naval Academy's cupola, following its bomb damage in 1941 (09 Mar 1953). Reproduced by permission of Historic England.



Fig. 257. AA98/04652. Photograph of the west elevation of Portsmouth Boathouse No. 6 showing boats hauled onto its ramp and the Mast Pond holding many dockyard boats (1956). Reproduced by permission of Historic England.

Fig. 258. BB012873. Photograph of the west elevation of Portsmouth Boathouse No. 6 with fewer boats in the Mast Pond after the heritage area was established and before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.



Fig. 259. Pre-1985 photograph of Boathouse No. 6. Courtesy of Portsmouth Royal Dockyard Historical Trust.



Fig. 260. BB012872. Photograph of Portsmouth Boathouse No. 6 from the southwest before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.



Fig. 261. BB012875. Photograph of the ground floor interior of Portsmouth Boathouse No. 6 from the northeast, before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.



Fig. 262. BB012878. Photograph of the first floor interior of Portsmouth Boathouse No. 6 from the west, before refurbishment in 2001 (11 Jun 1991). ©Crown copyright.HE.



Fig. 263. 15790/04 SU 6200/8. Aerial photograph from the west of the bombed Storehouse No. 6 (right of centre) before its refurbishment in 2001, and the buildings to the south of College Road (centre right) before they were demolished to create the Porter's Garden in 2000 (9 Sept 1997). ©Crown copyright.HE.



Fig. 264. Portsmouth Boathouse No. 6. Photograph of the ground floor, looking east showing the cast iron pillars and trusses. PNBPT Record Photograph no. G41 (June 1998). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 265. Portsmouth Boathouse No. 6. Photograph of the south elevation. PNBPT Record Photograph no. E02 (June 1998). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

*Right:* Fig. 266. Portsmouth Boathouse No. 6. Photograph of the east end, south and east elevations, showing the missing roof after the air raid. PNBPT Record Photograph no. E07 (June 1998). Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

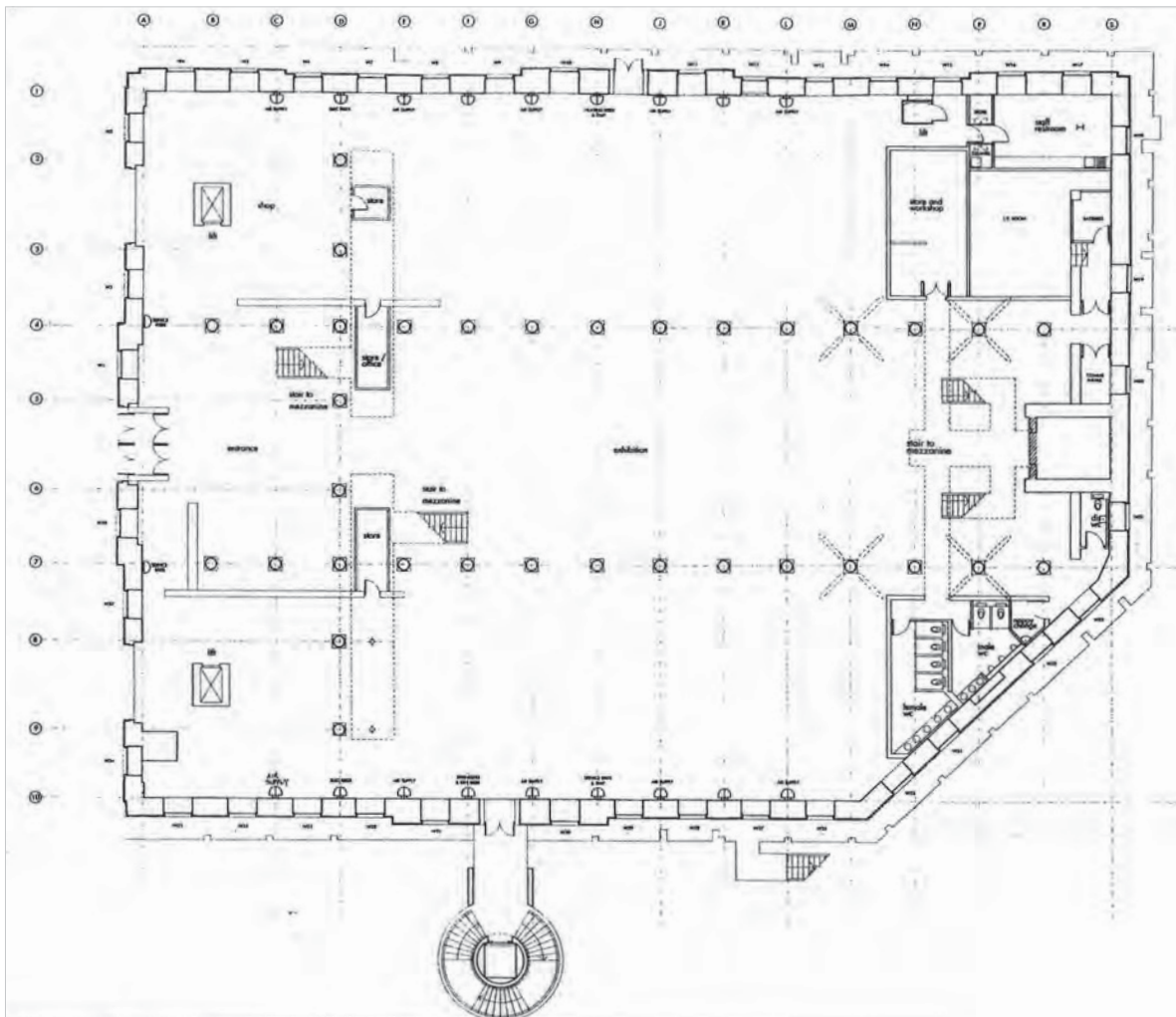


Fig. 267. Portsmouth Boathouse No. 6. Ground Floor Plan (25.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/530 PA. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

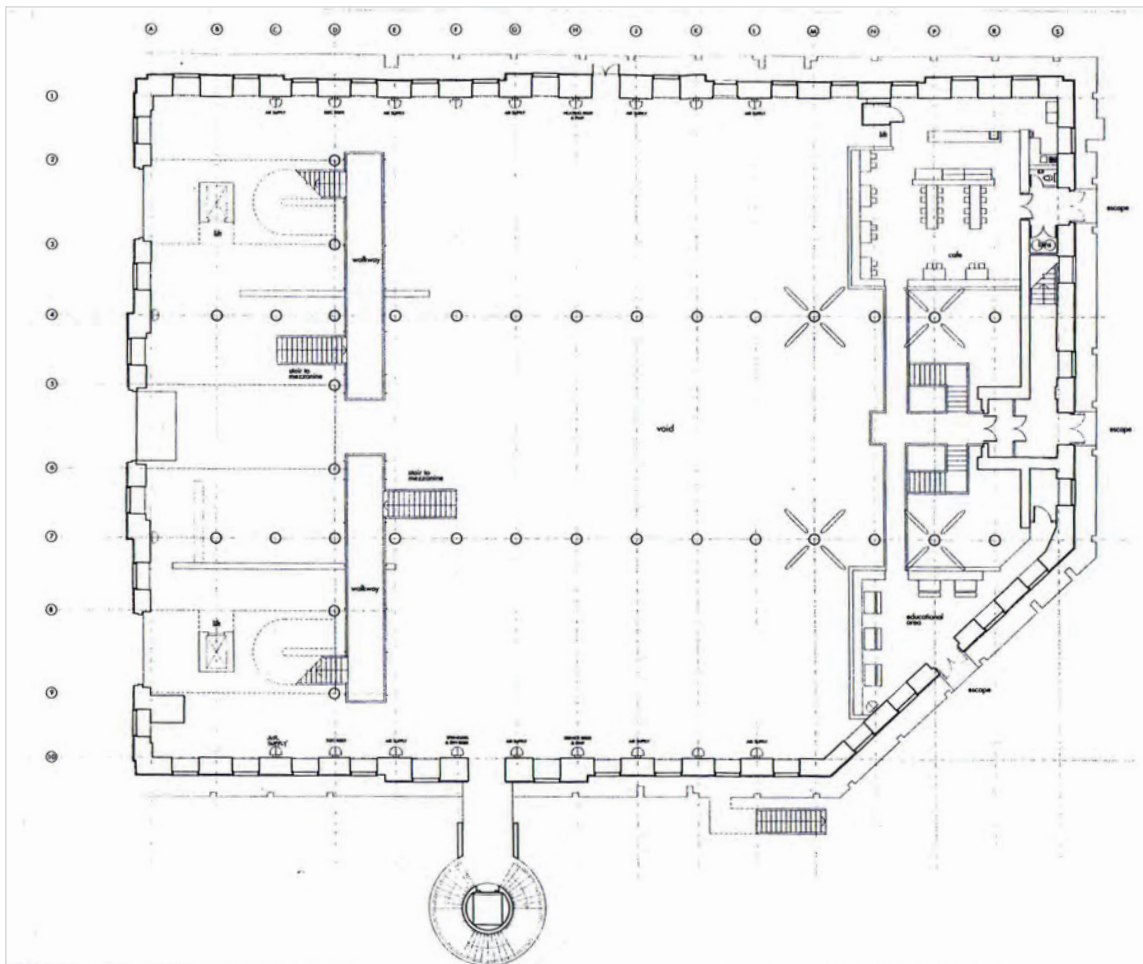


Fig. 268. Portsmouth Boathouse No. 6. Ground Floor Mezzanine Plan (20.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/531 PA. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

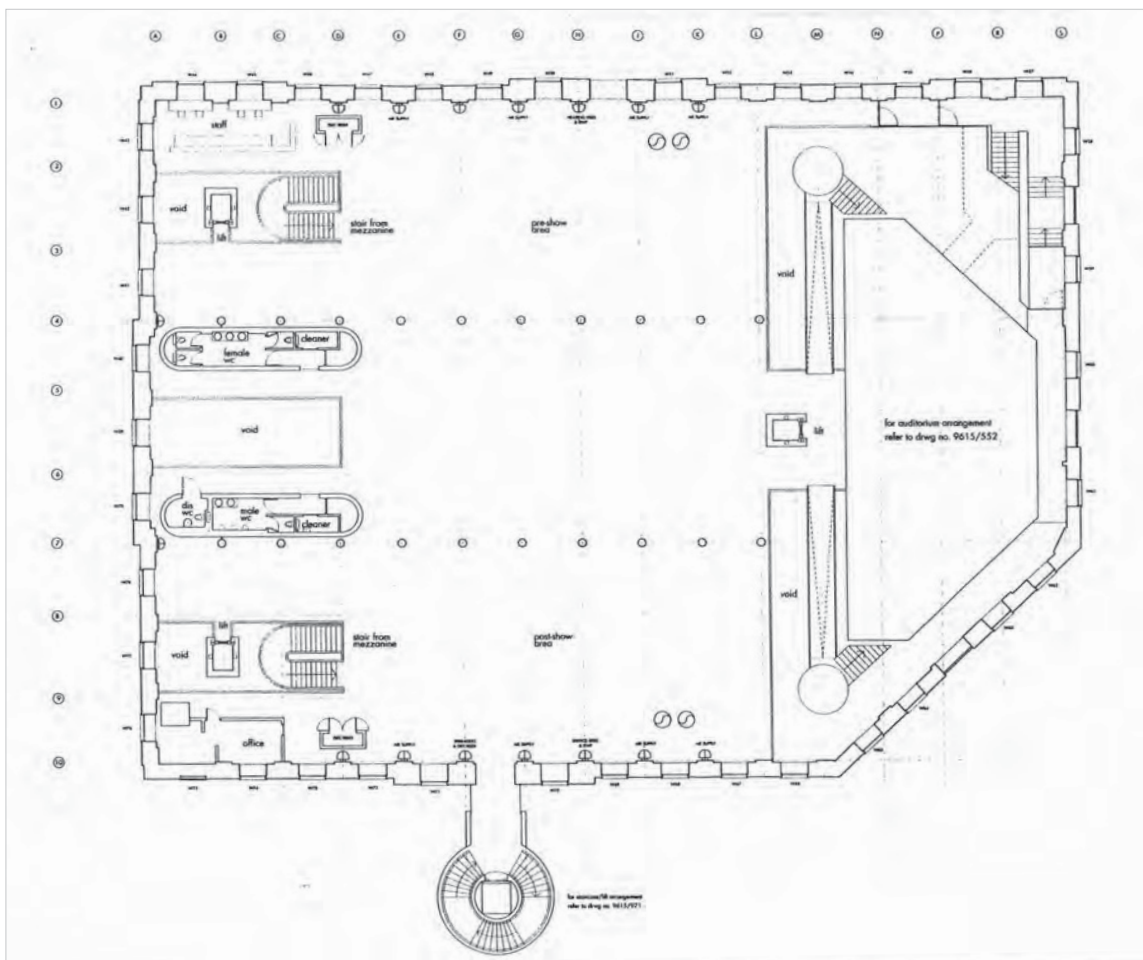


Fig. 269. Portsmouth Boathouse No. 6. First Floor Plan (20.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/532 PA. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

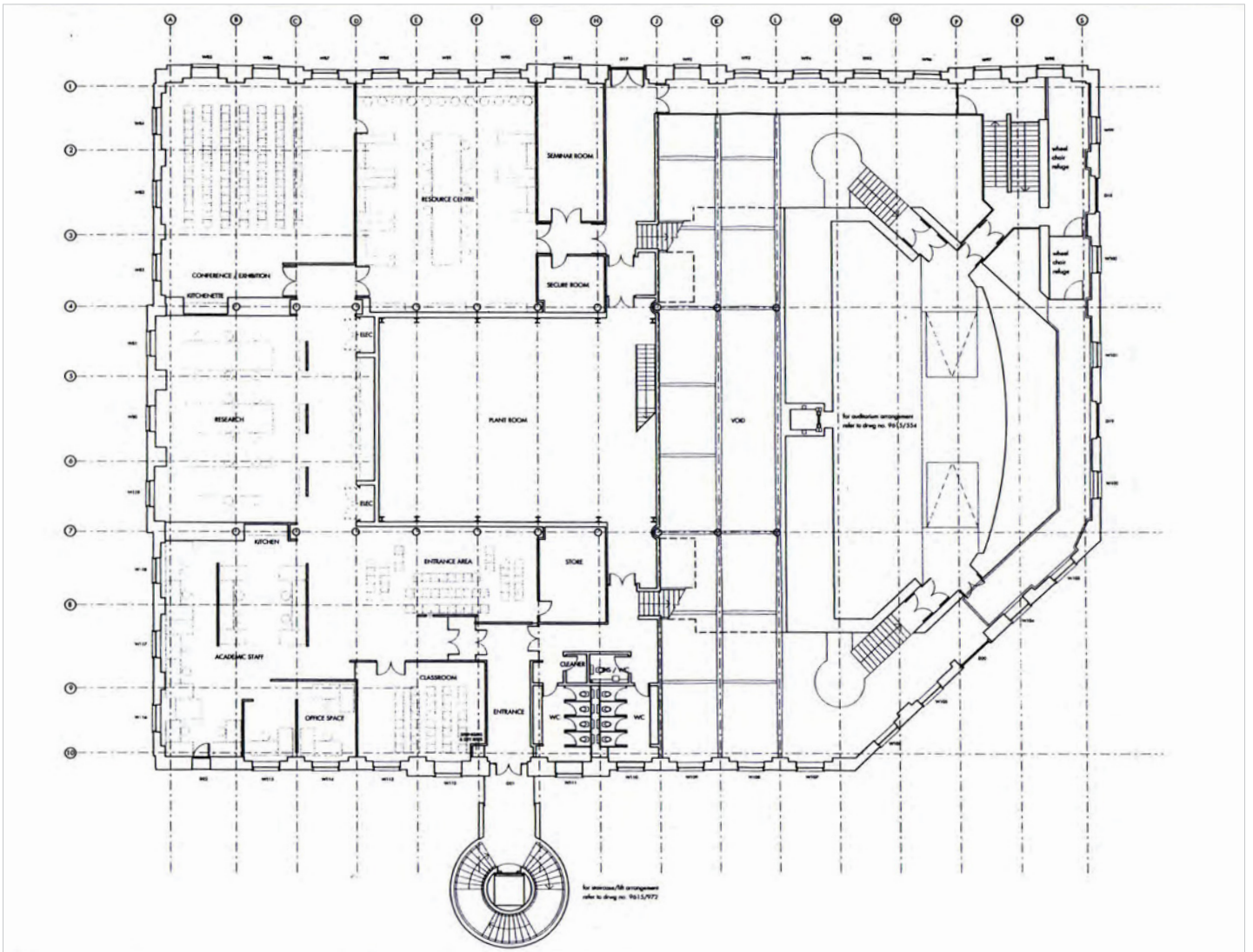


Fig. 270. Portsmouth Boathouse No. 6. Second Floor Plan (20.10.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/533 PB. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 271. Boathouse No. 6 East Elevation Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/522 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 272. Boathouse No. 6 North Elevation Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/521 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 273. Boathouse No. 6 South Elevation Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/523 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.

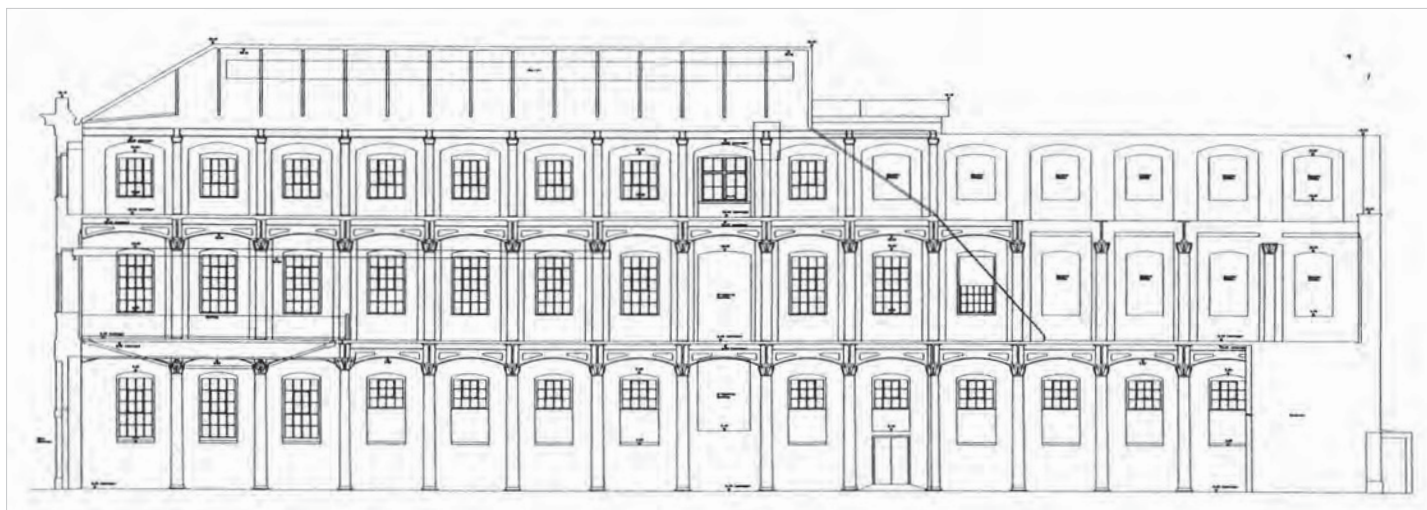


Fig. 274. Boathouse No. 6 Section AA Survey (16.11.98). PNBPT, MacCormac Jamieson Prichard drawing no. 9615/525 A. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.





Fig. 275. AA026355. Photograph of the eastern interior of Portsmouth Boathouse No. 6 showing the cinema structure inserted within the area damaged by a bomb in the Second World War (2001). ©Historic England.



Fig. 277. BB003709. Photograph of the interior of Portsmouth Boathouse No. 7 from the northwest before its refurbishment in 1993–94 to house the Dockyard Apprentice Exhibition, a café and a nautical shop (11 Jun 1991). ©Crown copyright.HE.



Fig. 278. Entrance to Sunny Walk Offices (1950, 1/31). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 276. PK318/11 FL00982.02.001. Photograph of the conversion of Boathouse No. 5 (1/28) and the Sail Loft (1/27) into the Mary Rose Museum (8 Mar 1984). ©Crown copyright.HE.



Fig. 279. Semaphore Tower and Rigging House fire 1913, saluting party. Image 1499A/3 supplied by PMRS, courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 280. Photograph by Stephen Cribb, 'The last of the Old Semaphore Tower falling down after the day of the fire in 1913.' PMRS, PORMG 1945/652/5. Photograph reproduced with the kind permission of Portsmouth Museums and Records Service.



Fig. 281. Eastern elevation of the former Sail Loft/Rigging House (1784, 1/40-49), Portsmouth Semaphore Tower (1810–24 1/40) and Lion Gate (1778, 1/50A). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 282. Lion pediment of Portsmouth Lion Gate (1778, 1/50A), one of Portsea's town fortifications (formerly situated close to the entrance to Anglesey Barracks and the present HMS *Nelson* Gate), incorporated into the west (seaward) arch of the Sail Loft/Rigging House (1784, 1/40-49) and Semaphore Tower (1810-24, 1/40) in 1929. A. Coats 2013. Reproduced with the permission of the MoD.

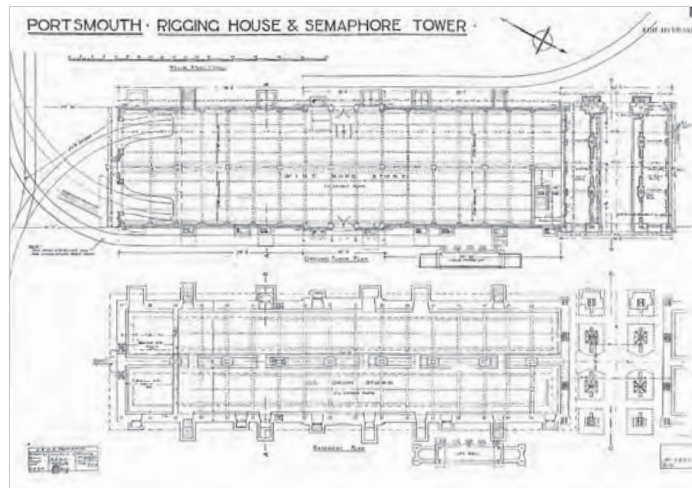


Fig. 284. Portsmouth, Rigging House and Semaphore Tower, Basement and Ground Floor Plans, (2.11.1926). 1/50. Record Drawing no. 1, A22/26, by A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

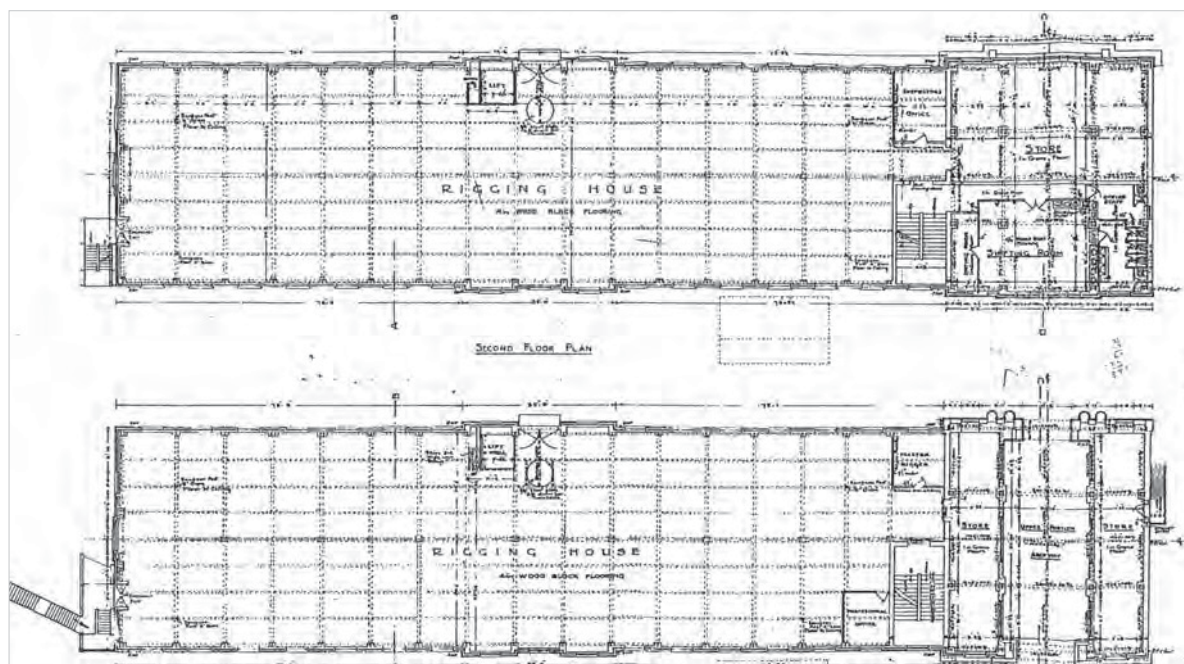


Fig. 285. Portsmouth, Rigging House and Semaphore Tower, 1st and 2nd Floor Plans, (2.11.1926). 1/50. Record Drawing no. 3, A23/26, L291 by A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

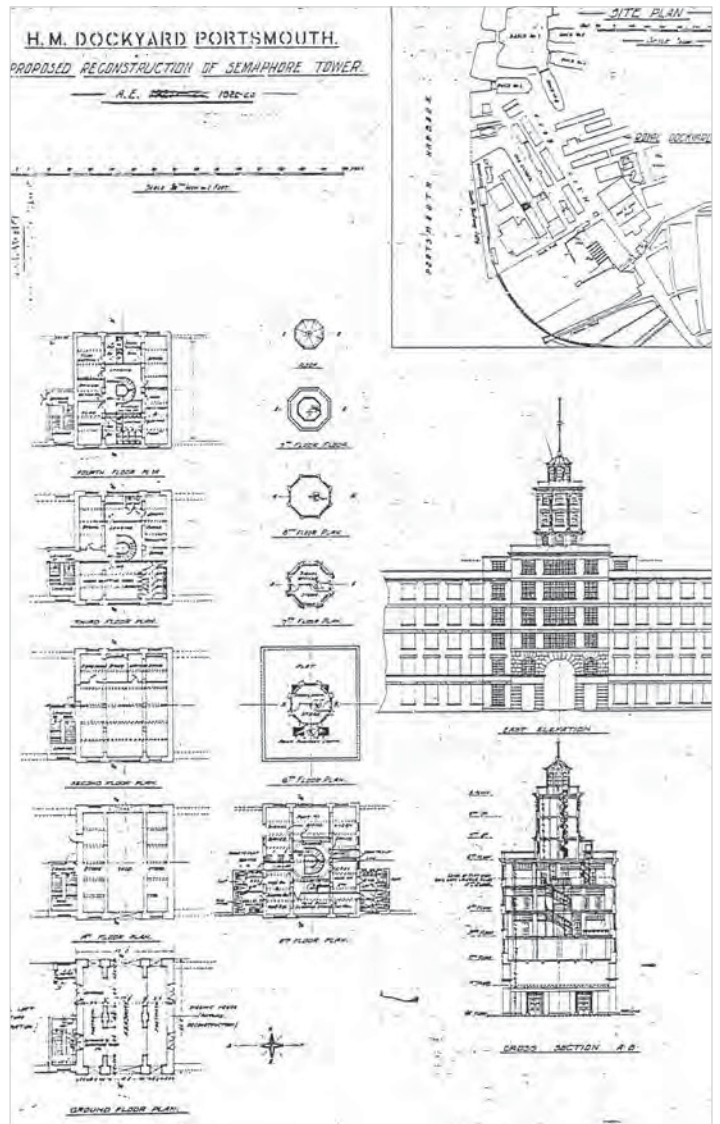


Fig. 283. Portsmouth Semaphore Tower (1922-23). 1/50. Record Drawing, HM Dockyard Portsmouth. Proposed Reconstruction of Semaphore Tower A.E., SCE, Drawing no. L286. BAES. Reproduced with the permission of the MoD.

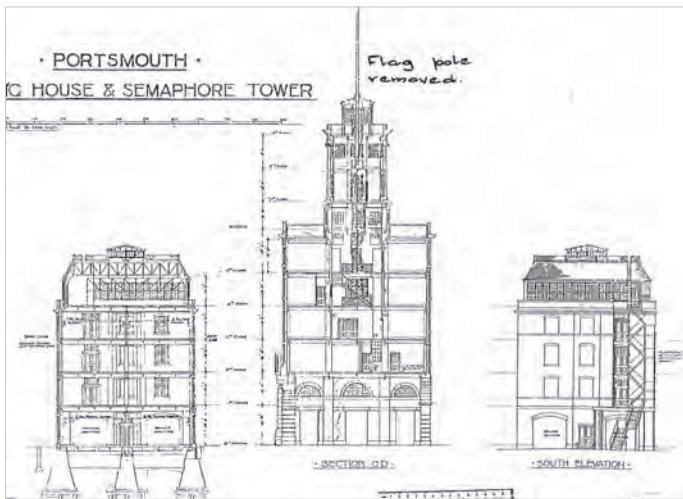
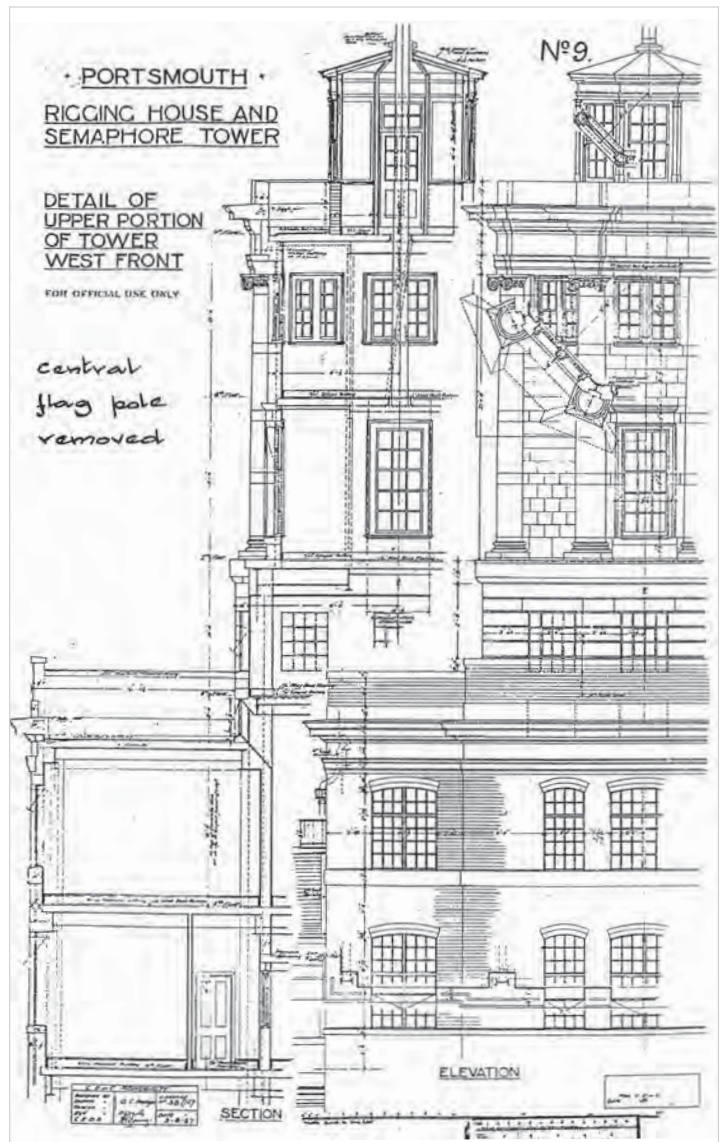


Fig. 286. Portsmouth, Rigging House and Semaphore Tower, Flag pole removed, sections and south elevation (2.11.1926). 1/50. Record Drawing No. 5, A26/26 A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.



Right: Fig. 288. Portsmouth, Rigging House and Semaphore Tower, Detail of Upper Portion of Tower West Front, central flagpole removed, elevation (2.8.1927) 1/50. Record Drawing no. 9, 38/27 by A. C. Hodges. CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.

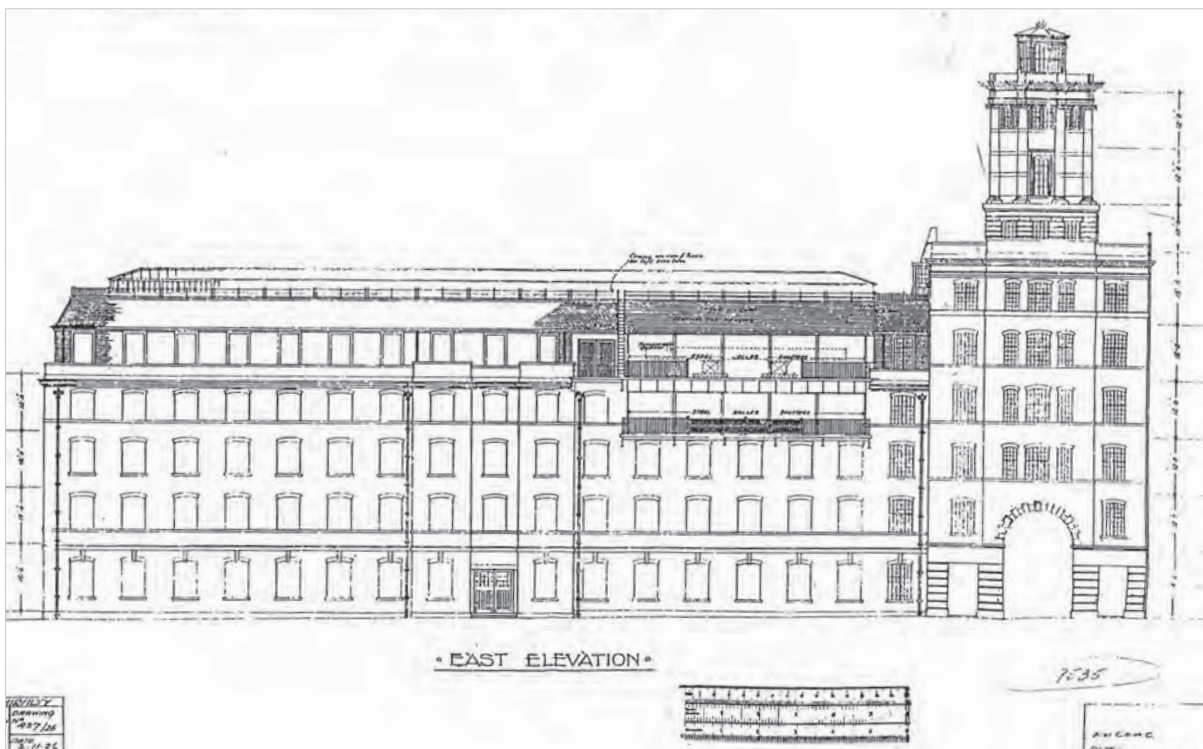


Fig. 287. Portsmouth Rigging House and Semaphore Tower, east elevation (2.11.1926) 1/50. Record Drawing no. 6, A27/26 by A. C. Hodges *et al.*, CE-in-C Admiralty. BAES. Reproduced with the permission of the MoD.



Fig. 289. 15790/05 SU 6200/7. Aerial photograph of the Semaphore Tower and Rigging House from the west (9 Sept 1997). ©Crown copyright.HE.



Fig. 290. 15800/33 SU 6200/17. Aerial photograph of the Semaphore Tower and Rigging House from the east. (9 Sept 1997). ©Crown copyright.HE.



Fig. 291. AA045925. Photograph of the interior of the Chain Test House looking south. (9.7.2003). ©Historic England.



Fig. 292. AA045923. Photograph of the floor of the Chain Test House, the pathway consisting of Portsmouth Dockyard cast iron ballast pigs (9.7.2003). ©Historic England.

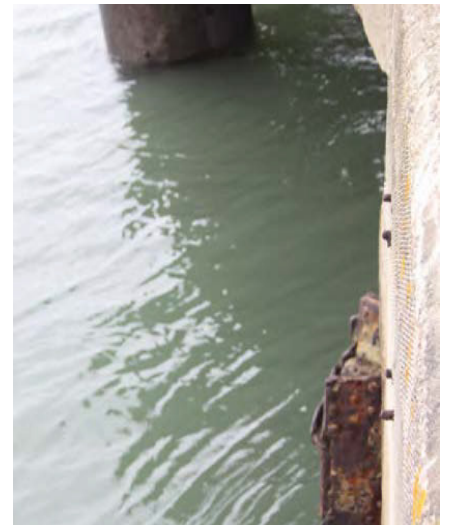


Fig. 293. Remaining cast iron elements of the Portsmouth Railway Swing Bridge to South Railway Jetty, c.1876. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 294. Portsmouth Railway Waiting Room (1878, 1/47) on South Railway Jetty. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 295. Portsmouth Railway Shelter (1893, 1/45) on South Railway Jetty, re-sited since c.2000 on the west quay of the North Camber. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 296. Former Office for the Portsmouth Captain of the Yard/Harbour Master (c.1850, 1/53), now the Disposal & Reserve Ships Organisation. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 297. 'Two low buildings with steam coming out of pipes, railway line in front, dock in right foreground.' (c.1920) Photograph looking southwest towards the buildings, formerly on the site of the Victory Gallery, which included a caulkers' cabin, a divers' gear store and an engine house office (The Princes Regeneration Trust, 2006; Lambert, 1993). Dock No.1 is in the foreground and the Former Office for the Captain of the Yard/Harbour Master (1/53) is in the background. Image 404A/6/17 supplied by PMRS, courtesy of Portsmouth Royal Dockyard Historical Trust.



Fig. 298. Rainwater hopper dated 1927, Portsmouth Victory Gallery (1938, 1/57, NMRNP). A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

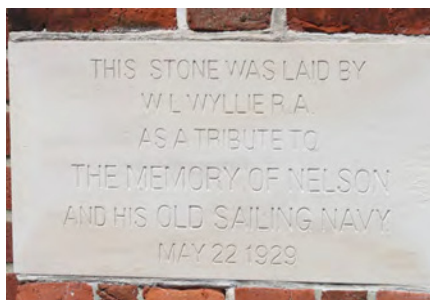


Fig. 299. Stone laid by W. L. Wylie in 1929, re-cut in 1988, Portsmouth Victory Gallery (1938, 1/57, NMRNP). A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



Fig. 300. Rainwater hopper dated 1962, Portsmouth Victory Gallery (NMRNP, 1938, 1/57). A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

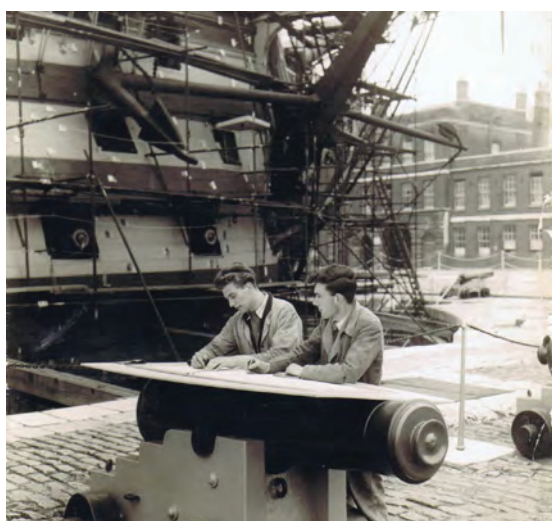


Fig. 301. Dockyard apprentices monitoring HMS *Victory* for hull movement in Portsmouth Dockyard, c.1954. Reproduced courtesy P. Nex.



Fig. 302. J186/01/71. Photograph of the west elevations of Storehouse Nos 9, 10 and 11 (28 Apr 1971). ©Crown copyright.HE.



Fig. 303. AA98/04645. Portsmouth Dockyard prints FL00981. Photograph of the eastern elevation of Portsmouth Storehouse No. 11 taken from outside South Office Block Annexe (1931, 1/87C) by Eric de Mare (1956). The statue of Captain Robert Falcon Scott was in this spot following the Second World War until 2000, when it was moved to the Porter's Garden. Reproduced by permission of Historic England.



Fig. 304. Three postcards of Portsmouth Dockyard Museum (n.d.), probably within one of the three Georgian storehouses. Courtesy George Malcolmson Collection.



Fig. 305. J057/01/72. Storehouse No. 11, north end, conversion to the McCarthy Museum (28 Apr 1971). ©Crown copyright.HE.

Fig. 306. J057/03/72. (28 Apr 1971). Photograph of Storehouse No. 11, ground floor conversion to the McCarthy Museum. ©Crown copyright.HE.



Fig. 307. J106/04/72. Photograph of Storehouse No. 11, ground floor conversion to the McCarthy Museum (28 Apr 1971). ©Crown copyright.HE.



Fig. 308. J186/05/71. Photograph of Storehouse Nos 9, 10 or 11 (28 Apr 1971). ©Crown copyright.HE. It is hoped that the particular storehouse can be identified.



Fig. 309. J186/06/71. Photograph of Storehouse No. 9, 10 or 11 (28 Apr 1971). ©Crown copyright.HE. It is hoped that the particular storehouse can be identified.



Fig. 310. J360/06/72. Photograph of Storehouse Nos 9, 10, 11: Mr Hartley's fire plates on first floor joists and floorboards (c.1971). ©Crown copyright.HE.



Fig. 311. AA98/04650. Portsmouth Dockyard prints FL00981. Photograph by Eric de Mare of the eastern elevation of Portsmouth Storehouse No. 10, with the railway track in evidence. (1956). The doorways were modified for the NMRN twentieth century Babcock Galleries (2014). Reproduced by permission of Historic England.



Fig. 313. Ground floor of Portsmouth Storehouse No. 10 (1776, 1/59) detail of renewed brick arches displaying twentieth century ordnance in the twentieth century Babcock Galleries (2014) A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Above: Fig. 312. Ground floor of Portsmouth Storehouse No. 10 (1776, 1/59) looking south along the eastern bay, showing renewed brickwork and timber pillars and beams during its refurbishment for the twentieth century Babcock Galleries (2014) A. Coats 2013. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 314. Currently the rear (west) elevation of Portsmouth Storehouse No. 10 (1763, 1/59), which was originally the front elevation



facing the North Camber, showing the new glazed entrance refurbished for the twentieth century Babcock Galleries (2014). A. Coats 2014. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



Fig. 315. A rear (west) door of Portsmouth Storehouse No. 10 (1776, 1/59), facing the North Camber. A. Coats 2014. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



Fig. 316. A refurbished rear pediment of Portsmouth Storehouse No. 10 (1776, 1/59), showing the access doors to the upper floor and cast iron bracket (2014). A. Coats 2014. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



Fig. 317. J188/01/71. Photograph of Storehouse Nos 15, 16 and 17 (28 Apr 1971) from the west, showing the former site of Storehouse No. 14 or West Sea Store (1771), which suffered a direct hit on 24 August 1940. ©Crown copyright.HE.



Fig. 318. J188/03/71. Photograph of Storehouse Nos 15, 16 and 17 (28 Apr 1971) from the east, showing 'GR 1771' inserted in darker bricks on the east elevation of Storehouse No. 16. ©Crown copyright.HE.





Fig. 320. Keystone (probably twentieth century) on the north elevation of the vehicular arch cut through the former Portsmouth Great Ropehouse (1771, 1/65) in 1868. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 319. Arches cut through the former Portsmouth Great Ropehouse (1771, 1/65), north elevation, when it ceased making rope in 1868. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 321. AA98/04648. Portsmouth Dockyard prints FL00981. Photograph (1956) by Eric de Mare of the western gable of Portsmouth Great Ropehouse (1771), before the roof and windows were substantially altered in the 1960s. Reproduced by permission of Historic England.

Fig. 322. P96/01/60. Photograph of the interior of the Ropehouse, undergoing conversion (June 1960). Reproduced by permission of Historic England.

Fig. 323. E 48/39. Detail of the west elevation of St Ann's Church, Portsmouth. Reconstruction Drawing 1939, signed Diana V. Cundall. Reproduced by permission of Historic England.

Fig. 324. E 48/39. Detail of Cupola, St Ann's Church, Portsmouth. Reconstruction Drawing 1939, signed Diana V. Cundall. Reproduced by permission of Historic England.



Fig. 325. PK318/10. Photograph of the Fire Station personnel, police and divers on Parade (c.1900). HE. Reproduced by permission of Historic England.

Fig. 326. AA034962. Photograph of Portsmouth Fire Station (former water tower), north end looking south, with the Ropehouse in the background (2005). ©Historic England.



Fig. 327. Original corrugated iron and fittings inside Portsmouth Fire Station (1843, 1/77). A. Coats 2012. Reproduced with the permission of the MoD.



Fig. 328. Rainwater hopper dated 1961, west elevation of Portsmouth Fleet Headquarters, Jago Road (1961, 1/80). A. Coats 2014. Reproduced with the permission of the MoD.



Fig. 329. Western entrance to a Portsmouth nineteenth century courtyard surrounded by stores and workshops (c.1850–90, 1/81) on the site of the original Commissioner's House (1666). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 330. In Portsmouth Admiral's Walk, a seven foot wide section of setts running along the north side of 1/81 (c.1850–90). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 331. Rainwater hopper dated 1931 on Portsmouth South Office Block Annexe (1931, 1/87C). A. Coats 2013. Reproduced with the permission of the MoD.

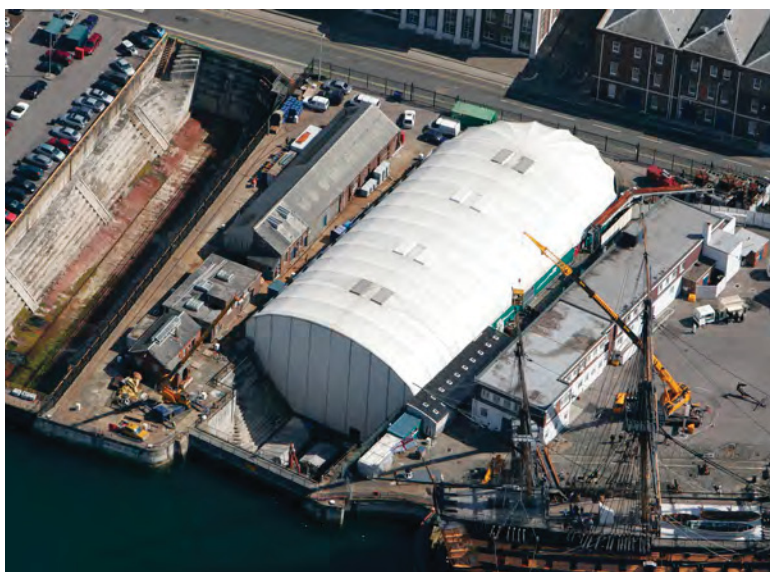


Fig. 332. 23852/25 SU 6300/79. Aerial photograph of the Mary Rose Ship Hall in Dock No. 2 from the northwest, before its redesign and the demolition of the buildings either side in 2010 (11 Apr 2005). ©Historic England.

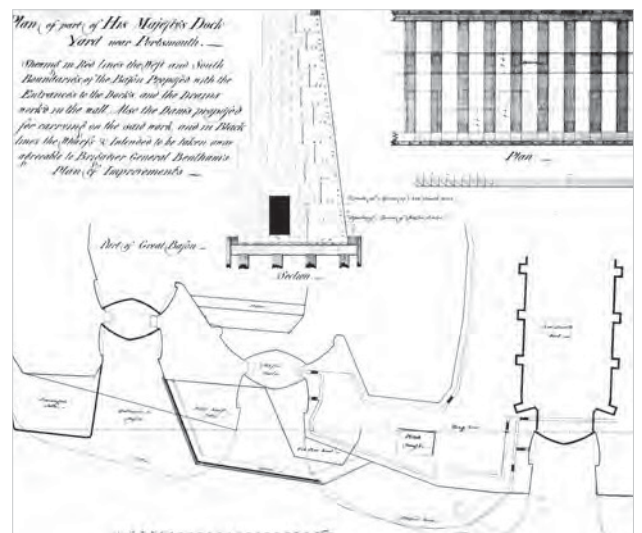


Fig. 333. MD95/03099 (c.1797). Plan and Sections, Great Basin Entrance and South Dock, Plan of Improvements proposed by Samuel Bentham. HM Dockyard, Portsmouth. Reproduced by permission of Historic England.



Fig. 334. J195/01/71. Photograph of Basin No. 1 and Docks 1-5 looking east pre-*Mary Rose* and pre-Monitor HMS *M33* (28 Apr 1971). ©Crown copyright.HE.



Fig. 335. Dock No. 1 (6.1.1909). Photograph of completed extension, looking northeast. TNA, ADM 195/79 (1857–1915). 100 photographs depicting construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

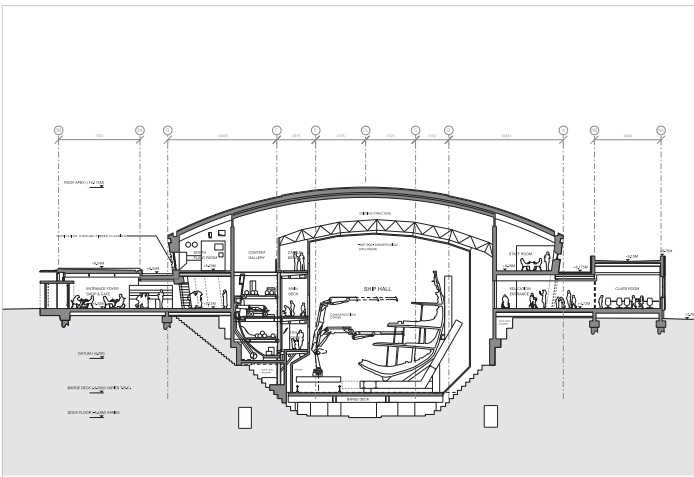


Fig. 336. Cross-section of *Mary Rose* within Dock No. 3 (1803). Wilkinson Eyre Architects, 2012.

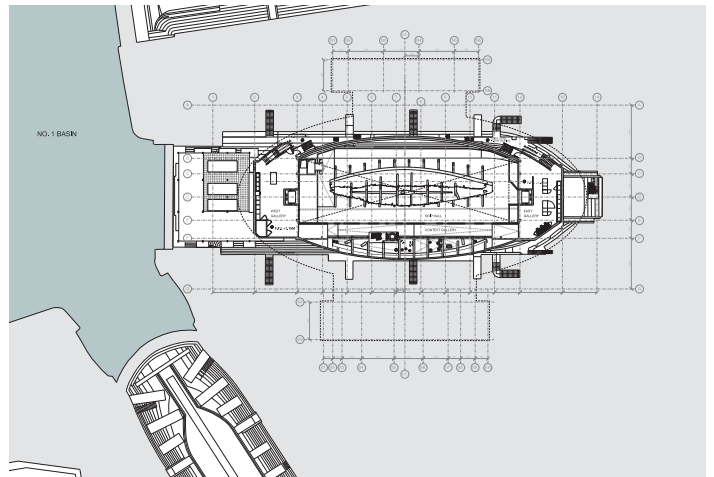


Fig. 337. Lower ground floor plan of *Mary Rose* within Dock No. 3 (1803). Wilkinson Eyre Architects, 2012.



Fig. 338. Western profile of the new timber-clad *Mary Rose* Museum at Portsmouth (2013). A. Coats 2013. PNBPT. Reproduced with the kind permission of Portsmouth Naval Base Property Trust.



Fig. 339. Portsmouth Dock No. 6 (1700), showing disintegration of the lower altar stones through weathering. Following the straightening of the western jetties for the new *Queen Elizabeth* class aircraft carriers in the early 2000s, it is no longer connected to the harbour and no longer has the environmental protection of seawater. A. Coats 2012. Reproduced with the permission of the MoD.



Fig. 340. Portsmouth Joiners Shop 3.2.1911. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

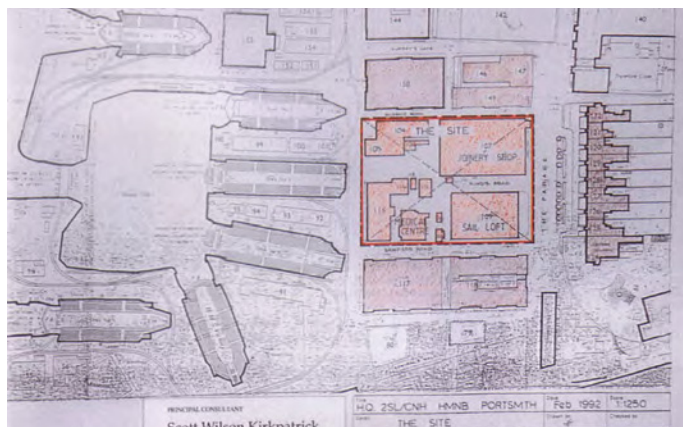


Fig. 341. Portsmouth Victory Building 1/100 (Feb 1992). BAES. The [former] Site. Defence Works Service (Nov 1991). Option Study Annex A. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth. Reproduced with the permission of the MoD.

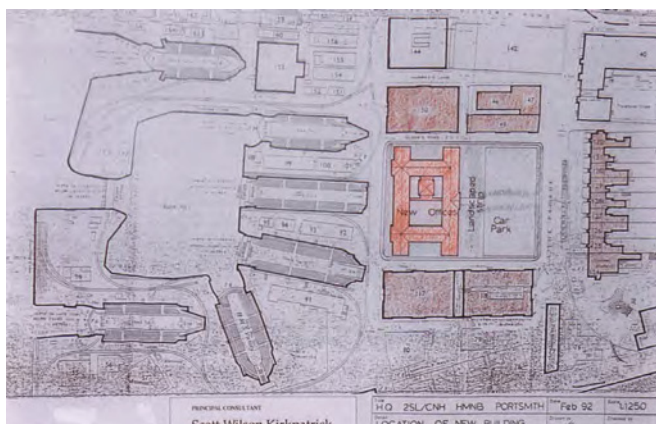


Fig. 342. Portsmouth Victory Building 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, Location of New Building. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

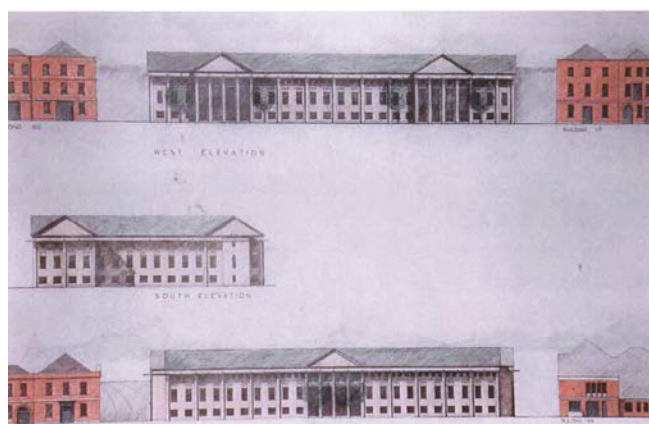


Fig. 343. Portsmouth Victory Building. 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, west, south, east elevations. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

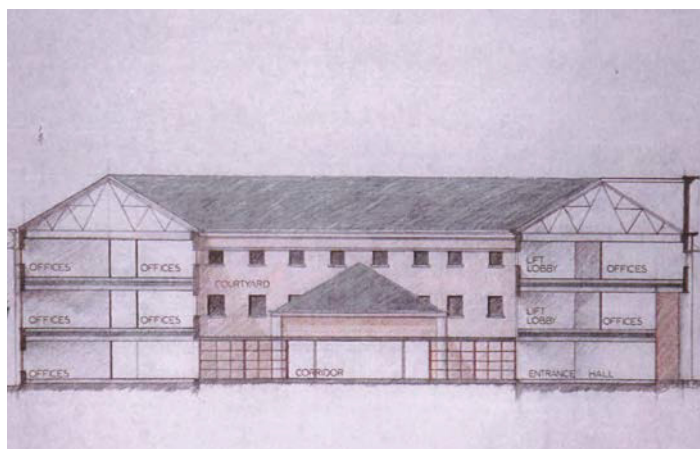


Fig. 344. Portsmouth Victory Building 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, north elevation. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

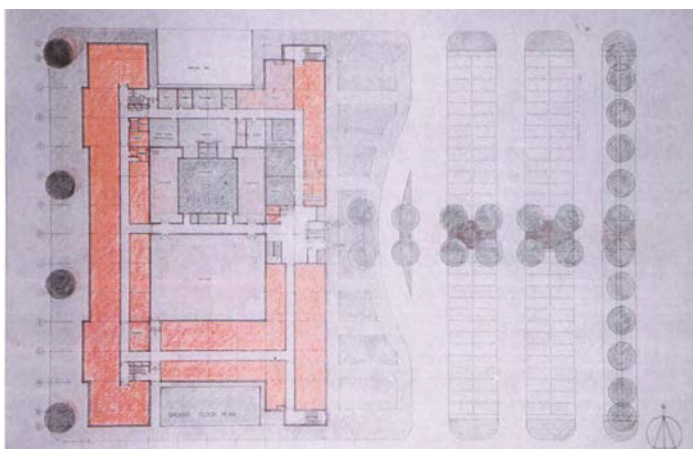


Fig. 345. Portsmouth Victory Building 1/100 (Feb 1992). BAES. Cecil Denny Highton for Scott Wilson Kirkpatrick, HQ 2SL/CNH HMNB Portsmouth, plan. Defence Works Service (Nov 1991). Option Study Annex A. Reproduced with the permission of the MoD.

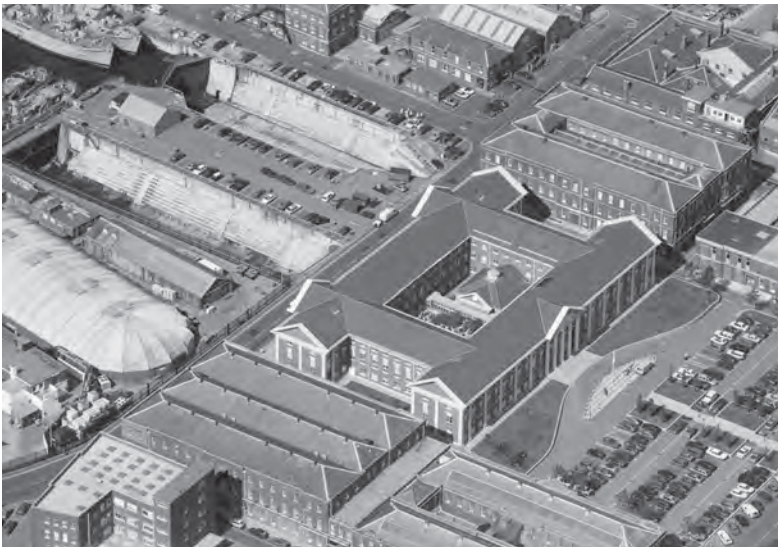


Fig. 346. 15800/32 SU 6200/16. Aerial photograph of the Victory Building from the southeast (9 Sept 1997). ©Crown copyright.HE.



Fig. 347. One of the concrete entrance piers, east of Portsmouth Victory Building (1993, 1/100), dated 1984. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 348. J198/01/71. (28 Apr 1971). Photograph of Storehouse No. 25, southwest corner. ©Crown copyright.HE.



Above right: Fig. 349. J198/04/71. Storehouse No. 25 doorway (28 Apr 1971). ©Crown copyright.HE.

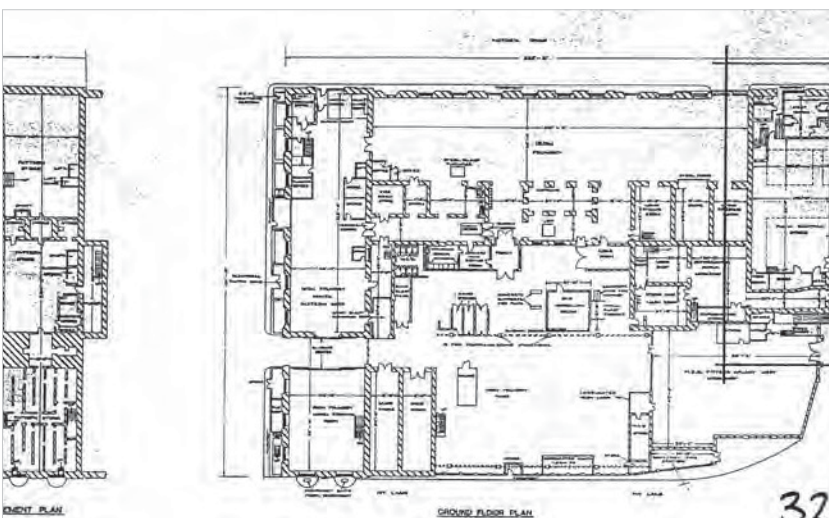


Fig. 350. Portsmouth Iron Foundry and Subsidiary Buildings, Basement and Ground Floor Plans, BAES. MPBW (June 1964). 1/136 and 1/140. Drawing no. 980/64. Reproduced with the permission of the MoD.

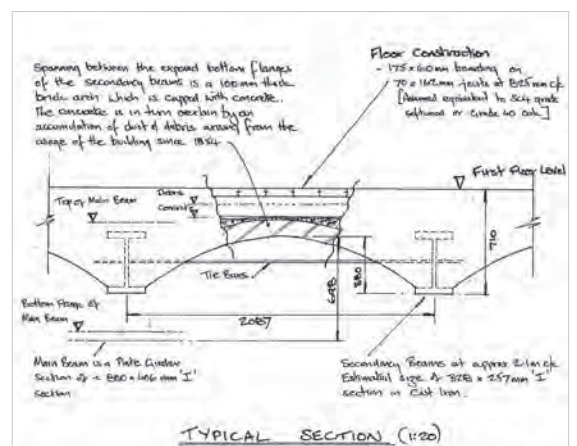


Fig. 351. Portsmouth Iron Foundry Structural Appraisal, First Floor Detail section drawing. 1/136. BAES. Evans Grant via Unicorn (Feb–Apr 1997). Reproduced with the permission of the MoD.



Fig. 352. Former Portsmouth Chief Inspector's Office (1857, 1/138) at the western side of the first Marlborough Gate, adjoining the original Dockyard Wall (1711). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 353. Cannon protecting the northeast corner of the former Portsmouth Chief Inspector's Office (1857, 1/138). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 354. Western gate pier of the first Portsmouth Marlborough Gate (1711, 1/138). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 355. Plinth bearing a broad arrow at the base of the western gate pier of the first Portsmouth Marlborough Gate (1711, 1/138). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 356. West elevation of the refurbished Portsmouth Iron and Brass Foundry (1854, 1/140), now BAES HQ. A. Coats 2012. Reproduced with the permission of the MoD.



Fig. 357. Storehouse No. 33 before reconstruction after fire 23.3.1908, photograph no. 99. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

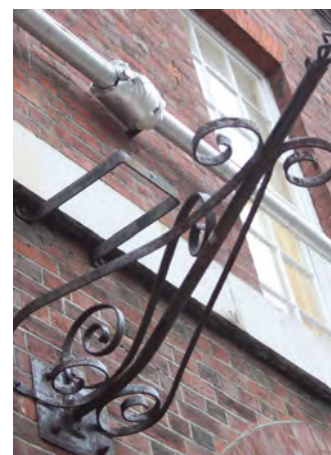


Fig. 358. Wrought iron lamp bracket on Portsmouth Storehouse No. 33 (1786, 1/150). A. Coats, 2013. Reproduced with the permission of the MoD.

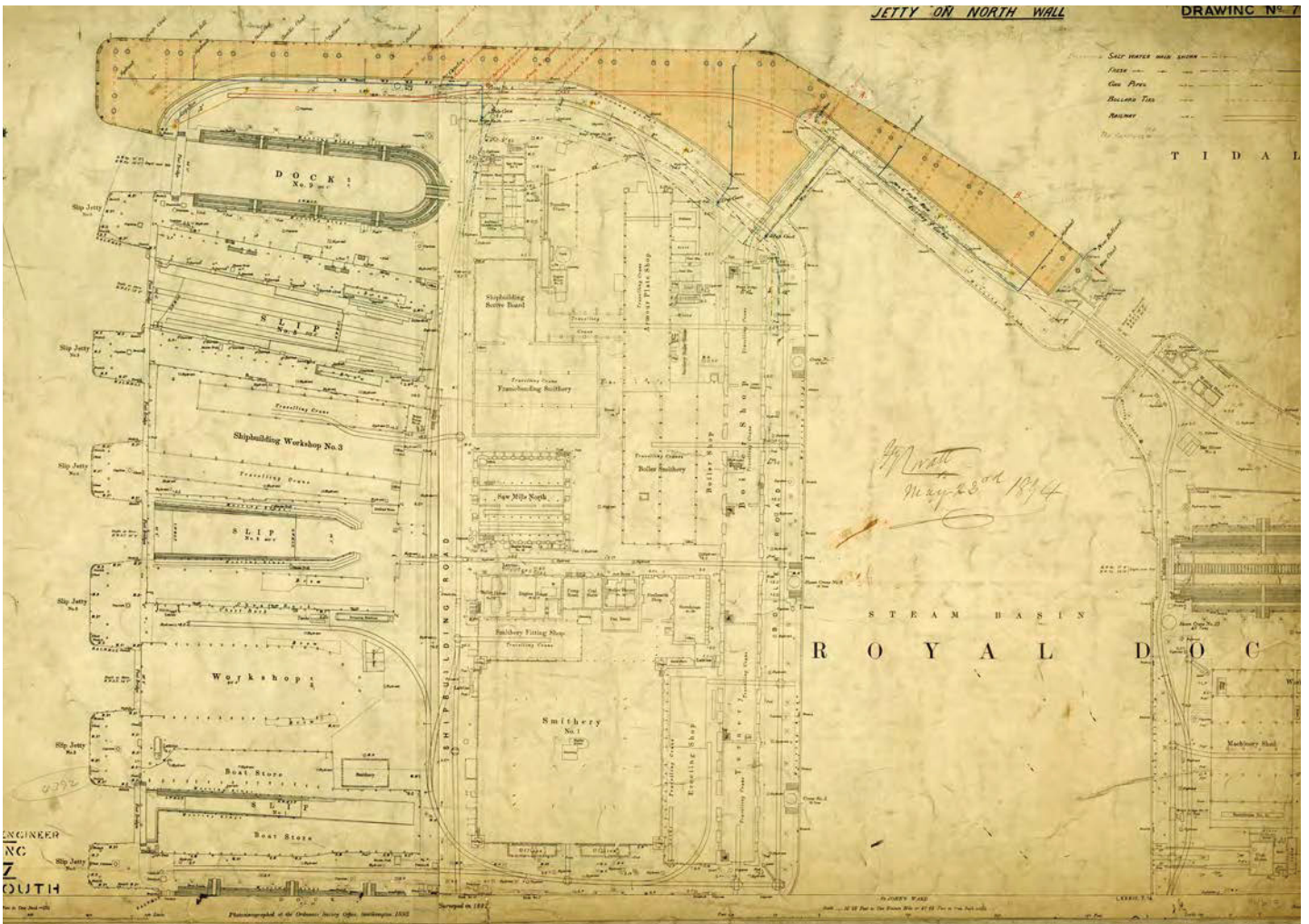


Fig. 359. MD95/03057. Ordnance Survey, Hampshire Sheet LXXXIII.7.8. HE (1893–94). Plan of Jetty at North Wall, HM Dockyard, Portsmouth, showing North Corner at the beginning of the twentieth century. Reproduced by permission of Historic England.



Fig. 360. Damage to Portsmouth No. 1 Slip Jetty looking east, 1.2.1915, with the Smithery and the Steam Factory in the background. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.



Fig. 361. Portsmouth No. 2. Slip and S. Side Laying Out Shop looking west, 1.2.14. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

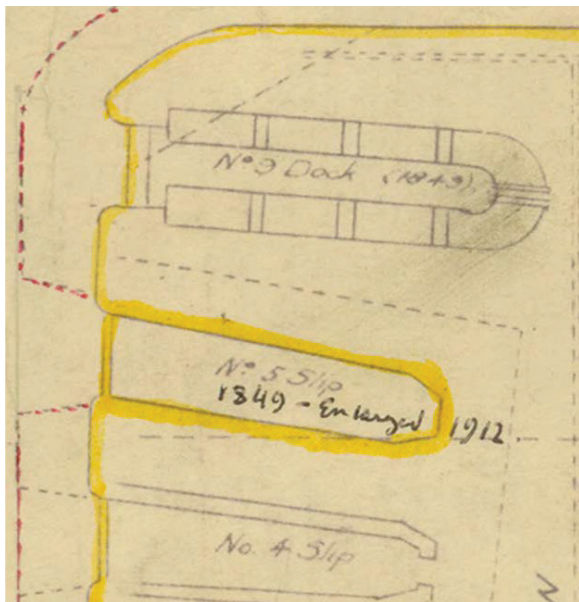


Fig. 362. MD95/03032 (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing based on 1850 map showing changes in yellow and later buildings in red dotted lines. Section showing Portsmouth North Corner showing Slip No. 5 enlarged in 1912 and Dock No. 5 infilled in 1898. Reproduced by permission of Historic England.

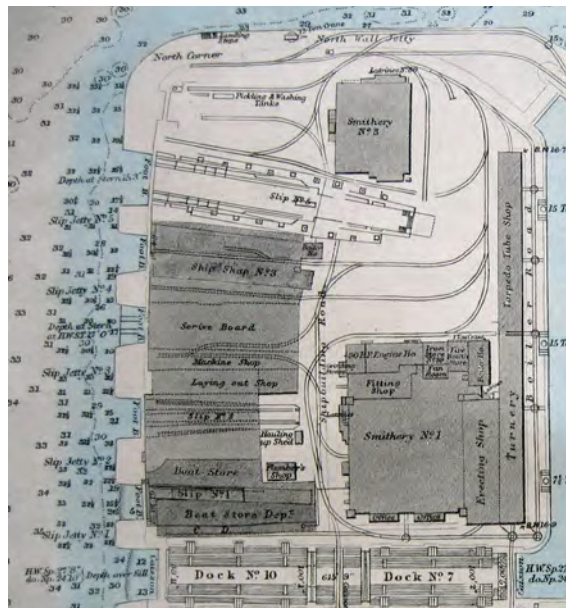


Fig. 363. HM Dockyard Portsmouth Harbour (1907-12), showing North Corner changes made to Slip No. 5 for building *Dreadnoughts*. Defence Estates Plans. Scale 1:2500. AdL, Vz 14/115 (1897-1907). Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

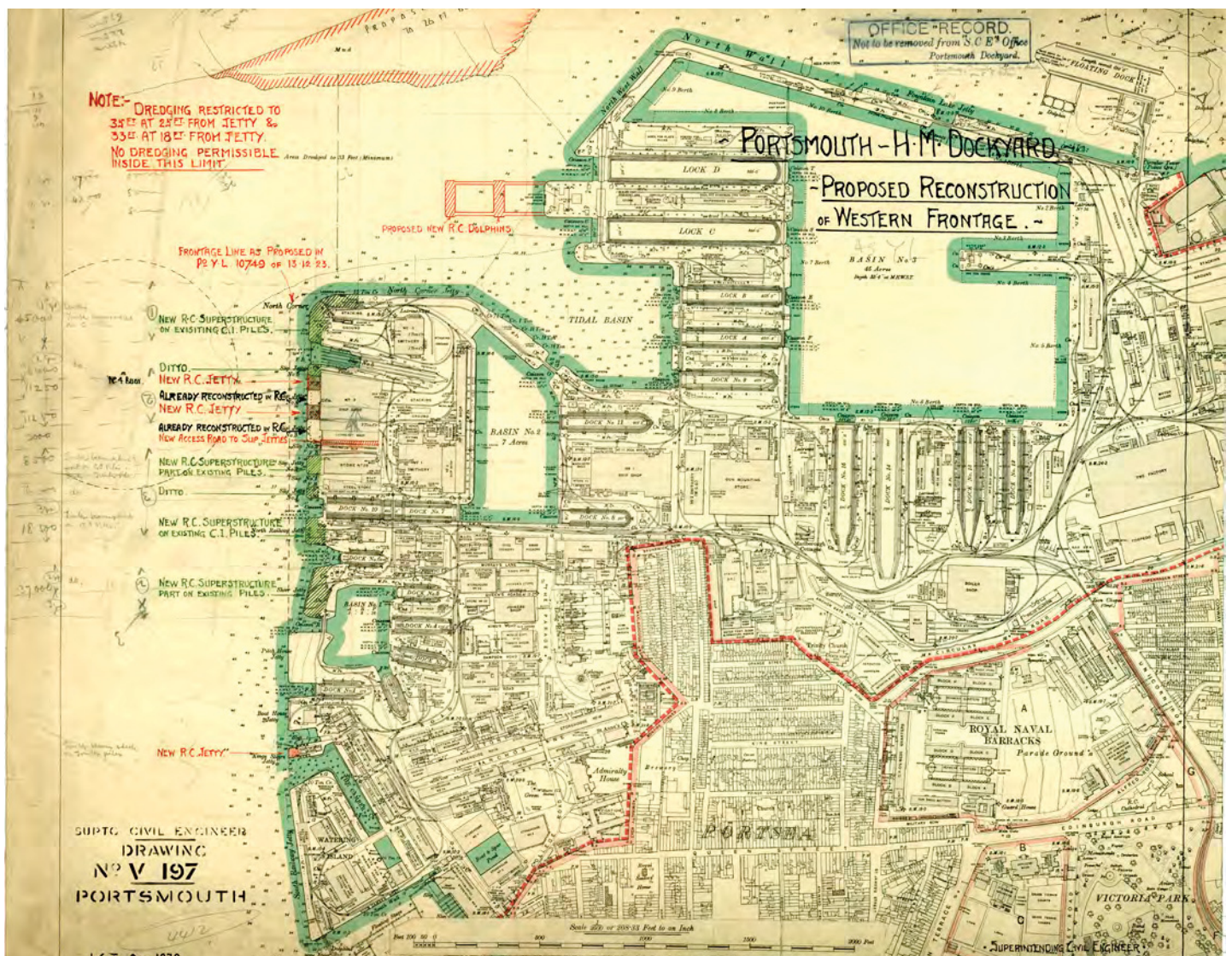


Fig. 364. MD95/03045 (1930). Western Frontage Plan for Proposed Reconstruction, HM Dockyard Portsmouth. Reproduced by permission of Historic England.





Fig. 365. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. North Corner from the west. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



Fig. 366. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. North Corner from the south. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



Fig. 367. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. North Corner from the north. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.



Fig. 368. J297/06. Photograph of Ship Shop Nos 3-4, south of Slip No. 5, before their demolition in 1980 (23 June 1971). ©Crown copyright.HE.



Fig. 369. J297/11. Photograph of the interior of Ship Shop Nos 3-4 before their demolition in 1980 (23 June 1971). ©Crown copyright.HE.



Fig. 370. PK318/07 FL00982.02.001. Photograph of the Block Mills from the southeast (n.d. c.1970s). ©Crown copyright.HE.



Fig. 371. PK318/07 FL00982.02.002. Photograph of the Block Mills from the southwest with the head of Dock No. 6 on the left (n.d. c.1970s). ©Crown copyright.HE.



Fig. 372. 23852/27 SU 6300/81. Aerial photograph of the Block Mills from the southwest, before its refurbishment in 2007-8, when the external staircases were removed (11 Apr 2005). ©Historic England.



Fig. 373. West elevation of the Portsmouth Block Mills (1802, 1/153), showing the rebuilt North Range. A. Coats 2010. Reproduced with the permission of the MoD.



Fig. 374. South elevation of the Portsmouth Block Mills (1802, 1/153), with the external twentieth century fire escapes removed. A. Coats 2010. Reproduced with the permission of the MoD.



Fig. 375. Interior of the Portsmouth Block Mills (1802, 1/153), showing new roof timber and two beams where traditional scarf joints bond old and new timber. A. Coats 2010. Reproduced with the permission of the MoD.



Fig. 376. Portsmouth Steam Factory (1847, 1/208), east elevation, showing the 10 ton gantry crane. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 377. 'VR' bollard near Portsmouth Steam Factory (1847, 1/208). A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 378. Portsmouth Steam Factory (1847, 1/208), rainwater hopper, east elevation, dated 1847. A. Coats 2013. Reproduced with the permission of the MoD.



Fig. 379. Former 80hp Portsmouth Engine House (1849, 1/209) from the northeast, with the Steam Factory in the background. A. Coats 2014. Reproduced with the permission of the MoD.



Fig. 380. Former Portsmouth Smithery (1852, 1/209), south and west elevations, showing the original western chimney bases dated 1852. A. Coats 2014. Reproduced with the permission of the MoD.

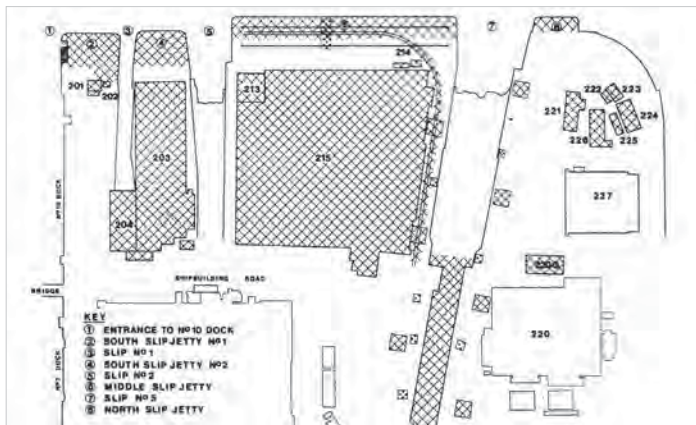


Fig. 381. Portsmouth Final Sketch Design Fig. 2 Existing Site Plan, showing original docks and slips at Portsmouth North Corner, 1/223. BAES. FMBF (June 1978). Item FB45, PSA, DOE, Directorate of Defence Services II (June 1978). Reproduced with the permission of the MoD.

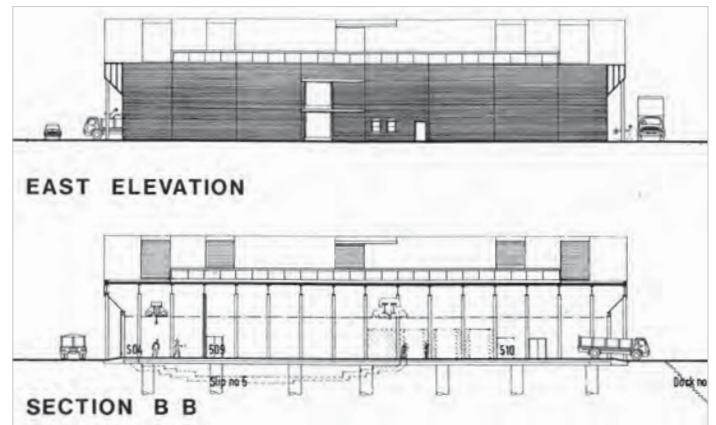


Fig. 382. Portsmouth Final Sketch Design Fig. 8 East Elevation, 1/223 (June 1978). BAES. FMBF Item FB45, DOE, PSA, Directorate of Defence Services II. Reproduced with the permission of the MoD.

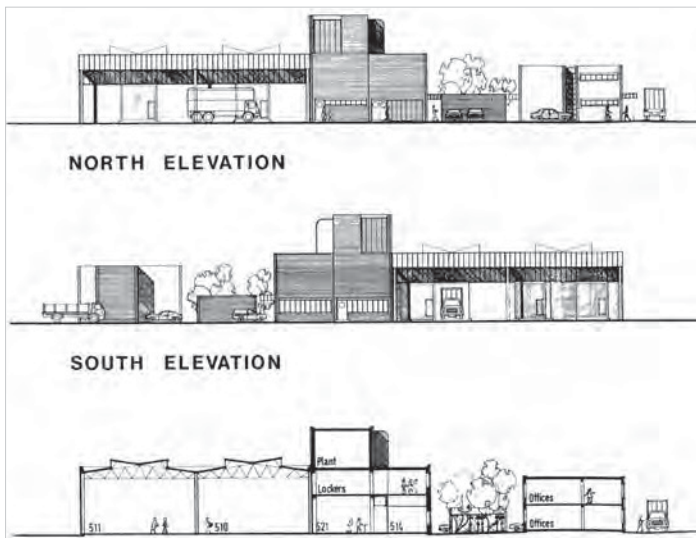


Fig. 383. Portsmouth Final Sketch Design, Fig. 8 North and South Elevations, 1/223. BAES. FMBF (June 1978). Item FB45, DOE, PSA, Directorate of Defence Services II. Reproduced with the permission of the MoD.

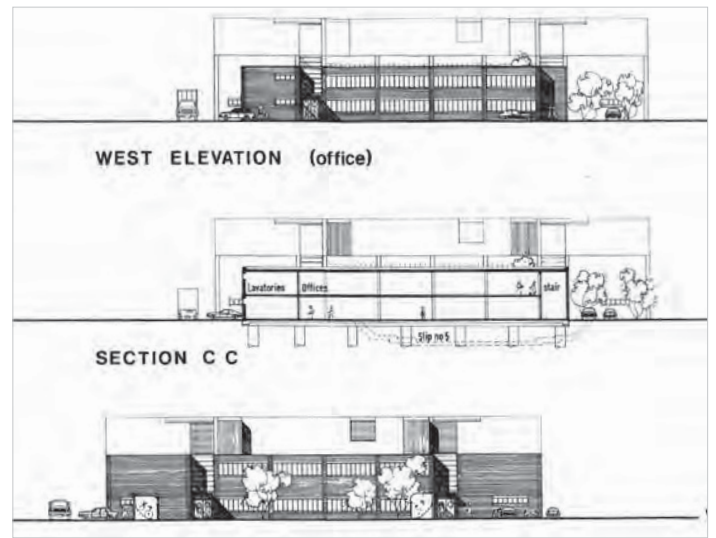


Fig. 384. Portsmouth Final Sketch Design Fig. 8 West Elevation, 1/223. BAES. FMBF (June 1978). Item FB45, DOE, PSA, Directorate of Defence Services II. Reproduced with the permission of the MoD.

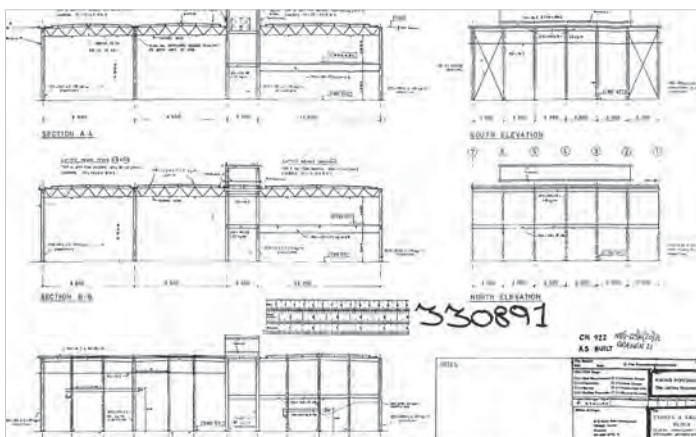


Fig. 385. Portsmouth Slip Jetties Reconstruction, PSA, DOE Stores & Ablutions Block, Elevations, Sections. Unicorn (Sept 1976). 1/225. F83, Drawing no. XB2/7C. BAES, Unicorn (Feb 1998). Technical Support. Reproduced with the permission of the MoD.

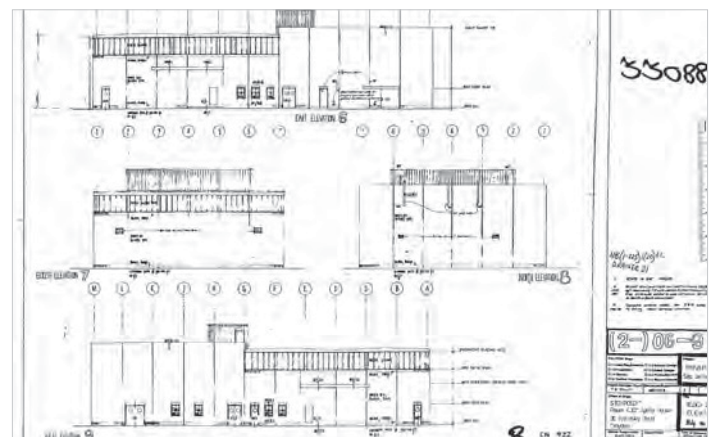


Fig. 386. Portsmouth Slip Jetties Reconstruction, PSA, DOE, Block 2, East, South, West Elevations. BAES. Unicorn (Sept 1979). 1/225. F83. Drawing no. AB2/4C. Unicorn (Feb 1998). Technical Support. Reproduced with the permission of the MoD.

ton capacity working until the 1930s. Unrelated to the dock, slightly to the west on the edge of Basin No. 2, is another capstan, by Cowans Sheldon, dated 1956, in 2015 newly painted black and white.

Fig. 407. MD95/03045 (1930). Western Frontage Plan for Proposed Reconstruction, HM Dockyard Portsmouth. Section showing the Marlborough Salient (Marlborough Row, Gloucester and Frederick Streets), which was taken into the yard in 1944. Marlborough Gate was moved south to its present position at the easternmost point of Bonfire Corner. Reproduced by permission of Historic England.

Fig. 408. S. Cribb's late nineteenth century photograph of workers leaving the original Marlborough Gate. Courtesy of Portsmouth Royal Dockyard Historical Trust.

Fig. 409. New Portsmouth Marlborough Gate, 1944. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 209. Original 1711 Portsmouth Dockyard Wall, this section now within the Naval Base between the new and original Marlborough Gates, taken inside the yard as the Marlborough Salient in 1944. A. Coats 2013. Reproduced with the permission of the MoD.

An area acquired in 1944 comprised the three parallel streets of Marlborough Row, Gloucester Street and Frederick Street. **Marlborough Gate** itself was shifted south to the spur to the east of Short Row (SU 632652 006229). The new gate is a functional affair. The gates are of blue painted thin metal, the gate posts are of blue engineering brick topped with Portland stone, above which, at least until 1982, was a decorative linking iron arch with a central lantern. On the west side of the gate is a seldom used pedestrian gate. The short enclosing red brick wall of the acquired plot has six bricked up sections with concrete lintels which could have been pedestrian gates were it not for the fact that the blocking brickwork appears identical to that of the wall itself. Perhaps there was a change of plan. Adjacent to the pedestrian gate is a tiny **Gas Meter House** (c.1960, 2/1, MoD, SU 632558 006179), the door to which appears not to have been opened for some time.

An indication of the present-day importance of road traffic is the construction of a **Security Office** (c.1990, 2/2, SU 632852 006535) in the centre of the road close to the gate. On the eastern side of Gloucester Road is **Store No. 20** (1960, 2/3, MoD SU 63284 00657) which has a reinforced concrete frame with brick infill, the three storeys having a variety of window shapes. Further north, on the western side of Gloucester Road, are located **Naval Offices** (c.2000, 2/5, MoD, SU 632271 006991) in high quality red brick similar to those used for the buildings at North Corner. The roof line is unusual: the upper floor of the three has the appearance of a pagoda placed above a conventional structure, and the latter boasts subtle coloured brick dentilation below the guttering.

Fig. 410. 23835/03 SU 6200/53. Aerial photograph of the west of Portsmouth Dockyard from the east, showing COB2 (1972) in the centre foreground before its demolition in 2010 (11 Apr 2005). ©Historic England.

Fig. 56. Decorative brick detail, Portsmouth Naval Offices (c.2000, 2/5). A. Coats 2013. Reproduced with the permission of the MoD. Reproduced with the permission of Historic England.

The offices are those of COMMCEN (Communications Centre) Portsmouth, Information Systems and Services, moved from Fort Southwick in 2001. To the north, reaching Victorian Road, is a car park, formerly the site of **Central Office Blocks 1 and 2** (1965, 2/11; 1972, 2/10). COB1 was built on land taken into the yard in 1944 land at the northwest end of Gloucester Street, and COB2 on land east of Marlborough Row. These were conventional 10-storey tower blocks, demolished in 1994–95 and 2010 respectively, as their fabric was deteriorating and more appropriate accommodation such as Victory Building became available.

Fig. 411. Portsmouth EEM Workshops Marlborough Salient, Machine Shop Plan and Section. SCE Department (Jun 1947), Drawing no. 253/47. 2/12. BAES. Reproduced with the permission of the MoD.

Fig. 412. 2/12. No. 2 Electrical Shop, Floor Plans, Section, Drawing 145/65. MPBW (Jan 1965). BAES. Reproduced with the permission of the MoD.

Facing Victoria Road is **Electrical Workshop No. 2** (1954, 2/12, BAES, SU 632733 007841), a steel framed three bay structure with brick elevations, aligned north-south, bearing date 1954, built over Frederick Street (part of the Marlborough Salient taken into the dockyard) to replace and enlarge the earlier 1905 Electric Shop located east of Frederick Street, destroyed in the war. It is now the **Light Fabrication Shop**. A new first floor and roof was added in the 1960s. In 1998 it had a corrugated aluminium and asbestos panelled roof. A 10-tonne travelling crane dated 1953 runs the length of the building (BAES, MRM Partnership (May 1988). Structural Report, para. 5, Light Fabrication Shop)

Oriented east-west alongside the dockyard wall is a **Store and Amenity Centre** (1904, 1939, 2/17, MoD, SU 63348 00725) which has had many functions. It was originally used for meter testing and armature repairs, additionally containing a Welding Equipment store and a Ready-Use Workshop. A Boiler Makers' Workshop was added in 1917. Much of it was rebuilt in 1939; visually it gives the impression of an assortment of structures.

To the north, on the south side of Victoria Road is the **New Electric Light and Power Station** (1907, 2/19, MoD, SU 63334 00792), now the **Central Boiler House**. It was on the site of an earlier station, probably built in 1896. The new facility was subsequently enlarged in 1912 as the demand for electricity increased, especially for the new cranes round Basin No. 3 (q.v.). A map of 1924 shows the power station further south of Victoria Road, indicating that the present tall building adjacent to the road is an extension. Certainly the girth of the truncated chimney at the north-east corner suggests that it was part of the extension rather than of the original. The truncation predated 1970. This is thought to be the last English dockyard power station.<sup>10</sup> The building is now BAES's Central Boiler House (2/19). Facing Victoria Road is the Barber's Shop, one of the social facilities available in the yard. The Boiler House's double door uses anti-bird strips in hot weather.

Fig. 60. Portsmouth Central Boiler House plastic door strips to keep out birds in summer (1907, 2/19). A. Coats 2013. Reproduced with the permission of Historic England.

Fig. 413. HM Dockyard Portsmouth, ~~Proposed~~ Workshop No. 2, 2/25. (n.d, possibly 1920s). BAES. Electrical Engineers Department, SCE, Drawing no. 1/1 312. Unicorn (30.1.1997). Structural Assessment Report. Reproduced with the permission of the MoD.

Fig. 414. Portsmouth HM Dockyard, No. 4 Weapons Machine Shop (2/26) Extension West Side, plan, sections and elevation Drawing no. AB1/1A (23.3.1970). MPBW, Unicorn (30.1.1997). Structural Assessment Report. BAES. Reproduced with the permission of the MoD.

Fig. 415. South elevation of Portsmouth No. 4 Weapons Machine Shop (2/25-26) showing rebuilt western bay after bomb damage. BAES. Unicorn (3.7.1996). Structural Assessment Report. Reproduced with the permission of the MoD.

Also on the south side of Victoria Road is the **Electrical Workshop and Store** (1896, 2/20, MoD, SU 63369 00797), constructed in what was the Convict Prison which had closed in 1873. One of its principal tasks was the assembly of searchlights. It was Control Room No. 20, but is now BAES's Paint Shop; the Central Registry of Lifting Gear is also within. The third part of this industrial cluster is a **Workshop** (1939, 1945, 2/25-2/26, MoD, SU 63716 00789), now designated as the Joiners' Shop. Unicorn in 1996 considered it to be 80–100 years old. Its plan is certainly similar to that of the Electrical Engineering Workshop shown in the 1924 map, built on the site of the former Convicts' Prison. An undated drawing for 2/25 from the Electrical Engineers' Department shows an internal railway track connecting it to the docks and locks. Two bombs exploded next to the western elevation in 1940–43, damaging the south and west elevations and requiring rebuilding of the western bay in 1970. In 1962 it was an Electrical

<sup>10</sup> Rosyth Dockyard, Dunfermline, retains its Dockyard Power Station, built 1910–15 as an L-plan power station, which supplied energy to the whole dockyard (British Listed Buildings).

Engineering Workshop and a 1970 drawing show it as No. 4 Weapons Machine Shop. The mezzanine floor was built in 1975 and in 1992 2/26 was in use as glass reinforced plastics workshop. In 1994 an air raid shelter (2/26B & C, 1939) remained but is now gone. (BAES, Evans Grant, March 1992, p. 4; BAES, Building Management SE Ltd, Jan 1994, p. 6; BAES, Unicorn, 3.7.1996, paras 1.1, 2.3; BAES, Unicorn, 30.1.1997; Lambert, 1993) It is an example of an architecturally undistinguished building which over the decades has performed a variety of valuable functions.

Set back from Anchor Gate Road is **Spithead House Residence** (2/27, MoD, SU 63414 00745), formerly **Anchor Gate Residence**, built in 1898 for the Commodore of the Naval Barracks on land previously taken by the Convict Prison. It was occupied by the Commodore of the Barracks until September 1993, when it was taken over by Flag Officer Portsmouth. **Spithead House Cottage Residence** (2/27A; SU 63400 00709), formerly **Anchor Gate Cottage Residence**, was built in 1898 to the south of the Commodore's residence against the dockyard wall, for use by the Commodore's staff. (Lambert, 1993)

Fig. 416. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. Convict Prison (c.1834)/ Naval Detention Quarters/RM School of Music and Holy Trinity Church (1839) from the south. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 417. North elevation of the ruins of Portsmouth Holy Trinity Church (1839, 2/37), bombed in the Second World War. A. Coats 2014. Reproduced with the permission of the MoD.

Fig. 418. North elevation of Portsmouth Holy Trinity Church Gateway (1839, 2/37) abutting the wall built to separate the church from Portsea in 1907. A. Coats 2014. Reproduced with the permission of the MoD.

Fig. 419. Portsmouth Holy Trinity Church (1839, 2/37) south wall section (north elevation) with the dockyard wall (1907) beyond. A. Coats 2014. Reproduced with the permission of the MoD.

Purchased for social reasons in 1906, the **Vicarage** to the Holy Trinity Church in Lennox Row (1840, 2/36, MoD, SU 634821 007234), now **Trinity House**, was bought as a senior naval officer residence; in 1992 it was the quarters of the Flag Officer Training and Reserves. **Holy Trinity Church** (1839, 2/37, MoD, SU 634890 006890) was also purchased in 1906, the Church and Vicarage being enclosed by the dockyard wall in 1907. The Church was severely damaged by bombing in 1941 and remains a ruin (Lambert, 1993).

Fig. 420. MD95/03032 (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing based on 1850 map showing changes in yellow and later buildings in red dotted lines. Section showing additions made 1852–53 to Portsmouth Convict Prison by Joshua Jebb, R.E. Reproduced by permission of Historic England.

Fig. 421. South elevation of the former Portsmouth Garrison Prison Cell Blocks (1846, 2/44), built for Anglesey Barracks then used as Royal Naval Detention Quarters when the Naval Barracks were built c.1899. The western Anchor Gate pier (1900) is in the foreground. A. Coats 2013. Reproduced with the permission of the MoD.

The Garrison Prison Cell Blocks (1846, 2/38-44, SU 63550 00654) were built for Anglesey Barracks, then used as Royal Naval Detention Quarters when the Naval Barracks were built c.1899, and are now occupied by the Royal Marines' School of Music. HE, MD95/03032 confirms the 1852–53 additions made to the Convict Prison by Joshua Jebb, R.E, the bulk of whose 'civilian work related to his secondment to advise the Home Office on the building of prisons.' Appointed Inspector-General of military prisons in 1844, he 'recognized opportunities for profit in convict labour and, as a military officer, he saw the advantage of using such labour to improve Britain's defences.' (Jebb, 2004)

When the fortifications were removed and the yard was extended in 1867, Circular Road was built westwards from Anchor Gate along the north side of the new perimeter wall (1863–65). Unicorn Gate, set at right angles across the wall near Anchor Gate (Royal Navy, 1974 *Renaming Ceremony*), was

moved eastwards to its present position. Circular Road can be seen clearly following the new wall on Colson's 1881 map, shaded on both sides by trees. Anchor Gate was then the gateway into the dockyard, but now gives access to HMS *Nelson* from the operational naval base. **Anchor Gate Police Offices** (2/46, MoD, SU 63601 00671) were built in 1900. Sailors moved ashore when Anglesey Barracks were purchased by the Admiralty to become HMS *Victory* barracks in 1903.

Fig. 422. New Anchor Gate 12.9.1907. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

Fig. 423. South elevation of Portsmouth Anchor Gate showing the Police Office (1900), with the Steel Production Hall (1975, 2/56) and Ship Hall B (2002, 2/122) in the background. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 424. Portsmouth Heavy Plate Shop, General Sections through Building, North-South, East-West Sections. 2/56. Ove Arup Partnership, DOE Job no. DW(NBD) 70033, Drawing no. AA 252, Aug 1972. BAES. Unicorn (Jan 1995). Professional Structural Appraisal. Reproduced with the permission of the MoD.

One of the largest buildings in the Yard is the **Steel Production Hall** (1975, 2/56, BAES, SU 636840 007691), built as the Heavy Plate Shop by the Ove Arup Partnership, and termed the Constructive Workshop in the 1990s. It is a single-storey, steel framed building 18m tall, in three spans which support crane beams and twenty-six bays with rooflights, and an attached two-storey structure for offices. It has one sliding door 2.5m high on the west elevation, three on the north elevation, three on the north elevation and two sliding doors almost the full height on the south elevation. It has cavity brick walls, its southern elevation fronted with trees (a unique feature, a final remnant of the trees marking Circular Road when it was built) and a grass embankment (rare too). (BAES, Jan 1995, Professional Structural Appraisal, pp. 4-6, Building 2/56) It is on the site of the Boiler Shop, which in 1929 employed 475 men (Anon, 1929, p. 23). To the east is the **Diamond Building** (1979, 2/60, MoD, SU 636946 007760), offices with a rich red brick ground floor and a first floor entirely glazed.

Fig. 425. Portsmouth Diamond Building (1979, 2/60). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 426. Junction of the original Portland stone masonry and the concrete eastern Pocket extension in Basin No. 3, constructed in 1939. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 427. Roller fairlead by Cowans Sheldon & Co Ltd dated 1939, linked to the contemporaneous construction of the nearby eastern Pocket extension of Portsmouth Basin No. 3, constructed in 1939. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 428. Dock No. 12 (1876) caisson *in situ*, viewed from Portsmouth Basin No. 3. A. Coats 2013. Reproduced with the permission of the MoD.

East of the south-eastern Pocket of Basin No. 3, whose construction in 1939–40 had necessitated the demolition of the Copper Smiths' Shop, is **Dock No. 12** (1876, 1903, BAES, SU 637411 009410). This dock was part of the Great Extension plan, but the increasing length of warships resulted in an extension to 500 feet; at some stage a metal overhang three feet in width on metal angle supports was added to both sides of the Dock. A conventional floating caisson closed the entrance. A 10 ton electric travelling crane was *in situ* on the east side of the dock during the First World War. A photograph of 1984 depicts a crane at work, but there is now no crane on this quay, which is used entirely as storage space for scaffolding. On the knuckle on the east side of the dock entrance is a roller fairlead by Cowans Sheldon, 1939, meshing with the construction of the nearby Pocket extension of 1939. The junction of the original Portland stone Basin No. 3 masonry and the concrete Pocket extension can be seen in the southeast corner of the Basin.



Fig. 429. Former dock shed for Portsmouth Dock No. 12, now The White House (1914, 2/103-104). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 430. Setts and crane track on the wharf between Portsmouth Dock No. 12 (1876) and the White House (1914, 2/103-104). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 431. Engineering bricks edging the roadway next to the wharf between Portsmouth White House (1914, 2/103-104) and Dock No. 12 (1876, 1903). A. Coats 2013. Reproduced with the permission of the MoD.

Along almost the whole length of the east side of the dock is the original dock shed, now termed **The White House** (1914, 2/103-2/104, BAES, SU 637830 009354), so called since its brickwork is painted white. At its southern end are the Consignment Stores, at the northern end the premises of RAPID Welding and Industrial Supplies Ltd. North of the White House is a small brick building, the **Library** (1968, 2/105, MoD, SU 637005 009529), housing White House Records Storage. The area between this building and Dock No. 12 was stacked high with stores in early 2013, but empty in 2014.

Fig. 432. Portsmouth Brutalist Workshop Complex No. 1 (1979, 2/109-110), south end, showing its roof storage in use. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 433. Fluted concrete cornice detail on the north elevation of the Brutalist Portsmouth Workshop Complex No. 1 (1979, 2/109). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 434. Portsmouth Brutalist Workshop Complex No. 1 (1979, 2/109-110), north end, showing its roof storage in use. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 435. Portsmouth Brutalist Workshop Complex No. 1 (1979, 2/109-110), cleared of stores after shipbuilding ended in 2014. A. Coats 2015. Reproduced with the permission of the MoD.

The west side of Dock No. 12 once contained Ship Shop No. 5, but this was demolished in favour of **Workshop Complex No. 1** (1979, 2/109-2/110, BAES, SU 637083 009285), an umbrella term for workshops, offices and amenities. Sited between Dock Nos 12 and 13, this is a two storey building with a flat roof carried on concrete columns, the substantial edge of the roof comprising fluted concrete; the ends of the building are curved, redolent of interwar styling. As a piece of Brutalist architecture it is like only one other, slightly earlier structure to the west when it was erected, both sharing the same structural features. The roof is designed to take equipment craned from ships in the docks and has road access via a roller shutter door to a steel-framed rich red brick clad **Layapart Store** (1979, 2/111, BAES, SU 63720 00836) and substation lying east-west. The asphalt road surface was in poor condition in 1993. Its survey noted that 'the modern design of straight uninterrupted elevations and recessed pointing attracts and retains water', substantiating Perret's argument that architectural elements had a function in deflecting rain and were not merely decorative. (BAES, (1993) Technical Inspection, pp. 6-15; see Part 1, Architectural characteristics) On the east side of Dock No. 12 there is now no crane in place, but one existed in 1984. The quayside is used simply as a space for containers.

Fig. 436. Portsmouth Basin No. 3 Facilities, Stage 1, Phase 2, East Office Block, North and East Elevations 2/112. Technical Inspection Report, Ove Arup, DOE, May 1976. BAES. Unicorn CS Ltd (July 1997). Reproduced with the permission of the MoD.

Fig. 437. Portsmouth Basin No. 3 Facilities, Stage 1, Phase 2, East Office Block, South and West Elevations 2/112. Technical Inspection Report, Ove Arup, DOE, May 1976. BAES. Unicorn CS Ltd (July 1997). Reproduced with the permission of the MoD.

At the west of the ship halls is the **Dauntless Building** (1984, 2/112, BAES, SU 636190 008629), called East Office Block when it was designed by the Ove Arup Partnership in 1981. It is a visually striking building of three storeys with the plant room on the centre of the roof, aligned north-south, parallel with Dock No. 14. Internally it has two courtyards, so forms a rectangular figure eight in plan. It is constructed of reinforced concrete flat waffle slabs, on reinforced concrete columns on a

reinforced concrete slab, with a flat asphalt covered concrete roof. The ground floor is clad with red semi-engineering brick, the upper floors with double glazed curtain walling which is cantilevered at 45 degrees. It houses storage/workshops on the ground floor and offices on the upper floors; a small snackshop is on the ground floor. There are glazed rooflights at the head of the stairwells. It had suffered long term water penetration through the staircase cavity walls, but that was thought to have been rectified by the outer skin being rebuilt. One problem reported in 1997 was that pigeons were trapped in the lightwells and flying into the curtain walls; netting was recommended. The glazed curtain walling provides natural light to all floors, but sunlight glare was a problem on the east and west elevations; solar reflective film was advised. The open plan ground floor has internal block and partition walls and the mainly open plan office floors, articulating the flexibility intended for this building. (BAES, Unicorn, Feb 1996, para. 2; BAES, Unicorn July 1997, pp. 2-5) An aerial photograph in Patterson's *The Royal Navy at Portsmouth since 1900* (2005, p. 134) shows Dauntless in 1990. The whole shipbuilding area before the new buildings can be seen in **Fig. 45**. HE, 15790/08 SU 6301/10 (9 Sept 1997).

Fig. 438. Portsmouth Dockyard Extension Works 1881. Plate 5, Figs 7, 8, showing Transverse Section of Dock No. 13, now infilled beneath Ship Hall B (2/122). Colson, C. (1 January 1881). Portsmouth Dockyard Extension Works (including Appendices and Plate at back of volume).

*Minutes of the Proceedings of the Institute of Civil Engineering*, 64(1881) Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Fig. 45. 15790/08 SU 6301/10. Aerial photograph of Basin No. 3 from the southeast showing the now infilled Dock No. 13 (bottom centre) where Ship Hall B was built in 2002 (9 Sept 1997). ©Crown copyright.HE.

Fig. 439. 23852/15 SU 6301/21. Aerial photograph of the north elevation of Ship Halls A and B (2002, 2/121-122) on Basin No. 3, flanked on the left by the Brutalist Workshop Complex No. 1 (1979, 2/109-110) and on the right by the similar Workshop Complex No. 2 (1976, 2/139-140). Ship Hall A was built over the Gunnery Gear Pattern Store, the Fitters Afloat Shop and Offices there in 1924, replaced by No. 5 Shop (Shipfitting), Plumbers Shop and an Engine and Boiler House, serviced by railways, demolished 1977-78. Ship Hall B was built over infilled Dock No. 13 (1876, 1903) (11 Apr 2005). ©Historic England.

West and parallel with Dock No. 12 is **Dock No. 13** (1876, 1903, BAES SU 636 00939), lengthened to 564 feet at the later date, making it the longest dock in the yard at that time. It was supported by piling, Portland cement concrete, Portland stone and brickwork in Portland cement and lined with granite. It possessed a conventional floating caisson gate. Almost certainly in 1979 when Nos 12 and 13 Docks Complex was built, considerable quay space was created for the travelling crane track on the east side by reinforced concrete piles based on the broad altar, more than half the depth of the dock. The original steam cranes were replaced by 10 ton electric travellers, and by 1925 these had been supplanted by units of 30 ton capacity. On the Basin edge to the west of the entrance were the largest sheer legs in the yard. They had a lifting capacity of 100 tons, were made by Cowans Sheldon and installed in 1901, the back leg screwed by a steam engine. They had a lift of 137 feet with an overhang of 53 feet. The traverse of the back leg was so long that it ran between the Fitters Afloat Shop on its east and the Gunnery Gear Pattern Store on its west. An aerial photograph in Patterson's *The Royal Navy at Portsmouth since 1900* (2005, p. 134) shows Dauntless in 1990. The whole shipbuilding area before the new buildings can be seen in **Fig. 45**. HE, 15790/08 SU 6301/10 (9 Sept 1997). Subsequently there were a number of changes. A major modification occurred when BAES took the decision to enclose the whole of the dock for its **Ship Halls A and B** (2002, A: 2/121; B: 2/122, BAES, SU 636465 009360), designed and built by AMEC. Dock No. 13 had a concrete cofferdam placed across its entrance and was filled with various grades of fill, including sand pumped via a large pipe from a barge on the western side of Basin No. 3. A concrete slab was then built across the dock entrance, with some piling. At the entrance of Dock No. 13 piles were positioned in Basin No. 3 to create an apron (viewable on Google Maps) from the ship hall to allow loading onto transport barges. Thus Dock No. 13 is no

longer a dock, but has the potential to be restored as a dock. On the west side of the former entrance is a mooring post by Bean. Set in the south elevation of the ship hall are large doors, making it possible for loads to be moved by lorry.

It will be recalled that only the entrance to **Dock No. 14** (1876, 1896, 1914, SU 635583 009041) was constructed as part of the Great Extension scheme. By the 1890s, it became apparent that a complete dock was required. One contractor, J. Price & Co, Westminster, was appointed, working under the general supervision of Major Pilkington RE<sup>11</sup> and Charles Colson, Assistant Engineer during the Portsmouth Dockyard Extension and Civil Engineer 1881–83 at Portsmouth (Obituary, Charles Colson, 1916, pp. 391-2). The dock was 564 feet in length. Testament to the ever-increasing length of battleships, only a decade later a substantial extension was put in hand, giving the dock some 723 feet (Patterson, 1989, p. 57). Surprisingly, given that electric power was available, the original travelling cranes on both sides of the dock, by Stothert & Pitt, were steam driven (Anon, 1929, p. 13). Subsequently a two foot overhang above metal angle supports was put in on the western side of the dock to create additional space. The 30 ton cranes shown on the 1924 map are very likely to have been electrically powered. The travelling crane now on the western edge of the dock is by Stothert & Pitt, and has a lifting capacity of 125 tons. The dock is now tidal, its caisson being moored in the Basin. The space between this dock and Dock No. 15 to the west has been taken up by a similar Brutalist concrete structure to that between Dock Nos 12 and 13, and given the prosaic title **Workshop Complex No. 2** (1976, 2/139-2/140, BAES, SU 635246 008985) It includes workshops, offices and amenity rooms where planning for the *Queen Elizabeth* aircraft carrier and work for the Oman Navy was under way in 2013. Three Air Raid Shelters and Bath House No. 6 were demolished to make way for this building (Lambert, 1993). It is a two storey, mainly reinforced concrete building with pre-stressed concrete columns and a steel stanchion frame, attached to the **Layapart Store** (1976, 2/141, BAES, SU 63504 00795). Its roof was designed as a loading platform and storage area for equipment to be craned to and from the drydocks, with an asphalt road service leading to the high level roller shutter door in the Layapart Store. The floor decks have strengthening beams spanning the building, cast into large concrete ring beams which are supported on reinforced columns. In 1992 the road surface was in poor condition. Floors are of concrete slab construction. The walls have a lower semi-engineering brickwork section c.2m high with curtain walling above. The pre-stressed concrete parapet wall cast in the perimeter of the roof deck gives a salient outline to the building, emphasising its fit within the space between Dock Nos 14 and 15. Areas for senior and junior rates were separated, as were the toilets. (BAES, May 1992, Technical Inspection, pp. 3-14) An aerial photograph in Patterson's *The Royal Navy at Portsmouth since 1900* (2005, p. 134) shows the two Brutalist buildings in 1990. NDS considered that these two buildings should be listed for their stylistic rarity as dockyard buildings.

Fig. 440. Steps and engineering bricks at the head of Portsmouth Dock No. 15 (1876). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 441. Dock No. 15 (1876) overhung quay and the Portsmouth Brutalist Workshop Complex No. 2 (1976, 2/139-140) which preceded the matching Workshop Complex No. 1 (1979, 2/109-110). A. Coats 2013. Reproduced with the permission of the MoD.

The fourth of these great docks, **No. 15** (1876, 1896, 1907, SU 634940 009298), like No. 14, comprised an entrance only until J. Price & Co built the dock to 564 feet in length. But in order to take account of the bilge keels, or stabilisers, which assisted the accuracy of guns, No. 15 was twelve feet broader and squarer in section than No. 14. An extension to 612 feet was later executed. Electric travelling cranes of 10 tons were provided on each side of the dock. In 2013 there was a 20 ton Clark Chapman crane on each side, and a 25 ton Stothert & Pitt crane (1965) on the east side; in August 2015 there was a movable new crane on the west side, replacing the earlier Clark Chapman crane. A metal overhang has been added to both sides of the dock, the metal supports extending as far down as

<sup>11</sup> Major Sir Henry Pilkington KCB, RE was appointed Admiralty Director of Engineering and Architectural Works 1890–95 and Civil Engineer-in-Chief of the Admiralty Naval Works Loan Department 1895–1906, where he was responsible for the extension of all major dockyards.

the broad altar. On the east side are mooring posts by Spittle, Newport, Mon, and two roller fairleads by Douglass & Grant at the head of the dock. It is now tidal. At the head of the dock is a red brick **Electrical Workshop** (1976, 2/141, BAES, SU 635102 007935). In 1993 it was a single storey Layapart Store, located to the south of, and linked to, Workshop Complex No. 2. It has a steel framed structure clad with bricks, supported on reinforced concrete beams on mass concrete foundations. Remedial works were carried out to the parapet walling in 1983. The long flat roof over 2/140 and 2/141 has a central ridge for drainage, its covering replaced in 1992. In 1997 Unicorn stated that it was 'designed as a loading platform and storage area for equipment to be craned to and from the dry docks', but seemed mostly to be used for scrap plant. There was a travelling crane at roof level with crane beams along the north and south elevations. (BAES, Evans Grant, Feb 1993, paras 1-4; BAES, Unicorn, Feb 1997, p. 6) On this site, but much smaller, was Bath House No. 4, opened in 1920. A First Aid Station was added in 1940 and a small school attached to the Bath House (Lambert, 1993). In the 1924 map the road running north-south alongside Dock No 15 was a 30 Ton Crane Road. Some original railway track survives where this road meets Victoria Road.

Fig. 442. New Portsmouth Pay Room 7.1.1909. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

Fig. 443. New Portsmouth Pay Room (interior) 30.3.1909. TNA, ADM 195/79 (1857–1915). 100 photographs depicting: construction works at Portsmouth Dockyard. Reproduced with the permission of The National Archives.

Fig. 444. Pipe Shop (1993, 2/152). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 445. Pipe Shop keystone (1993, 2/152). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 62. Cast iron light bracket, similar to those on Portsmouth North Pumping Station (1913, 2/239) and the Gunnery Mounting Store (1896, 2/165), attached anachronistically to the Weapon Electrical Workshop (1936, 2/152). A. Coats, 2015. Reproduced with the permission of the MoD.

To the west of Aldrich Road was **Store No. 10 and Workshop** (1909, 2/151, BAES, SU 63434 00882), now a **Receipt/Dispatch Bay for the Pipe Shop** (1993). Previously on the site was a Pay Office (described as new on 7.1.1909, TNA, ADM 195/79) on the site of the Cart Pound (built in 1867 when Sluice Bastion was demolished). It is single storey in high quality red brick, the south elevation having a recessed blind arch outlined in blue and raised mustard bricks, above which is the date of construction in the keystone. It is among a significant number of new industrial buildings in the yard. It is about a third of the length and mostly the same width as the older **Pipe Shop** (2/152, BAES, SU 63437 00936) adjoining it to the north, built of a light-coloured brick and dated 1936 by Lambert (1993), with an earlier period cast iron lamp bracket attached to the eastern elevation. A number of buildings were demolished in 1992 to make way for the Pipe Shop. Marlborough Cottages Nos 1 & 2 (1945, 2/149 & 149A) were at the north end of Anchor Gate Road to house first the Leading Turncock and Inspector of Penstocks and Caissons, then the PSA Plumber (Turncock) and Base Services Utilities Office. The Paint Laboratory (1939, 2/150) was between the Cottages. The Weapon Electrical Workshop (1936, 2/152) was on the east side of Marlborough Road, now Aldrich Road, where Dock No. 15 Shed and a group of stables had stood since about 1895. It also covered an area which in the late 1920s and 1930s contained barriers to keep dockyard men in the correct lanes to receive pay from the Pay Office. (Lambert, 1993) Building 2/154 (1924, BAES, SU 63444 00985) was Bath House No. 5 and a Boiler House on vacant land and appears to be attached to 2/155, built of painted brick. Building 2/155 (1935, BAES, SU 63433 00985), originally a Ferrobestos workshop built on vacant land, has been rebuilt recently in red brick and is now a Composite Department Building. Building 2/156 (1899; post-war, BAES, SU 63426 01003) originally Latrine No. 46, then a sullage stand in the 1930s, a bomb damaged area in the Second World War, and post-war Latrine No. 24 (Lambert, 1993), has been demolished since 2012 and its site is now an enclosure for equipment.

In Aldrich Road, contiguous with the Gunnery Equipment Store, is a two storey, white painted **Training Centre** (c.1990, 2/164, BAES SU 63352 00904). Facing Victoria Road, and close to Basin No. 3, the **Gunnery Mounting Store** (1896, 2/165, BAES, SU 63338 00936)/**No. 39 Store**, is now the **MEWW Workshop**. From 1911–12 plans, it looks as though the architecturally distinctive twin oculus windows above the main entrance were added then, when its height was increased. Two revolving doors were also added to the south entrance, above a granite cill. (BAES, 1911–12, Extending Gun Mounting Shop) Following the 1981 Defence Review (Secretary of State for Defence, 1981), the Factory (3/82) and Weapons Equipment Shop Nos 1, 2 and 3 were amalgamated and reduced to a combined workshop, and machines were relocated here. (BAES, MEWW) That section parallel to Victoria Road now has white plastic cladding round its first floor. This feature seems to be characteristic of a number of industrial buildings put to new uses. It is one of the older workshops, like 2/19 and the rear of 2/201, which have nets hung in front of their large doors to stop birds flying in. An adjacent **Workshop** (1896, 2/165H, BAES) has railway station valancing above its entrance; it is now occupied by Waterfront Services.

Fig. 446. 2/165, Store for Gun Mountings, Plan and Sections AA, BB, SCE, Drawing No. P40 (18 Feb 1910). BAES. Reproduced with the permission of the MoD.

Fig. 447. 2/165, Extending Gun Mounting Shop, HM Dockyard Portsmouth, North, South and West Elevations (1911–12). BAES. Reproduced with the permission of the MoD.

Fig. 448. 2/165, Extending Gun Mounting Shop, HM Dockyard Portsmouth AE, Vote 10, Subhead B, Part 1, Detailed Elevation of South End, SCE, Drawing No. 5 (1911–12). BAES. Reproduced with the permission of the MoD.

Fig. 449. 2/165, Gun Mounting Store Extension, HM Dockyard Portsmouth, Floor Plan showing existing and new railway track and existing gantry, Section AB and Details of Roof Truss, SCE, Drawing No. 1 of 2; P29. (n.d.). BAES. Reproduced with the permission of the MoD.

Fig. 450. North elevation of the Gunnery Mounting Store (1896, 2/165H) showing valanced cornice. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 59. South elevation of Portsmouth Gunnery Mounting Store (1896, 2/165) showing nets to keep out birds in the summer. A. Coats 2013. Reproduced with the permission of the MoD.

To the east of the Armour Plate Shop, across Navy Road, is **Store No. 36** (1971, 2/167, MoD, SU 63276 00943), constructed on the site of Smithery No. 2, built in 1896. In fact the south end of the former Smithery was rebuilt as a separate Store (1973, 2/166, MoD, SU 63277 00895), which has been converted to the two storey, red brick ground floor and turquoise metal clad first floor **Daring Building** housing BAES Administration. These offices front Victoria Road.

Fig. 40. Neoclassical south entrance to the Light Plate Shop/No. 1 Ship Building Shop (1867, 2/172). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 57. Modified south entrance to Portsmouth Armour Plate Shop/No. 1 Ship Building Shop/Multi-functional Workshop (1867, 2/172) supplied with nets to keep out birds in the summer. A. Coats 2015. Reproduced with the permission of the MoD.

To the north of Dock No. 8 is the **Armour Plate Shop/No. 1 Ship Shop/Multi-functional Workshop** (1867, 2/172, MoD, SU 63188 00940) (Evans, 2004, p. 191; Lambert, 1993). This was one of the last industrial buildings in the yard on which money was spent to create notable architecture, but was not listed because it 'survives only in fragmentary condition.' (Lake & Douet, 1998, p. 34) The neoclassical entrances on both the north and south elevations remain, although the doors once accommodating railway wagons have been modified. Only the base of the chimney at the north-west corner is extant. Five bays of modern saw tooth roofing were in place by 1983. It shut in 1983 and is now used as a multifunctional workshop. In front of the south entrance was a hydraulic accumulator tower

in matching architectural style, which can be seen in the 1940 photograph of the damaged HMS *Cumberland* (NavSource Naval History, 2014). By 1970 it had been increased in height by the addition of light coloured brickwork, suggesting that greater pressure could thereby be generated. It was demolished in the 1980s since it was not listed and hydraulic power was no longer used. Now actually part of the same building is the larger **Light Plate Shop/No. 1 Ship Building Shop** (1880, 2/172, MoD, SU 63225 00946), which by 1910 held a blacksmiths' stores, a shipbuilding shed and a machine shed, which in the 1950s was converted into the Shipwright Apprentices Training Centre. It too closed in 1983. Like the Armour Plate Shop, it has been covered with five bays of saw tooth roofing.

Fig. 451. Stuccoed Office (1900, 2/179) alongside the South Wall of Portsmouth Tidal Basin near Excellent Steps, from the west. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 452. Stuccoed Office (1900, 2/179) alongside the South Wall of Portsmouth Tidal Basin near Excellent Steps, from the east. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 453. Gaslight standard (1891) alongside the South Wall of Portsmouth Tidal Basin, near Excellent Steps. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 454. Lamp standard (J. & S. Allanson & Son, Glasgow, n.d.) alongside Portsmouth South Wall of the Tidal Basin near Excellent Steps. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 455. Top of lamp standard (J. & S. Allanson & Son, Glasgow, n.d.) alongside the South Wall of Portsmouth Tidal Basin near Excellent Steps. A. Coats 2013. Reproduced with the permission of the MoD.

At the western end of the South Wall of the Tidal Basin is a small **Office** (1900, 2/179, MoD, SU 631002 010752), doubtless brick but now wholly stuccoed and used by the Coastguard Service. With the Porter's Lodge (1/8), Long Row (1/124-1/132), North Office Block (1/144) and a section of North Pumping Station (No. 4, 2/239/2/240), it comprises a small number of stuccoed buildings in the yard. A canopy has been added on the north side. It was originally a waiting room for the convenience of people moving to and from the hulks *Excellent*, *Calcutta*, *Ariadne* and *Vernon*. **Excellent Steps** (SU 630997 010889) were originally sited at the 1876 entrance to Basin No 2, moved to allow access for ironclads. They were carved out of the sea wall in 1873–75. In the 1920s the building became a telephone room, later a NAAFI and a barber's shop. Close to the canopy are the stems of two lamp standards, one of which is not only decorative and freshly painted, but also bears the date 1891, making it a former gaslight. The other, taller example is by J. & S. Allanson & Son, Glasgow. The quayside features ribbed mooring posts. Nearby, to the north-west of the Office, is the 1876 entrance to the Steam Basin/Basin No. 2. The caisson gate has been dispensed with, making the Basin tidal, which is no great disadvantage since the amplitude of the Harbour is not great. On each side of the entrance are recesses which took the caisson splines. The original 1848 entrance to the Basin was found to be insufficiently wide for the new ironclads, so its iron caisson was simply sunk *in situ*, to be revealed when the railway track was being lifted in 1984 (Riley, 1984). At the side of the entrance is an electrically powered 16 ton capacity capstan by Rolls Royce on the site of an earlier appliance.

Fig. 456. Portsmouth Dock No. 11 (1865) from the east. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 457. Gantry crane north of Portsmouth Dock No. 11 (1970s). A. Coats 2013. Reproduced with the permission of the MoD.

On the north side of Dock No. 11 is a series of modern single storey brick buildings, **Workshops and Stores** (1974, 2/183, 2/184, MoD, SU 631677 010429). They were erected on the site of the Motor Generating House No. 19, c.1920, and some air raid shelters. Straddling these structures is a gantry crane capable of lifting materials from the South Wall of the Tidal Basin to the side of Dock No. 11, also probably also dating from the 1970s. The date of **Dock No. 11** or **North Inlet Dock** (1865, SU 631458 010173) hardly suggests that it was part of the Steam Basin era, but it was in fact part of the

original plan of 1843 and for reasons not entirely clear its construction was postponed. The result was that the increasing length of warships could be accounted for – the dock is twice the length of those round Basin No. 1 – making it appropriate for present day use. In 1929 an electrically powered 30 ton transporter linked the Tidal Basin, immediately to the north, with the dock (Anon, 1929, p. 8). This may have been a gantry, but it no longer exists. At its head is the **90hp Engine House** (1885, 2/186, MoD, SU 63241 01022), a single storey building with a stone cornice on all sides, now the Waterfront Crane Office. Adjacent is a small brick **Pump House** (1950s, 2/187, MoD, SU 63237 01013) housing the electric motors for the dock.

Fig. 53. Tall windows on the east elevation of Portsmouth Painters' Shop (1896, 2/191), to maximise natural light. A. Coats 2013. Reproduced with the permission of the MoD.

To the west of Pumping Station No. 1 is the elegant single storey brick **Painters' Shop** (1896, 2/191, MoD, SU 63295 01002), in 2013 used by Smith Brothers, flooring contractors. It has one pediment on the south elevation, two on the north elevation, two sets of double wooden doors on the north and Portland stone string courses and cills. Arched iron framed windows take up most of the height of the building. It bears a notice for the PRDAC fishing club. Its image contrasts with the nearby mundane **Zincing Shop** (1905, 2/197, MoD, SU 63305 01026), closed in the mid-1950s and presently occupied by the contractor Anixter, which has an infilled oculus window in the eastern gable end.

Fig. 458. Portsmouth Dockyard Foundations for Engine and Boiler Houses (Main Pumping Station No. 1) (7.7.1874). Drawing no. X7. BAES. Unicorn (June 2000). 2/201. Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 459. Portsmouth Dockyard Extension of Pumping Station Engine House, AE 1903–04, Part 1, Subhead B, Item 6, Details of Pump Wells, Plans, Elevations and Sections, Drawing no. 2, X31, 6.10.1893. BAES. Unicorn (June 2000). 2/201. Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 460. Portsmouth Dockyard, Main Pumping Station, Building for Oxygen Producing Plant, Tank on Roof, Ground Plan, South and West Elevations and Sections. SCE, Drawing No. X50, 1.12.1918. 2/201. BAES. Unicorn (June 2000). Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 461. North door of Portsmouth Main Pumping Station No. 1 (1878, 2/201). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 51. Oculus windows on the north elevation of Portsmouth Main Pumping Station No. 1 (1878, 2/201). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 52. Neoclassical iron columns cast in an industrial style inside Portsmouth Main Pumping Station No. 1 (1878, 2/201). A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 61. West elevation of Portsmouth Main Pumping Station No. 1 (2/201) with nets to keep out birds in summer. Reproduced with the permission of the MoD.

Fig. 462. AA045931. Photograph of the exterior of Portsmouth Pumping Station No. 1 (2/201) from the north (9.7.2003). ©Historic England.

**Main Pumping Station No. 1** (1878, 2/201, Grade II, 1272260, MoD, SU 63374 00987) served Dock Nos 9, 11-15. The main engine house is single storey but expressed as two storeys in six bays, with a series of vaults in the east basement, and constructed with a cast iron frame and red brick and masonry walls. The roof is constructed of concrete roof planks, spanning onto cast iron girders and columns with glazed rooflights in the north and south, giving natural light and ventilation. On the pumphouse roof is a disused cast iron salt water tank linked to a firefighting main, supported by an independent cast iron structure (Building for Oxygen Producing Plant, Tank on Roof 1.12.1918, SCE, Drawing No. X50). The building is embellished with Portland stone coping, cornices, entablatures, cills and window arches and courses of blue glazed bricks. The windows are painted metal casements, the doors painted

timber. Unicorn characterised it as ‘a fine example of ornate Victorian industrial architecture.’ (BAES, Unicorn March 1994, Technical Inspection Report, pp. 2-5, 14, 22) The pumphouse originally housed two inverted compound steam engines capable of dealing with 18,000 tons of water per hour, not surprising in view of the new docks which had been built. It also housed drainage pumps and steam driven air compressors; some of the latter were electrically powered by 1929 (Anon, 1929, p. 19). By this date one air compressor was driven by a Brotherhood oil engine. The signal tower on the roof which relayed messages from the Semaphore Tower was removed in the 1950s (Lambert, 1993). The pumping machinery was removed in 1992, as were the boilers from the unusual glazed boiler house which has the appearance of a large orangery, although the disused brick chimney 110 feet high with steel bands and Portland stone cornice has been retained. Like the Gunnery Equipment Store, oculus windows offer a notable visual image, with arched windows similar to those of the nearby Paint Store. The south elevation of the Main Pumping Station No 1 (2/201) is joined to a later structure with a double pitched roof and a tall entrance for railway wagons; the track has been lifted, and the entrance is covered with movable netting.

Fig. 463. Extension of Portsmouth Motor Generator House No. 18 (2/205), General Arrangement and Details, Civil Engineer in Chief’s Dept, Plans, Elevations, Sections, Drawing No. 333/50B, 8.8.1950. BAES. Unicorn (Dec 1997). Technical Inspection Report. Reproduced with the permission of the MoD.

Fig. 33. Portsmouth D East Substation, built as Motor Generator House No. 18 and extended in 1950 (1939, 2/205), enhanced by a painted flagpole. A. Coats, 2013. Reproduced with the permission of the MoD.

To the north of the Pumping Station is the small and architecturally unexceptional **Portsmouth D East Substation**, built as Motor Generator House No. 18 and extended in 1950 (1939, 2/205, SU 63386 01048). Nevertheless, it is distinguished by a decorative flagpole, evidence that workspaces signify more than mere sites of work. (BAES, Unicorn, Dec 1997, enclosing drawing no. 333/50B, 8.8.1950)

Fig. 464. ADM01 (June 1908). Numbers and Dimensions of Locks Docks and Basin Entrances in HM Dockyards. Admiralty Book, p. 54. Portsmouth Deep Dock/No. 9 midship section and outline of entrance. Reproduced by permission of Historic England.

Fig. 465. Portsmouth Dock No. 9/Deep Dock (1875), showing the vertical upper half of the northern dock wall and the supporting metal framing for the Stothert & Pitt crane. A. Coats 2015. Reproduced with the permission of the MoD.

North of the Zinc Shop and Pumping Station are the locks and docks of the Great Extension, urgently needed to provide longer docks, more wharfage, coal storage and deeper basins for the ironclads, which needed more frequent docking to clean their hulls than wooden ships. It utilised land no longer required for Portsea fortifications and the last of Portsmouth’s open fields, Pesthouse Field. Plan E was chosen, to be completed between 1869 and 1873, to increase wharfage, ‘transport the largest ship from one basin to another’ while the inner basin could ‘contain all the ships likely to be employed there at one time.’ (Hamilton, 2005, pp. xxix-xxx, xxxvi, 53, 57-61, 363-4, 375-7, end paper; House of Commons, 1860, *Report of the Royal Commission appointed to consider the defences of the United Kingdom; Portsmouth Dockyard Act*, 1864, 27 & 28 Victoria, c. 103; Chapman, 1978, pp. 3, 4, 6, 9) The first is **Dock No. 9** or **Deep Dock** (1875, MoD, SU 633305 010810), its epithet referring to its depth which allowed ships to be docked irrespective of the state of the tide. A further innovative feature was the use of a sliding rather than a ship caisson; this may have been a strategy to allow repairs to be made to the sliding caisson. There is now a weight restriction on the roadway above the caisson housing on the north side of the dock entrance. Running along almost the whole of the north side of the dock wall are metal supports for one of the travelling crane tracks; they have the appearance of dating from the 1950s. In the older docks, with their stepped sides from top to bottom, footings for travelling cranes could be created by blocking off the top three or four steps with concrete; here the upper half of the dock wall is vertical, hence the supporting metal framing. This is unique in the yard. The crane



is by Stothert & Pitt with a 12.5 ton capacity. On the south side of the dock is a length of disused standard gauge railway track, used for an early steam powered travelling crane since no railway is marked on the 1924 map. Travelling steam cranes were small enough to operate on track of this gauge; the larger electric cranes needed a much broader gauge. Before the introduction of electric power, travelling steam cranes were useful, although their maximum load was only 5 tons; as their coffee pot boilers needed constant attention they were quickly dispensed with. Additionally drivers had to fire up before work each day. An indication of the sudden flowering of crane technology in the early years of the twentieth century is the existence of simple derricks on the south side of the lock as late as 1901 (*Navy and Army Illustrated*, October 1901). Also on the south side are two capstans: that on the west with a 16 ton capacity is by Clyde Booth & Rodley, Leeds; that on the east with an 18 ton capacity is by Stothert & Pitt, Bath, dated 1978. Beyond the head of the dock, running along the edge of the Basin, was a short section of track for one of the yard's first electric travelling cranes, capable of lifting 10 tons, by Sir William Arrol, dated 1912. The novelty caused the quay to be termed 10 Ton Crane Road on the 1924 map. The track and crane are no longer in place. On the north side of the dock are three buildings, from east to west: **Deep Dock Shed** (c.1890, 2/231, MoD, SU 63386 01111) used as a Submarine Store and Workshop until the late 1940s, and rebuilt in 1972 as Motor Generator House No. 1; **Ready-Use Store** (1972, 2/232, MoD, SU 63345 01111); and **Caisson Store** (1920, 2/233, MoD, SU 63279 01112).

Fig. 466. Portsmouth Dockyard Extension Works 1881. Plate 6, Fig. 17, showing Entrance to South [A] Lock through Tidal Basin. Colson, C. (1 January 1881). Portsmouth Dockyard Extension Works (including Appendices and Plate at back of volume). *Minutes of the Proceedings of the Institute of Civil Engineering*, 64(1881) Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Fig. 467. Portsmouth Dockyard Extension Works 1881. Plate 6, Fig. 15, showing the Caisson Camber at the Entrance to South [A] Lock through Tidal Basin. Colson, C. (1 January 1881). Portsmouth Dockyard Extension Works (including Appendices and Plate at back of volume). *Minutes of the Proceedings of the Institute of Civil Engineering*, 64(1881) Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Fig. 468. Portsmouth Dockyard Extension Works 1881. Plate 7, Figs 32, 33, 34, showing a ship caisson and the caisson section at the Entrance to the Tidal and Fitting Basins. Colson, C. (1 January 1881). Portsmouth Dockyard Extension Works (including Appendices and Plate at back of volume). *Minutes of the Proceedings of the Institute of Civil Engineering*, 64(1881) Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Fig. 469. Capstan between Portsmouth South/A Lock (1875) and North/B Lock (1876) on the west side. It was made by Clarke Chapman Marine, dated 17.4.96. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 470. Inner face of the sliding caisson connecting South/A Lock (1875) to the Tidal Basin. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 471. ADM01 (June 1908). Numbers and Dimensions of Locks, Docks and Basin Entrances in HM Dockyards. Admiralty Book, p. 59. Portsmouth South Lock/A Lock outer entrance C, midship section and outline of entrances. Reproduced by permission of Historic England.

Fig. 472. ADM01 (June 1908). Numbers and Dimensions of Locks, Docks and Basin Entrances in HM Dockyards. Admiralty Book, p. 56. Portsmouth North Lock/B Lock outer entrance B, midship section and outline of entrances. Reproduced by permission of Historic England.

To the north of and parallel to Deep Dock is the first of the two locks giving access to the **Repairing Basin** (q.v.). It was originally known as **South Lock**, later as **A Lock** (1875, SU 63332 01142). The lock was closed at its western or Tidal Basin end by a sliding caisson, but at the eastern end by a conventional floating structure. On the south side of the Lock is a now disused travelling crane by Sir William Arrol with a capacity of 20 tons, dated 1959. The complicated nature of the jib metalwork

certainly suggests that it is not exactly a modern example. Its presence indicates that the lock was once used for lifting materials, not only as a means of access to the Basin. On the north side of the lock is the **Battery Workshop No. 2** (1915, 1970s, 2/235, MoD, SU 633346 011726), having the enviable distinction of being on the site of the last earth closet in the yard; it is now a 1970s rich red brick **Lay Apart Store**. It is a long narrow single storey building with a clerestory throughout its length which continues the neoclassical design and has decorative brick cornice. It was formerly served by a 10 ton travelling crane running from the Basin; since the workshop was concerned with weighty submarine batteries this must have been a real advantage. To the north of these buildings is **North** or **B Lock** (1876, SU 633277 012032), having the same dimensions and operating principles as the parallel A Lock.

Fig. 473. Portsmouth Battery Workshop No. 2/Lay Apart Store (1915, 1970s, 2/235). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 474. South elevation of Portsmouth North Wall (1881) leading to the former Coaling Point. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 475. Western point of Portsmouth North Wall (1881), which would have led to the former Coaling Point, but was rounded off in 1913 when C Lock was built. A. Coats 2015. Reproduced with the permission of the MoD.

The buildings on the north side of B Lock relate to the completion of C Lock in 1913 rather than to the opening of B Lock in 1876. Since a visual inspection of the basins and gates, which existed only between 1876 and 1908–14, when the huge modification project began, is impossible, a general description of the situation in these years is given below. A full account of the building, with plans, is given in Bernays, *et al.* (1881; Colson, 1881; Meyer, 1881).

Fig. 397. Portsmouth Dockyard Extension Works 1881. Plate 4. Colson, C. (1 January 1881). Portsmouth Dockyard Extension Works (including Appendices and Plate at back of volume). *Minutes of the Proceedings of the Institute of Civil Engineering*, 64(1881) Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

The plan as originally conceived was for vessels to move from the Tidal Basin, which was part of the harbour, through South and North Locks into the Repairing Basin which was provided with Dock Nos 12 and 13, on its south side. The entrances to two further docks, Nos 14 and 15, were constructed, but no further work was then undertaken. From the Repairing Basin vessels could move north to the Rigging Basin through a caisson gate. Access to Fountain Lake (part of the harbour) could be achieved via a caisson gate set in its north wall. From the Rigging Basin ships could pass westwards to the Fitting Out Basin via a gate set in the south-west corner of the Rigging Basin, and then to the Tidal Basin through another caisson gate on the south side of the Fitting Out Basin. There was thus a generalised anti-clockwise flow through the three basins.

C. H. Meyer (1881, p.175), engineer in charge of the temporary works and plant, gave the dimensions of the works:

Repairing Basin 22 acres; entrances 80 and 82 feet

Fitting Out Basin 15½ acres; entrances 80 and 82 feet

Rigging Basin 15¾ acres; entrances 80 and 82 feet

Tidal Basin 8¾ acres; 30 feet deep at low water

Ship caissons were used for the entrances to the docks and locks for the Repairing Basin, but sliding caissons were used for the Deep Dock, Locks and Tidal Basin entrance to the Fitting Basin. The ship caissons, which permitted access to roadways and railways, consisted of 'a wrought iron body covered in by a deck or roadway of the best Dantzic oak planking 4 inches thick.' Colson justified caissons over gates because they took up less space and were easier to maintain. They could be moved in

twenty minutes. The seven sliding caissons were of box form, open at each end to allow water to flow above and below the air chamber. Iron and water ballast adjusted the flotation. Wrought iron girders fixed to the masonry prevented the caissons lifting accidentally. Their keels and stems were constructed of English oak, their roadway decks of six inch Dantzic oak planks. Admiralty Director of Works during the Great Extension, Sir Andrew Clarke, also justified the use of sliding caissons by their greater ease of working, 'whilst for repairing or removing they were preferable to gates.' He added that they 'could have their roadway removed and be run into their chambers by one man in five minutes'. Colson reported that the costs of dock gates and bridges would have been equal if not more than caissons, 'without affording the same advantages'. The sliding caissons, penstocks and capstans were worked by compressed air, selected by Colson after it was found that 'a greater reserve of power was available at less cost' than hydraulic power. Hydraulic machinery was also limited by the water freezing in cold weather. It would have been wasteful to produce a constant supply of steam power for the intermittent requirements of this equipment so steam was not considered. (Colson, 1881, pp. 134, 146-8; Bernays *et al.*, 1881, pp. 226, 231, 235-7) Surplus excavated material was transported by railway to Whale Island over a swing bridge across Fountain Lake. Two men could open the bridge in half a minute (Mejer, 1881, p. 194).

Fig. 393. Map showing the swing bridge and timber staging removing surplus excavated material from the Great Extension which enlarged Whale Island. AdL Vz14/111 (1875). Portsmouth Dockyard Extension: Plan Shewing state of the works in Jany. 1875 (progress since 1865). To accompany Colonel Pasley's Report of Feb. 1875. Director of Works. Defence Estates Plans. Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

While the scale of all this construction work was enormous, innovatory was the establishment of specialised quays for the bunkering of vessels, known as Coaling Point, on three acres of a knuckle southwest of the Fitting Out Basin. In 1863 a plan for a covered "Experimental Store", designed by Portsmouth Assistant Civil Engineer John Wood for Watering Island, was considered for the Extension Coaling Point, to contain "13,540 superficial feet of storage space and 42' 6" height, equal to about 12,000 tons". A complex system of eight storage cells would have used elevators on the jetty to unload the coal from railway wagons without breaking it in the dumping process, but it was not built. (Evans, 1996, pp. 181-2) No less than 18,000 tons of coal could be stocked on the Point to meet the voracious appetite of the continually growing steam engines. Ten hydraulic cranes with a capacity of 30 cwt were installed to shift the coal; in recognition of the amount of dust generated cabs were provided for the drivers. The cranes were of a new kind, having four legs and a counterbalancing weight behind the jib, giving them a radius far greater than the swan neck variety. Gray stated that the hydraulic hoists at Portsmouth and Portland 'could reportedly discharge at 500 tons per hour, a rate around double what could be achieved with manual labour [but] only cruisers could coal alongside. Battleships therefore still had to be coaled by lighter, although the bags were transferred from the dockside by cranes.' (2015, p. 172).<sup>12</sup>

Alterations to the docks giving on to the Repairing Basin after 1881 are readily understood, since essentially an extension process was undertaken. However, alterations to the Basins themselves were more complicated, the 1906 plan hingeing on drastic simplification of the Basins and the creation of new entrances from the Harbour. Since North and South Locks, at 468 feet in length, were wholly inadequate for new vessels, they would either have to be extended or entirely new locks built. The latter strategy was decided upon, but the downside was the concomitant need to remove the Coaling Point, despite its advantages for bunkering. Fortunately the new leviathans were powered by oil-fired steam turbines, while the requirements of conventional ships came to be met by a coal depôt ship which could hold 12,000 tons, arriving in the yard in 1904 (Riley, 1985, p. 23). Considering that ocean-going bulk carriers of this capacity did not appear until the 1950s, this was an early and important innovation. Not so easily resolved was the problem created by the reduction in size of the Fitting Out Basin by two-thirds to allow the construction of the new locks, which were, at 850 feet in length,

<sup>12</sup> See Gray (2015, pp. 168-83) and Gray (2014) for the dangers and discomforts of coaling.

almost twice that of the older locks. The very much smaller area came to be termed The Pocket; other arrangements were made for fitting out. The caisson on the south side of what was the Fitting Out Basin giving access to the Tidal Basin was subsumed within the new construction, its site becoming part of the quay on the south side of C Lock.

Fig. 476. ADM01. Numbers and Dimensions of Locks, Docks and Basin entrances in HM Dockyards, June 1908. Admiralty Book, p. 62. Portsmouth Proposed New Lock [C or D Lock] outer entrance midship section and outline of entrances. Reproduced by permission of Historic England.

Fig. 477. Portsmouth photograph entitled 'No. 642 New Locks. Removal of Coaling Point Sept 1912'. PMRS, PORMG 2009/124/17. Photograph reproduced with the kind permission of Portsmouth Museums and Records Service.

Work on the two new Locks, C and D, which had begun in 1908, was completed in 1913 and 1914 respectively, the contractors being Morrison & Mason, Glasgow. The sliding caissons at their western end, operated by compressed air, were made by Swan Hunter & Wigham Richardson. The broad quay separating the Fitting Out and Rigging Basins interfered with navigation at the eastern extremity of the new Locks and it too was removed, together with the caisson between the two Basins, which became a single entity. The northern quay of the Rigging Basin, known as Fountain Lake Jetty, was pierced by a caisson which was retained despite its being of use to the largest ships only at the highest tides; it was eventually closed in 1923. Since the plan called for one large basin in place of the existing three, and because it interfered with access to the locks, much of the wall between the Rigging and Repairing Basins was demolished together with its caisson, leaving an eastern remaining section, known as the Promontory. See the HE 1900 map MD95/03034 showing the Fitting Out, Rigging and Fitting Out Basins.

Fig. 478. Concrete infilled section (1923) of the northern quay of the Portsmouth Rigging Basin (Fountain Lake Jetty) where previously a caisson had accessed Fountain Lake. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 479. Date detail (1923) of infilled section of the northern quay of the Portsmouth Rigging Basin (Fountain Lake Jetty). A. Coats 2013. Reproduced with the permission of the MoD.

This civil engineering work was unquestionably the greatest physical development in the yard during the entire twentieth century. Since no reclamation from the harbour was necessary, the elaborate system of the Great Extension was not required, but even so the scale of the project was impressive by any standard. Manual labour was replaced by pile drivers; some sheer legs were still worked by labourers, but steam cranes, of which six varieties were employed, were at the core of the operation, which arguably was at the cutting edge of contemporary civil engineering (Riley, 1995).

Fig. 480. Second World War brickwork repairs to the north side of Portsmouth C Lock (1913, 1940) following Second World War bomb damage. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 481. North side of Portsmouth C Lock (1913), looking east. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 482. Portsmouth C Lock, western sliding caisson (1913). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 483. Roller fairlead (1911) by Stothert & Pitt Ltd Engineers Bath on the western jetty between Portsmouth C Lock (1913) and D Lock (1914), part of the former Coaling Point. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 5. Photograph showing a Phoenix Caisson for the Mulberry Harbour under construction in C Lock, the Royal Naval Dockyard Portsmouth (27.1.1944). IWM Image H 35374 (2003/583 PMRS) supplied by PMRS, copyright courtesy the Imperial War Museum.

In **C Lock** (1913, SU 632715 012945) below the granite coping stones and brick walls (the first use of such engineering bricks at Portsmouth) there are three deep altars; the brickwork on the north side is varied, probably resulting from war damage. The sliding caisson at the western end of the lock has been (in April 2013) removed from its position, exposing the camber. It was positioned a few yards to the west, the pressure of water in the harbour forcing it against the masonry of the Lock. This arrangement was not entirely satisfactory, requiring motor pumps to deal with leakage. The reason for this temporary situation was the need to undertake repairs within the camber. During the Second World War C Lock suffered damage. On 12 August 1940 two bombs fell on the south side, one near the northeast corner of the Tidal Basin, damaging the operating gear of B Lock caisson and one damaged the railway track and main dock pumping culvert, also wrecking Rigging House No 3, a boiler house, stores and offices on the quay between C Lock and B Lock, causing one death and nine casualties. One bomb fell on the north side, causing the dock wall to bulge by three feet and demolishing rail and crane tracks. Another fell on the north side on 24 August 1940, to the west of the previous one, causing a smaller bulge but a deeper fracture in the dock structure. It also shattered railway and crane tracks and mains services. The same raid damaged D Lock, a bomb falling on a capstan pit at the west end on the north side, 'demolishing the capstan machinery' and 'cracking the wall of the caisson chamber vertically', while another bomb demolished thirty feet of the southern end of the North-West Wall. (TNA, August 1940, ADM 1/10949)

Fig. 484. Portsmouth Dockyard, Pumping Engine House, Plan and Sections. SCE, Drawing No. S393, 23.3.1908. 2/239. BAES. Unicorn (1997). Technical Inspection. Reproduced with the permission of the MoD.

Fig. 485. Portsmouth Dockyard, New Lock C, Pumping Engine House, Elevations. SCE, Drawing No. S394, 23.3.1908. BAES. Unicorn (1997). 2/239. Technical Inspection. Reproduced with the permission of the MoD.

Fig. 486. Portsmouth Dockyard, New Lock C, Pumping House Details of Steelwork, SCE, Drawing no. S399, 23.3.1908. BAES. Unicorn (1997). 2/239. Technical Inspection. Reproduced with the permission of the MoD.

Fig. 487. Portsmouth Dockyard, New Lock C, Boiler House Roof Details, SCE, Drawing no. S400, 23.3.1908. BAES. Unicorn (1997). 2/239. Technical Inspection. Reproduced with the permission of the MoD.

Fig. 488. Portsmouth Dockyard, Plan of Foundation Plinths for Diesel Generator, PSA, DOE, Drawing no. SK1/1, Sept 1989. 2/239. BAES. Unicorn (1997). Technical Inspection. Reproduced with the permission of the MoD.

Fig. 489. South elevation, Portsmouth North Pumping Station (No. 4) and Boiler House/Store 38 (1913, 2/239-240). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 490. Window, south elevation of Portsmouth North Pumping Station (No. 4) and Boiler House/Store 38 (1913, 2/239-240), showing stucco over the underlying lower brick plinth, whereas the eastern elevation has Portland stone. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 491. East elevation and main entrance of Portsmouth North Pumping Station (No. 4) (1913, 2/239) and Boiler House/Store 38 (1913, 2/239-240) with George V 1913 date plaque. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 492. George V 1913 date plaque on the east elevation of Portsmouth North Pumping Station (No. 4) (1913, 2/239) and Boiler House/Store 38 (1913, 2/239-240). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 493. Cast iron lamp bracket and rainwater hopper, northeast corner of Portsmouth North Pumping Station (No. 4) and Boiler House/Store 38 (1913, 2/239-240). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 494. Entrance with rainwater hoppers, south elevation of Portsmouth North Pumping Station

(No. 4) and Boiler House/Store 38 (1913, 2/239-240). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 495. Entrance, north elevation of Portsmouth North Pumping Station (No. 4) and Boiler House/Store 38 (1913, 2/239-240). A. Coats 2013. Reproduced with the permission of the MoD.

On the south side of C Lock at its western end is a capstan by Clyde Booth & Rodley with a capacity of 16 tons. To the south-east is the elegant two storey **North Pumping Station (No. 4)** and **Boiler House/Store 38** (1913, 2/239-2/240, MoD, SU 633415 012471); the one storey boiler house has the higher number, the engine house the lower. The boiler house is single storey with five bays, each marked with Portland stone arches, as is the entrance at the western elevation, above which are the date and letters 'GR' set in stone. The brick walls have copings, lintels and dressings of Portland stone. In Georgian style the slate roof is almost hidden behind a parapet, decorative rainwater headers appearing at the gutter line. Cast iron lamp brackets remain at the eastern corners. Predictably the three bay engine house is almost twice as tall to allow for steam driven machinery. It was equipped with two horizontal impeller type main dock pumps each capable of dealing with 15,000 tons of water per hour. One of the two smaller drainage pumps (2,000 tons per hour) was electrically driven. Within the pump house four wells of seventeen to twenty metres deep and four metres wide are brick lined. In 1989 it was powered by a Rolls Royce engine. Variation in the brickwork indicates repair work at different dates, but the particularly impressive naval arms with date and 'GR' above the east elevation appears untouched. The lower six feet of the wall of both boiler and engine houses is stucco; doubtless it might originally have been mistaken for stone, but the underlying brick is exposed in many places. Some brick spalling, missing render, vegetation growing in damp brickwork, and missing mortar in stonework and glazed brickwork joints was noted in 1987 and 1994. In 1997 roof tiling needed to be replaced and windows in the south and west elevations needed replacement due to decay. The 1908 elevation shows its original intended design; the 1966 plan shows slight differences, probably in the final execution, its position in relation to B and C Locks, and the floor plan showing the position of the wells and functions in 1966. Stone dressings observed on the west end of the south elevation appear to have been renewed or cleaned in the recent period. (BAES, MRM, April 1987, Structural Report, paras 5, 6; BAES, Evans Grant, Feb 1994 Structural Appraisal, para 4; BAES, Unicorn, 1997, Technical Report, p. 4) The team considered that North Pumping Station (No. 4) should be listed for its continuation of neoclassical architecture and function in serving the docks and locks to the north and south since the early twentieth century. Facing the west elevation of the Boiler House is a small **Motor Generator House** (2/241, MoD, SU 632990 012502), the date 1912 advanced by Lambert, but it is unlikely that this building would have been built obscuring the fine Boiler House entrance until somewhat later. Along the entire south edge of C Lock is a 20 ton capacity travelling crane by John Boyd dated 1976. Such a facility, by Stothert & Pitt, was in place in 1929.

Immediately to the west of the North Pumping Station is the single storey **Hydraulic Workshop** (c.1980, 2/242, MoD, SU 63291 01233), notable for its ribbed plastic walling sitting above three feet of brickwork. Adjacent to the north is the **Safety and Quality Office** (c.1990, 2/243, MoD, SU 63171 01245), a three storey brick office block with square windows rather smaller than might be expected for such a function. In this area was also a Degaussing Station (1941, 2/253) which no longer exists.

On the north edge of the C Lock is a 30 ton travelling crane by John Boyd Branch-Annan dated 1976, replacing one of similar capacity by Stothert & Pitt, 1930. There is a capstan at the western end by the General Engineering & Boiler Co, New Cross, London, and a number of long lasting roller fairleads by Vaughan & Son, Manchester, 1911, and Stothert & Pitt, also 1911. On the north side of the lock is a four storey brick building with large windows: **D Lock Production Offices** and **Industrial Amenity Room** (c.1975, 2/261, MoD, SU63219 01338), now **C/D Lock Complex Workshop and Offices**. To the east is a long building housing a variety of **Workshops and Stores** (1975, 2/262-2/264, MoD, SU 63340 01338), replacing the Shipwrights' Store of 1911. It consists of a ground floor of breeze blocks and a first floor of ribbed plastic; at the centre is the Boiler House for C and D Locks.

North of and parallel to C Lock is **D Lock** (1914, SU 632715 012838). Apart from the east end caisson,

which has the usual function but whose plates are angular and appear to have an anti-rust coating, D Lock is similar to C Lock. At the time of the visit (April 2013) a Wightlink Isle of Wight car ferry was in the lock, which was thus being used as a dry dock, emphasising commercial applications. A further sign of the times is a short-stay car park immediately to the south-west of the lock, while on the south side at the eastern end is a 35 ton travelling crane by NDC Cranes, Oosterhout in the Netherlands, dated 2013, marking a change to installing non-British cranes in the yard. The north side travelling cranes are both by John Boyd Branch-Annan, 1975, but are unusual for their lifting capacity; one can deal with a 100 ton load, but the second can cope with no less than 250 tons. The reason for this is that a very limited radius is required since the vessels to be serviced were berthed in The Pocket and the width of the quay for D Lock and The Pocket was small. Nevertheless this represents a real advance on the 30 ton Stothert & Pitt travelling cranes working here in 1915. There are capstans at the western end of the Lock by Douglass & Grant, Kirkaldy (two), by Cowans Sheldon 1941, and another by Clarke Chapman Marine with a capacity of 16 tons. At the eastern end are capstans by Douglass & Grant and by Cowans Sheldon, 1940, together with a roller fairlead by Stothert & Pitt, 1911. In 2015 a new caisson was in place at the eastern end, connecting D Lock to Basin No. 3. In 2013 the quay between D Lock and The Pocket was littered with containers laden with ships' stores, giving the impression of a real working environment. Amid them is a new, small **Office** (c.2000, 2/279, MoD, SU 63186 01433) with a red brick ground floor topped by ribbed plastic, used by the Base Commander Air Stores Returns.

Fig. 496. Portsmouth North West Wall quay, its width extended and supported by concrete pillars on the harbour side, added c.1914. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 497. Original Portland stone inner face of Portsmouth North West Wall with concrete coping in the Pocket, created when D Lock was built in 1914. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 498. Concrete inner face of Portsmouth North West Wall in the Pocket, constructed when D Lock was built in 1914, abutting the original Portland stone inner face. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 499. Original Portland stone inner (south-facing) wall of Portsmouth North West Wall in the Pocket. A. Coats 2015. Reproduced with the permission of the MoD.

Along North West Wall (which separates The Pocket from the harbour), there is a small brick electricity **Substation** (1976, 2/283, MoD, SU 63154 01462), and then a two storey brick latrine (1910, 1975, 2/285), now painted white, the upper floor of which was probably added in the 1975 refurbishment. Beyond is a long **Ships Lay Apart Store** (1975, 2/286, MoD, SU 63198 01512) with a brick base topped by ribbed metal sheeting. At the corner of The Pocket is the **Northern Switch House** (1975, 2/287, MoD, SU), a small brick structure. On the harbour side of the Wall is a 25 ton travelling crane by John Boyd Branch-Annan dated 1975 and **Oil Tanks** (1975, 2/288, MoD, SU 63118 01422). Contractors who were ground stabilising in April 2015 on a section of Fountain Lake Jetty near The Pocket stated that the inner fill of the jetty comprised loose gravel. They were coring down 10m and applying polyurethane resin to prevent water penetration.

### 3.6.2.1 Railways

Fig. **293**. Remaining cast iron elements of Portsmouth Railway Swing Bridge on South Railway Jetty, c.1876. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. **294**. Portsmouth Railway Waiting Room (1878, 1/47) on South Railway Jetty. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. **295**. Portsmouth Railway Shelter (1893, 1/45) on South Railway Jetty, re-sited since c.2000 on the west quay of the North Camber. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 500. MD95/03038 (1932 annotated to 1944). Crane and Railway Track Layout Plan HM Dockyard Portsmouth. Reproduced by permission of Historic England.

Fig. 501. Southern gate (1849), Edinburgh Road dockyard railway crossing. A. Coats 2013.

Fig. 502. West stanchion, south gate (1849), Edinburgh Road dockyard railway crossing. A. Coats 2013.

Fig. 503. Route of the single track railway line (1849) running north from Edinburgh Road to Unicorn Gate. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 504. H M Naval Dockyard, Portsmouth: Boundary wall. Elevation and sections of new railway gate at Unicorn entrance. Scale: 1 inch to 2 feet. SCE Department. TNA (1882) WORK 41/326. Reproduced with the permission of The National Archives.

Fig. 505. Railway track west of Portsmouth Dock No. 15 (1876). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 506. Section showing railway track near the Promontory, east of Basin No. 3 (1881), convicts' workshops and timber sheds on the site of the later Factory (1903, 3/82). Colson, Portsmouth Extension Works, Plate 4, *Minutes of Proceedings of The Institution of Civil Engineers*, Vol. LXIV. Session 1880–81, Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Fig. 507. Railway track near Portsmouth Basin No. 3 (1881). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 508. Route of the single track railway line (1849) running north from Portsmouth Town Station to Unicorn Gate via Unicorn Road. Drawing no. 301/49, 1949. BAES. Main/Nelson Gate, Plan for Works & Buildings. Portsmouth R.N. Barracks & Subsidiary Establishments. Reproduced with the permission of the MoD.

Fig. 509. H M Naval Dockyard, Portsmouth: Miscellaneous. Plan of dockyard showing programme of work on railways, 1951–1954. Annotated with reference notes. Scale: 1:1,666. SCE's Department. Drawing no. 486/51, drawn by F. T. Haisman. Section showing new works near the docks. TNA WORK 41/315. Reproduced with the permission of The National Archives.

Fig. 510. H M Naval Dockyard, Portsmouth: Miscellaneous. Plan of dockyard showing programme of work on railways, 1951–1954. Annotated with reference notes. Scale: 1:1,666. Superintendent Civil Engineer's Department. Drawing no. 486/51, drawn by F. T. Haisman. Section showing new works in Area 3 and the South East Gate and East Gate (now Trafalgar Gate), in use. TNA, WORK 41/315. Reproduced with the permission of The National Archives.

Fig. 511. H M Naval Dockyard, Portsmouth: Miscellaneous. Plan of dockyard showing programme of work on railways, 1951–1954. Annotated with reference notes. Scale: 1:1,666. Superintendent Civil Engineer's Department. Drawing no. 486/51, drawn by F. T. Haisman. Section with the key to the years when work was carried out. TNA, WORK 41/315. Reproduced with the permission of The National Archives.

An internal horse-drawn tramway existed from c.1825, with many turntables to access buildings, but the Great Extension from 1867, which doubled the size of the dockyard, provided space for locomotives to haul materials. Railways were also crucial to the building of the Extension and were able to operate more easily within the extra space. Marden suggested that a 'rudimentary tramway had connected to the dockyard by 1849', but a branch line from the Portsmouth Terminus to the Dockyard, crossing War Department land, was approved in February 1856, to enter near the East Gate. In the same month John Penn and Son were directed to send machinery 'to the Yard by Railway.' A single platform at Unicorn Gate was completed in March 1857. (Marden, 2011, pp. 1, 2, 7, 109; Hamilton, 2005, pp. 4-5, 27) The 1864 south elevation of Unicorn Gate (TNA, WORK 41/316) shows a temporary



Railroad Gateway west of the gate. Further drawings show timber railway and side gates (TNA, WORK 41/324, c.1869–79; WORK 41/325, 1878).

The railway depôt was at the eastern end of the yard and there were twenty-five miles of track at its peak. Over forty steam, and from the 1950s, diesel locomotives were in operation, the earliest in 1869, the last transferred from Devonport in 1969. They were typically four-wheeled to manage the tight turns. Marden includes many pictures of locomotives, some posing in front of dockyard buildings, but others in scrap yards. He includes some useful information about dockyard contractors. Leather, Smith and Co were involved from 1867–75 in building Fountain Lake Jetty, four new basins, entrance locks A and B, Dry Dock Nos 12 and 13, and entrances to Dry Dock Nos 14 and 15. They used thirteen locomotives (as well as convicts) in constructing the Extension between 1867 and 1875, which had thirteen miles of rail track, and transported spoil to Whale Island by rail. John Price had the contract for dry dock numbers 14 and 15 in 1893–96, using four locomotives. From 1908–16 contractors Morrison and Mason converted the three enclosed basins into one and built two larger lock gates, using six Barclay locomotives and one Hawthorn, Leslie. A powerful 0-4-0T Barclay diesel No. 1403 worked for the Dockyard Engineering Department from 1915 to c.1960. Marden included pictures of Basin No. 3, Dry Dock Nos 14 and 15 and Lock C. (2011, pp. 5, 7, 9, 10, 11, 40, 109, 125, 129)

The substantial modifications to Unicorn Gate coincided with the last throes of the single track railway line (1849) which entered the dockyard running along the east side of Unicorn Road. For two decades after the closure of the dockyard railway system there was a somersault signal on the corner of Alfred and Unicorn Roads, while an unusual slotted semaphore signal, together with iron gates closing the line off from pedestrians on Edinburgh Road, were remnants of the earlier transport age. The chimney of the keeper's hut at Edinburgh Road stood at an angle of forty-five degrees, giving the impression of a rocket bomb protruding through the roof. In 1876 a further branch line was connected to South Railway Jetty on Watering Island via a viaduct and swing bridge from the Harbour Station. The Royal Naval Railway Shelter was completed in 1893. This line became the main arrival and departure point for personnel, but was damaged by bombing in the Second World War and demolished. Remnants of track remain, as well as the Royal Naval Railway Shelter (1/45) and the Waiting Room (1/47).

The 1938 extent of railway track is marked on the baseboards of Engineer Admiral Thompson Gurnell's 1938 Dockyard Model in the National Museum of the Royal Navy. On 12 August 1940 the railway line entering the yard at Unicorn Gate was blown up during an air raid, but the crater was filled in and the track swiftly reinstated (TNA, ADM 1/10949). The Crane and Railway Track Layout Plan HM Dockyard Portsmouth (HE, MD95/03038 1932 annotated to 1944) shows new lines added during the Second World War and bomb damage. Rail traffic declined after the 1950s with the increase of road transport, dropping drastically in the 1970s. The last train ran in November 1977 and the line closed in December 1978, with a few locomotives retained for internal haulage until 1979. (Marden, 2011, pp. 1, 2, 7, 109) The Alfred Road level crossing gates have been preserved and re-sited (in shrubbery) just outside the new entrance to the yard, in fact close to HMS *Nelson* barracks railway station, removed in 1978. The level crossing gates over Edinburgh Road are still *in situ*, permanently open. A plaque dated 1990 commemorates the planting of plane trees adjacent to what was the railway line, marking 'improvements to Market Way by Hampshire County Council'. With trees on one side and the Unicorn Training Centre and its ornate wrought iron gate abutting the new red brick dockyard wall, this yard entrance is impressive.

### 3.6.3 Area 3

Fig. 512. Portsmouth HM Naval Base Area 3 (1974). MoD *HM Naval Base Portsmouth Building Location/Numerical Index*. Reproduced with the permission of the MoD.

Fig. 513. Plan of part of HM Dockyard Portsmouth before its enlargement, annotated to 1895. Thomas A. Mould, Captain R. E., 4/1/1851. Director of Works Office, 3.1.1851. Defence Estates Plans.

Section showing the original locations of Unicorn and Lion Gates within Portsea's fortifications. AdL Vz 14/110 (1851–1895). Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

Fig. 514. H M Naval Dockyard, Portsmouth: Boundary wall (1864). Elevation showing proposed reconstruction of Unicorn Gate and additions to wall. Drawing No. 101. Scale: 1 inch to 8 feet. SCE's Department. With additions to wall in red ink. TNA, WORK 41/316. Reproduced with the permission of The National Archives.

Fig. 515. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. View of the re-sited Unicorn Gate from the north-west. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 516. MD95/03032 (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900, PSA Drawing based on 1850 map showing changes in yellow and later buildings in red dotted lines. Section showing Portsmouth Unicorn Gate (1779) moved in 1868 and the streets taken into the Yard in the 1970s, the most recent Dockyard acquisition. It notes that the gates (now missing) were renewed in 1955. Reproduced by permission of Historic England.

Fig. 517. North elevation of Portsea's Unicorn Gate (1779) moved in 1868 to its present position. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 518. South elevation of Portsea's Unicorn Gate (1779) moved in 1868 to its present position. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 519. Unicorn pediment on the south elevation of Portsmouth Unicorn Gate (1779) moved in 1865 to its present position. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 520. H M Naval Dockyard, Portsmouth: Boundary wall. Unicorn gate: plan, sections and front and rear elevations of small entrance gates (c.1869–79). Scale: 1 inch to 1 foot. TNA, WORK 41/324. Reproduced with the permission of The National Archives.

Fig. 521. H M Naval Dockyard, Portsmouth: Boundary wall. Unicorn gate: elevations of proposed grille and main, side, and railway gates (1878). Scale: 1 inch to 2 feet and 1 inch to 1 foot. SCE Department. TNA, WORK 41/325. Reproduced with the permission of The National Archives.

Fig. 522. J251/01/71. Photograph of Muster Bell at Portsmouth Unicorn Gate (18 May 1971). ©Crown copyright.HE.

Fig. 523. J270/09/64. Photograph of Outmuster at Portsmouth Unicorn Gate (23 Oct 1964). Reproduced by permission of Historic England.

Fig. 524. Plaque and metal box which formerly housed a gas jet for workers to light their pipes and cigarettes in the 1863–65 Portsmouth Great Extension wall near Unicorn Gate, refurbished by dockyard apprentices in 1979. A. Coats 2013. Reproduced with the permission of the MoD.

**Unicorn Gate** (1779, Grade II, 1244587, MoD, SU 638615 007823) was originally a gateway through Unicorn Ravelin in Portsea fortifications, then moved and re-erected within the new 1865 perimeter wall. The 1864 drawing instructed that:

The Masonry of the Old Gateway is to be taken down and reset without redressing any part of it, should repair to the Stonework be necessary it is to be done after the Work is set–

The additions of side Arches and sub Plinth are to be formed of Old Stone arranged in such manner as to dimensions as the Stone will admit.

It is supposed that the Old Gates may be used adding to them at the bottom. (TNA, WORK 41/316, Unicorn Gate south elevation, 16.8.1864. Drawing no. W 101)

In 1977, Victory Gate was closed to vehicular traffic and cannon bollards set in the roadway. Land acquired to the east of Unicorn Road, edging Flathouse Road, which followed the Great Extension wall, provided a much wider road entrance to the new Main (Unicorn) Gate. Due to this extension Unicorn Gate lost its function as a dockyard entrance, becoming a monument at the centre of a roundabout. The creation of the latter necessitated the removal of part of the wall which abutted the gate on each side. Rather than simply cutting back the wall, each side was imaginatively rebuilt in 1979 in a style closely resembling the original as a curve on each side of Unicorn Road. The eastern curve has been fitted with an original metal box which formerly housed a gas jet for the convenience of workers lighting their pipes and cigarettes at out-muster – no smoking being allowed in the yard. The plaque states that it was refurbished by apprentices of the nearby Training Centre in 1979. On the south-western edge of the roundabout a **Latrine** (1979, 2/62, MoD, SU 63843 00754) and a **Gas Meter Test House** (1979, 2/63, MoD, SU 63834 00748) were constructed, both in rich red brick.

A number of streets forming the third twentieth century acquisition – Copenhagen, Abercrombie, Nile, Trafalgar, Duncan, Conway and Chalton Streets – which had largely been cleared of housing (**Fig. 516**), were taken into the yard, forming a wedge-shaped plot between Flathouse Road and Market Way. The result was that the western stretch of Flathouse Road, some 300 yards in length, was closed to the public, as was the north-western part of Unicorn Road. From 1954–94 St Agatha’s Church was a naval store within the dockyard, but in 1981–82 a contract for a wall to separate it from the transport section was awaiting approval. (TNA, 1981–82, DEFE 69/668) The extension is enclosed on the Market Way border by a rich red brick wall, broken at frequent intervals by metal railing.

Fig. 525. Junction of the 1981–82 Portsmouth Dockyard wall with the 1863–65 Great Extension wall, Market Way. A. Coats 2014. Reproduced with the permission of the MoD.

Fig. 526. Section of the Portsmouth Great Extension wall (1863–65) east of Unicorn Gate, with the 1981–82 rich red brick wall running parallel, creating pedestrian access to the Motor Transport Complex. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 29. Portsmouth Unicorn Training Centre Gate (1980). A. Coats 2014. Reproduced with the permission of the MoD.

At the entrance is the notable **Apprentice** or **Unicorn Training Centre** (1980, 3/1, MoD, SU 639615 007304), a large concrete framed two storey, generously glazed structure. Its south-eastern corner is currently used by 1710 Naval Air Squadron. There is a **Police Office** (1980, 3/3, SU 639046 006866), with the new gate and checkpoint (1980, 3/4, SU 639183 006985) established some 150 yards to the south-east in Unicorn Road. The Great Extension wall was breached at two points on Circular Road to give access to the **Transport Operations Centre** (1980, 3/5-3/6, MoD, SU 640096 008029) having a brick base and generous glazing above; it includes garages, offices and vehicle park. Immediately to the south lies the 1710 Naval Air Squadron Hangar (c.2000, 3/8, MoD, SU 640390 007554) an accident investigation facility. Its tall ground floor has unusual horizontal curved bright metal fluting, above which is a white, metal windowless cover.

As late as the interwar period, to the east and south-east of Basin No. 3, there was still empty land and a railway marshalling yard. A good many of the buildings thus belong to the second half of the twentieth century, creating a very different ambience from the heritage area. Commencing just to the north of the old Portsea town gate, **Unicorn Gate** (q.v.), is the **Portsmouth Naval Base Health Safety and Environment Group** premises (1993, 3/56, MoD, SU 638452 008460), a rectangular, red brick two storey building with a pitched roof; it is on the site of the former house and garden of the Chief Inspector of Police, set out in 1902 (Lambert, 1993). Adjacent, to the east, is the **Port Royal Restaurant** (1968, 3/68, MoD, SU 638777 008404, BAES), a two storey structure of fluted concrete. The site was the original location of the Workmen’s Dining Rooms of 1902 and in 1925 the Women’s Dining Rooms. To the east is the brick former **Torpedo Dépôt** (1886, 3/69, MoD, SU 639508 008648), now the **Returns Processing Facility**, which originally had three pedimented features; that which remains has a particularly decorative low relief. The dépôt was extended in 1925. In 1992 it was in

multi-use: Workshop, Sea Cadet Store, Store, Management Centre and Safety Training Centre (Lambert, 1993). The north elevation, facing the Factory, is single storey with a low gable capped by Portland stone. Added on to the east of the dépôt is **Store No. 78** (1960, 3/76, MoD, SU 640352 008829), a brick structure with a variety of current uses: Export Store, Storewrights' Shop Annex and Returns Bulk Layapart Area.

Fig. 527. Rear of Portsmouth Torpedo Workshop (1886), now a brick Storewrights' Workshop (3/67). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 58. Original bay and entrance of Portsmouth Torpedo Workshop (1886, 3/69), with plastic strips to keep out birds in summer. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 528. Portsmouth Torpedo Workshop (1886, 3/69) south elevation. A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 529. Portsmouth Torpedo Workshop (1886, 3/69) dated pediment. A. Coats 2015. Reproduced with the permission of the MoD.

The Edwardian *piece de resistance* is the **Factory/100 Store** (1903, 1994, 1996, 3/82, MoD, SU 639315 009623), at 580 feet longer than Dock No. 12 and a clear height of 33 feet. It was built on the site of earlier timber sheds and the brickfields where the convicts worked. It was the largest engineering workshop in the yard at the time of its construction, its date marked by stone plaques set in the brickwork over the main west door and a north pediment, and it is still the largest building. Its size was partly made possible by the use of steel, a lighter and stronger material than wrought and cast iron. The peripheral brick walls, some 'of a massive thickness,' are mainly loadbearing and support the roof; it was suggested in 1989 that the roof was originally of slate, but from wartime records it must also have had some glass. It was noted in 1990 that 'every third truss in the high level roofs has as its lower boom, a built up lattice beam-column, presumably to transfer wind forces across the trusses.' There are five bays in red brick, two being taller than the others, the western elevation of these two having wide entrances, with headings of gauged brick, above which are large windows stretching almost to the roof line. Its power requirement was such that the Factory was accorded its own engine house, the three bays of which are located on the north elevation, the central bay having a date of 1903, behind which is a clerestory, suggesting that this was the Boiler House (3/82J). In 1929 there was internal specialisation: Bays 1 and 2 were the Torpedo Shop, Bays 3 and 4 the Erecting Shop, and Bay 5 the Fitting Shop. At this time 725 men were on the strength, the machine shafting was driven by electric motors and hot air heating was supplied by a Buffalo Forge system (Anon, 1929, p. 22). A water drinking fountain was also in place. On the north side an Oil Purifying Plant was operational in 1929, but this has been removed.

Fig. 506. Section showing railway track near the Promontory, east of Basin No. 3 (1881), convicts' workshops and timber sheds on the site of the later Factory (1903, 3/82). Colson, Portsmouth Extension Works, Plate 4, *Minutes of Proceedings of The Institution of Civil Engineers*, Vol. LXIV. Session 1880–81, Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Fig. 530. HM Dockyard Portsmouth – New Factory, AE 1902–03, Part 1, Subhead B, Item 7, Transverse Sections looking East and West. SCE, Drawing no. 10/K10. 3/82. BAES. Unicorn (March 1996). Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 531. HM Dockyard Portsmouth – New Factory, AE 1902–3, Part 1, Subhead B, Item 7, Ground Plan. SCE, Drawing no. 2/K2, 3.1.1903. 3/82. BAES. Unicorn (March 1996). Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 532. New Factory Portsmouth, AE 1902–03, Part 1, Subhead B, Item 7, Offices, Testing House, Boiler House & Coal Store, Plan. Elevation, Sections. SCE, Drawing no. 20/K20, 3.2.1903. 3/82. BAES. Unicorn (March 1996). Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 533. HM Dockyard Portsmouth – New Factory, AE 1902–03, Part 1, Subhead B, Item 7, West

and East Elevations, Drawing no. 7/K7, Oct 1903. 3/82. BAES. Unicorn (March 1996). Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 534. H M Dockyard Portsmouth – New Factory Half North Elevation AE 1902-3. SCE, Drawing No. 8/K8, Oct 1908. 3/82. BAES. Cecil Denny Highton (July 1996). Plan 100 Store Phase 2, CDH REF 91077. Reproduced with the permission of the MoD.

Fig. 535. H M Dockyard Portsmouth – New Factory South Elevation, AE 1902-3, SCE, Drawing no. 9/K9, Oct 1908. 3/82. BAES. Cecil Denny Highton (July 1996). Plan 100 Store Phase 2, CDH REF 91077. Reproduced with the permission of the MoD.

Fig. 536. Portsmouth Factory (1903, 3/82) east elevation showing the original gables. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 537. Portsmouth Factory (1903, 3/82) north elevation showing the three bays of the engine house. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 49. Date plaque 1903 on Portsmouth Factory (1903, 3/82) north elevation. A. Coats 2013. Note the scrolled abutments which also support Rodney's pediment (1847–48, NE/14), the Gymnasium roof gable (1893–1900), the gable on the north elevation of Barham (1899, NE/82) and Rochefort Dockyard Ropery (1666–69). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 538. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. The Factory (3/82) from the west. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

On 12 August 1940 a bomb caused a large crater at the Factory's northwest corner, fracturing services, demolishing railway track and damaging offices, windows and glass in the roof (TNA, ADM 1/10949). In the 1950s the Portsmouth Dockyard Modernisation and Improvements Programme planned to rebuild the SE Corner: 'Reinstate area lost by enemy action and to provide additional space necessary to relieve existing congestion and for Apprentices Training Area.' (TNA, ADM 1/26499, 1956–58). The BAES drawing dated 27.5.1960 shows wall foundations to be strengthened in this corner.

Fig. 539. Portsmouth HM Dockyard, SE Corner of MED Factory, Foundation Layout and Details of Foundations, Navy Works Dept, Admiralty, Portsmouth District, Plans, Sections of Wall Foundations, Drawing no. 583/59, 27.5.1960. 3/82. BAES. Cecil Denny Highton (July 1993). Reproduced with the permission of the MoD.

A number of modifications have taken place. The Factory lost its manufacturing function in 1984, having worked flat out prior to the Falklands Conflict two years earlier, and was converted to a Store in 1986 with a new Plant Room. Its external walls are of smooth red brick, with an artificial stone coping and an insulated roof. The building is now **Store No. 100**, a warehouse equipped with sophisticated machinery, including an electronically operated dark warehouse. (BAES, MRM Partnership, 1989, Structural Report, para.5; BAES, MRM Partnership, Nov 1990, Structural Report, paras 5.1, 5.2; BAES, Unicorn, March 1996, Structural Survey, para. 2.2; BAES, Unicorn March 2001, Professional Structural Survey, p. 3)

Fig. 540. HM Naval Base Portsmouth, Conversion of Building No. 3/82 to Store, Ground Floor Plan, PSA, DoE, Drawing no. L(20)03, Oct 1985. BAES. Cecil Denny Highton (July 1993). Reproduced with the permission of the MoD.

Fig. 541. HMNB Portsmouth, Store, New Amenities and Plant Room Block, Elevations, Section and Plan, PSA, DoE, Drawing no. L(20)06, Jan 1986. 3/82. BAES. Unicorn (March 1996). Structural Appraisal. Reproduced with the permission of the MoD.

In 1986 the Factory was converted into a warehouse with four bays of high lift pallet racking and storage. In 1994 an extension to Bay 1 was built at the east end of the north elevation for Issue Receipt

offices which doubled the bay width. A stone date plaque was inserted into the gable end, the design having similarities with the originals, an example of dockyard pride in continuing a former style. However, the gable is higher and more steeply pitched, and the decorative stonework around the windows is not present in the older structure. The roof line is lower than the gable, the ribbed metal sides extending almost to the Engine House, bearing a sign Main Entrance (for pedestrians). A new roof has been erected of corrugated sheeting on timber boards for the south faces and translucent sheeting for the north faces, pierced by skylights. In 1996 the western elevation was fronted by a cantilevered canopy and service building for deliveries by road, thus obscuring the low relief devices above the main entrances. While the external walls were found to be 'satisfactory' in 1996, it was noted that there were two vertical cracks on the west elevation which appeared to be widening. On the south elevation the lower three feet of many of the windows have been bricked up, probably related to internal machinery, and at the eastern end of the same side brickwork has been replaced by grey painted metal cladding incorporating fenestration identical to that in the western section, probably to repair wartime bombing. (BAES, Cecil Denny Highton, July 1996, Plan 100 Store Phase 2, CDH REF 91077; BAES, Scott Wilson Kirkpatrick, 1996 Plan 100 Store Proposed Link; BAES, Unicorn, March 1996, Structural Survey, paras 2.2, 2.4, 2.5, 3.2)

Fig. 542. 100 Store Phase 2, South, East Elevations, CDH ref. 91007 (July 1996) show the Miniload (3/82M) running along the east face of 3/82, the 1993 brick gable pediment to the extension of Bay 1 and the roof height of the bay. BAES, Cecil Denny Highton for Scott, Wilson Kirkpatrick. Reproduced with the permission of the MoD.

Fig. 543. Plan Extension to 100 Store, HMNB Location Plan, CDH REF 91034, Drawing no. AL(0)200/0. BAES. Cecil Denny Highton (July 1993). 3/82. Reproduced with the permission of the MoD.

Fig. 54. East elevation showing the 1994 brick gable pediment to the extension of Bay 1 of Portsmouth Factory/100 Store (1903, 3/82), designed to appear similar to the original gable pediments. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 544. East elevation showing the 1994 date plaque within the new brick gable pediment to the extension of Bay 1 of Portsmouth Factory/100 Store (1903, 3/82). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 545. North elevation showing the extension to Bay 1 of Portsmouth Factory/100 Store (1903, 3/82) and the rear of the brick gable pediment, designed to appear similar to the original gable pediments. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 546. South elevation of Portsmouth Factory (1903, 3/82) showing the raised window sills. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 547. South elevation of Portsmouth Factory (1903, 3/82), showing the eastern section of grey painted metal cladding incorporating fenestration modelled on that of the western section. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 548. Portsmouth Factory/100 Store (1903, 3/82), its splendid original west entrance partly hidden by the 1996 cantilevered canopy and service building. A. Coats 2013. Reproduced with the permission of the MoD.

Running along the entire length of the east elevation of 3/82 at ground floor level is an enclosed way in ribbed metal, termed Miniload (3/82M), a monorail linked to the Portsmouth Freight Centre (PFC, 3/88A), providing all weather protection. This conforms to plans submitted by Scott Wilson Kirkpatrick (who designed Victory HQ) in 1996 for 100 Store Development Phase 2 to install a Thyssen automated rail running crane system within 100 Store to store/distribute small parts via bar coding in trays which had been delivered from the PFC by monorail. With PFC, Central Receipts Facility, Central Packing Facility and General Purpose Support Store, 100 Store was part of the combined Central

Storage & Distribution Facility which was opened on 27 January 1999 to reduce personnel and meet 80% of the surface fleet's non-explosive stores requirement from Portsmouth. It had 135 staff working 'under one roof'. (BAES, MRM Partnership, Nov 1990, Structural Report, paras 5.1, 5.2; BAES, Cecil Denny Highton, July 1993, Plan Extension to 100 Store, CDH REF 91034; BAES, Cecil Denny Highton, July 1996, Plan 100 Store Phase 2, CDH REF 91077; BAES, Scott Wilson Kirkpatrick, 1996 Plan 100 Store Proposed Link; BAES, Unicorn, March 1996, Structural Survey, paras 2.2, 2.4, 2.5, 3.2; BAES, Dec 1998, Project Manager's Report, 100 Store Development Phase 2, paras 2, 3; BAES, Unicorn, March 2001, Professional Structural Survey, p. 3)

Fig. 549. 3/82. Central Storage & Distribution Facility, Formal Opening, One Roof Complex. NBC Portsmouth (27.1.1999). BAES. Reproduced with the permission of the MoD.

Fig. 550. Central Storage & Distribution Facility, Formal Opening, Covered Monorail Link, p. 6. NBC Portsmouth (27.1.1999). 3/82. BAES. Reproduced with the permission of the MoD.

Fig. 551. Miniload (1999, 3/82M), joining Portsmouth Factory (1903, 3/82) on its eastern side. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 552. Miniload (1999, 3/82M), running east-west from Portsmouth Factory (1903, 3/82) to the Freight Centre (1945, 3/88) with the General Purpose Store in the background (c.1995, 3/117). A. Coats 2013. Reproduced with the permission of the MoD.

Despite its modifications, the team considers that the Factory should be listed for its Edwardian neoclassical style, and its status in the early twentieth century rearmament period. Unicorn had thought that it was Grade II listed until they checked the list of buildings due for Quadrennial Inspection in 1996, and concluded 'in view of the extension currently under construction, is probably not listed at the present time.' (BAES, Unicorn, March 1996, Structural Survey, para. 4.4)

By climbing the stairs over the Miniload linking The Factory and the Freight Centre, two buildings are visible. The more northerly is the **Chemical Store** (1939, 3/85, MoD, SU 640646 010210) which has a concrete frame with brick infill; all the windows have been bricked up. It was originally No. 4 Wardens' Post and the Tool Room in 1944, built on the railway marshalling yard, then No. 101 Store. Parallel is **Store No. 55** (1936, 3/86, MoD, SU 640633 009873) on the site of the Converted Timber Store of 1920. This building is now the Mechanical Handling Equipment Training Facility. (Lambert, 1993)

Fig. 553. Red brick former Portsmouth EEM Workshop/Electrical Shop No. 1 (1945, 3/88) in the background, now part of the Portsmouth Freight Centre (c.1970, 3/88A), showing the covered reception area, with the east elevation of the metal clad First Outfits Unstows & De-stores (c.2000, 3/93) on the left. A. Coats 2013. Reproduced with the permission of the MoD.

Between Stores 64, 79, 88 and 108 and Circular Road is the entrance to a large apron for lorries to deliver materials to the **Portsmouth Freight Centre** (c.1970, 3/88A, MoD, SU 64191 00982), a single storey brick structure with a large canopy under which lorries can unload. Adjacent and physically linked to it is the very much larger, five storey building (1945, 3/88, MoD, SU 64192 01017). It is actually a slim structure with fourteen bays and generous fenestration, but with only three bays at each end. Goods are moved from the canopy of the Freight Centre at ground floor level. The large entrance at the east end is fringed with stone, together with a projecting cornice at its head. The latter is easily reconcilable with the need to move stores, but the five floors do suggest another function. It was built as the EEM Workshop, designed to carry out electrical work, later becoming Electrical Shop No. 1. It is very close to Flathouse/East Gate (1931). The site was originally part of the railway marshalling yard. It is now part of **123 Store/Supply Chain Offices**.

Fig. 554. Formal Opening, One Roof Complex, 1999. NBC Portsmouth (27.1.1999). 3/82. BAES, Central Storage & Distribution Facility (1945, 3/88). Reproduced with the permission of the MoD.

Fig. 555. MD95/04038. Site plan detail of Portsmouth Dockyard New Gun Mounting Store (1900).

AE 1900-1901, Part 1 Item II Drawing no. 1 (10.5.00), SCE. To accompany letter to Director of Works (14/12/00). Reproduced by permission of Historic England.

Fig. 556. MD95/04038. End (southwest) elevation of Portsmouth Dockyard New Gun Mounting Store (1900) AE 1900-1901 Part 1 Item II Drawing no. 1 (10.5.00) SCE. To accompany letter to Director of Works (14/12/00). Reproduced by permission of Historic England.

Fig. 557. MD95/04038. Floor plan detail of Portsmouth Dockyard New Gun Mounting Store (1900), showing concrete floor and wood block paving. AE 1900-1901 Part 1 Item II Drawing no. 1 (10.5.00) SCE. To accompany letter to Director of Works (14/12/00). HE. The plan notes: 'Floor of Building to be 3" above general Ground Level.' Reproduced by permission of Historic England.

Fig. 558. Metal clad Portsmouth First Outfits Unstows & De-stores (c.2000, 3/93) building. A. Coats 2013. Reproduced with the permission of the MoD.

On the north side of Circular Road are four buildings lying parallel in a north-south plane. The large **Store No. 80/First Outfits Unstows & De-stores** (1917, c.2000, 3/93, MoD, SU 641583 010985), now clad with ribbed metal and plastic, lacking windows, was built on part of the Gun Mounting Store of 1915 (see HE NMR MD95/04038) and on part of the Paravane Workshop of the same date. **Store No. 79** (c.2000, 3/94, MoD, SU 64097 00940) is of high quality red brick with eleven bays buttressed with light blue brickwork. **Store No. 64** (1939, 3/95, MoD, SU 64078 00923) is single storey of standard brick, built partly on the site of the Boiler Tube and Torpedo Net Store; folding doors have been inserted at the south elevation. It is now the First Outfits Unstores and De-store. **Store No. 108** (1936, 3/96, MoD, SU 64062 00936) is one storey, consisting of run of the mill brick, with corrugated metal above. It is on the site of the Boiler Tube and Torpedo Net Store of c.1901, and is now the Battery Processing Facility.

To the north of the former railway marshalling yard was **Store No. 121 and Office** (1960), used as a Receipt and Dispatch Store, also built on part of the marshalling yard. There were plans for its demolition in 1994 (Lambert, 1993). In its place is a **General Purpose Store** (c.1995, 3/117, MoD, SU 641558 010954), entirely metal clad, windowless, taller than the adjacent Supply Chain Offices with a single small door giving on to Circular Road. The Factory apart, it is the largest building to the east of Basin No. 3 and is now connected to the Factory (1903, 3/82) by the Miniload (1999, 3/82M), creating the One Roof Complex (BAES, NBC Portsmouth, 27.1.1999).

Fig. 559. East elevation of the Portsmouth South East Gate (Second World War) on Flathouse Road, giving road access to the railway marshalling yard. Its concrete and brick piers carrying iron lamp brackets were inserted into the Great Extension Wall (1863–65) with a late twentieth century steel gate added. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 560. Welcome message borne on the electricity substation (c.1950, 3/156) at Portsmouth Trafalgar Gate (2011). A. Coats 2013. Reproduced with the permission of the MoD.

In the north-east corner of the yard, close to Trafalgar Gate, is an **Electricity Substation** (c.1950, 3/156, MoD, SU 641977 012441). It has a concrete frame with louvred infilling. Perhaps an indication of its age is a decorative lamp bracket at one corner. It carries the notice: 'Welcome to HM NAVAL BASE PORTSMOUTH Proud to Support our Fleet'. **East Gate Police Office** (2009, 3/160, MoD, SU 642165 012504) replaced the original gate office of 1930. It was rebuilt as **Trafalgar Gate Office** when **Trafalgar Gate** opened in 2011. The replacement is single storey, larger, has high quality red brick walls with large windows, and a gently pitched roof. **Store No. 54** or the **Flammable Store** (1959, 3/163, MoD, SU 641840 013135) is on the other side of the main entrance road a single storey brick building replacing the Inflammable Store, of c.1920.

Fig. 561. Timber-slatted south elevation of Portsmouth Store No. 52 (1973, 3/179). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 562. A881503. Chatham Dockyard prints FL0624. Photograph of Chatham Dockyard Timber



Drying Shed (1770s), showing vertical timber slats to allow air to circulate (Nov 1988).  
©Crown copyright.HE.

West of Trafalgar Gate is the **Gas Store** (1973, 3/178, MoD, SU 640390 012466), a single storey structure with ribbed metal walls put up south of the former Coal Stacking Area, as was the much larger **Store No. 52** (1973, 3/179, MoD, SU 639865 012373). This is clad with ribbed metal on the eastern elevation, but its south elevation comprises two staggered layers of vertical timber slats to allow air to circulate, similar to the early timber drying sheds installed in the dockyards on the orders of the First Lord of the Admiralty the Earl of Sandwich in the eighteenth century (**Fig. 562**); it is storing timber and pipes. HE, A881503; Coad, 1989, pp. 128-9). South of Trafalgar Gate in 1924 was the Locomotive Shed, an unpretentious and workaday structure. To the west on empty land, was erected **Store No. 51** or **Timber Store**, now **Scaffold Store** (1955, 3/182, MoD, SU 640877 011935); it is notable for its four open ended bays with conventional pitched roofs.

Fig. 563. North elevation of the former Portsmouth Coppersmith's Shop/Store No. 56 (1890, 3/187), now the Small Boat Centre of Excellence Store. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 564. Former Portsmouth Coppersmith's Shop/Store No. 56 (1890, 3/187), now the Small Boat Centre of Excellence Store. A rolled metal door and concrete surround has been inserted into the north elevation in the late twentieth century. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 565. West elevation of the former Portsmouth Coppersmith's Shop/Store No. 56 (1890, 3/187), now the Small Boat Centre of Excellence Store. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 566. Former Portsmouth Coppersmith's Shop/Store No. 56 (1890, 3/187), now the Small Boat Centre of Excellence Store. Rolled metal doors and concrete surrounds have been inserted into the south elevation in the late twentieth century. A. Coats 2013. Reproduced with the permission of the MoD.

To the south of the Gas Store and Store No. 52 on the south side of Military Road is one of the few buildings in this part of the yard dating from the late nineteenth century, **Store No. 56** or **Coppersmith's Shop** (1890, 3/187, MoD, SU 640452 011541); it is of brick with twenty-one large windows along its length. The north elevation has two bays: that on the east having a masonry arch entrance, that on the west a linear masonry entrance. The west elevation has a huge arched central entrance, the heading being glazed. Above each bay is recessed brickwork with dentillated upper edge. Its present use is the Small Boat Centre of Excellence Store.

Fig. 567. North elevation of Portsmouth Amalgamated Pipe Shop (1974, 3/188). A. Coats 2013. Reproduced with the permission of the MoD.

Immediately to the west is the **Amalgamated Pipe Shop** (1974, 3/188, MoD, SU 639683 011448). It has a battered brick base with blue-green ribbed metal cladding above ground floor windows; the roof is topped with a clerestory. It is a large building which replaced a number of smaller ones put up in the nineteenth century, demolished in 1971: a White Metal Shop, a Store and office, a Blacksmiths and Fitting out shop, a Blacksmith's forge shop, an Acid House, a Dredging Machine Store, a General Store and a cycle rack. (TNA, 1969, WORK 14/3075) A Saw Mill and Brick Bin dating from 1910 were also demolished (Lambert, 1993). It is now used partly as a Rations and Sea Survival Centre. A canopy covers the west elevation loading bay.

Fig. 568. Eastern entrance to the former Portsmouth Contractor's Workshop (1901, 3/216), now Store No. 12 Compound, showing stone setts and metal gate posts. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 569. Retaining masonry wall of the former Portsmouth Contractor's Workshop (1901, 3/216),

now Store No. 12 Compound, possibly erected after 1918 re-using stone from the wall dividing the former Rigging and Repairing Basins. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 570. Detail of the retaining masonry wall of the former Portsmouth Contractor's Workshop (1901, 3/216), possibly re-used stone from the wall dividing the former Rigging and Repairing Basins. A. Coats 2013. Reproduced with the permission of the MoD.

To the west across Guardhouse Road was a Retail Store, formerly a Contractor's Workshop (1901) until c.1947, then a Lagging Store until c.1970 (Lambert, 1993). The building was demolished c.1995, the space now being used for the storage of chemical drums. Effectively now part of the same space is **Store No. 12 Compound** (1901, 3/216, MoD, SU 639040 011473), whose 1901 stone setts remain, as do the metal gate posts, but the gates themselves have been removed. The team suggests that the west and north masonry retaining walls at SU 63879 01114 were built using stone from the wall which divided the present Basin No. 3 at SU 63540 01261 into the Rigging and Repairing Basins before its removal in 1918. The wall is shown on the 1924 map.

Fig. 571. Former Portsmouth Lime and Cement Store, with the road sign 'Guardhouse Road' on its eastern elevation, now Retail Store No. 2 (1878, 3/218). This survives near the former convict workshops shown on Colson's 1881 map. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 506. Section showing railway track near the Promontory, east of Basin No. 3 (1881), convicts' workshops and timber sheds on the site of the later Factory (1903, 3/82). Colson, Portsmouth Extension Works, Plate 4, *Minutes of Proceedings of The Institution of Civil Engineers*, Vol. LXIV. Session 1880–81, Part II, 118-173. Courtesy Institution of Civil Engineers Virtual Library.

Immediately to the south is **Retail Store No. 2** (1878, 3/218, MoD, SU 639127 011085), a long narrow single storey building, originally the Lime and Cement Store, which has concrete cills. The road sign 'Guardhouse Road' fixed to the building may be original. The footprint of the westernmost of the convict workshops shown on Colson's 1881 map is identical to the plan of this building. Also on the 1881 map a railway line led south to the 'Brickfields', which are now beneath the Factory, as was the Guard House itself. Exposed sections of railway track remain at the junction of Guardhouse and Military Roads, north of the Factory.

On the eastern quayside of Basin No. 3 is a 20 ton travelling crane by John Boyd, 1979; probably because of the presence of the sheer legs there was no travelling crane at this point until the removal of the legs. South of the Boyd crane in 2013 was the modern equivalent of a hulk – the three floor **Hillside Accommodation Barge** (then at SU 638093 010638), belonging to Sanderson Maritime - mounted on a pontoon, partly moored in the Pocket of Basin No. 3, but it was not there in 2014. Across the road is the **Boatswain's Workshop** (1923, 3/231, MoD, SU 638449 010620), now Halmatic Workshop and Store, one of the few corrugated iron buildings in the yard.

Fig. 572. Hillside Accommodation Barge alongside the east quay of Portsmouth Basin No. 3 in 2013. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 573. Corrugated iron former Boatswain's Workshop at Portsmouth (1923, 3/231). A. Coats 2013. Reproduced with the permission of the MoD.

Sheer legs had been mounted formerly on hulks, enabling tasks such as mast fitting to be undertaken afloat, but in the early years of the twentieth century floating cranes made their appearance, usually working in Basin No. 3. One such, with a capacity of 150 tons by Cowans Sheldon, the hull by Denny, shipbuilders of Dumbarton, arrived in 1912. Another, with an even greater capacity of 200 tons, electrically operated to boot, was towed into Portsmouth from Kiel in 1923, although it did possess its own steam propulsion facility. It was part of the post-war reparation arrangements; the original plan was for the assembly to be undertaken by German personnel, but in the event Cowans Sheldon did the work. It was, and still is popularly believed that this crane was built in Portsmouth

by German prisoners of war actually during the war. A much smaller floating crane, with a capacity of a mere 25 tons by Cowans Sheldon, arrived in the yard in 1928; it possessed a triple expansion steam engine which could propel it at 8-9 knots, and generated its own electricity. Probably also part of reparations was a 5 ton floating crane from Germany, dated 1921 (Anon, 1929, p. 15). Floating cranes disappeared from the yard during the 1980s, the largest being moored at Fountain Lake Jetty as late as 1988.

Fig. 574. Three Portsmouth dock/lock caissons moored on the west side of Basin No. 3 in 2015. A. Coats 2015. Reproduced with the permission of the MoD.

Floating in Basin No. 3 are caissons belonging to the dock and locks, depending on which are open. South of the Promontory along the wall of Basin No. 3 was once another novel feature of the dockyard – a set of sheer legs by Taylor with a lifting capacity of 70 tons, a lift height of 120 feet and an overhang of 40 feet, installed in 1874 and working until the 1930s. Such was the force needed to screw the third (back) leg to attain the desired overhang that the sheers had their own steam engine house. The site of the latter is now occupied by containers. The sheers might have been able to shift great weights, but they could only move in a fixed line, requiring the vessels they were serving to adjust their berthing position as appropriate. To facilitate this, the south-east corner of the Basin was extended southwards in 1939, known as The Pocket. East of the Basin and south of the Promontory is a long, single storey brick building, now **Store No. 44** (1889, 3/236, MoD, SU 638536 011813). It falls into two sections. The northern has four bays on each side of the main entrance, the heading to each being graced by Portland stones separated by gauged bricks. All the bays are now blocked off, but there is certainly a marked contrast with other more modern buildings in this part of the yard. The southern section has eight bays, but lacks the architectural flourish of its fellow. There are windows in most of the bays. The whole was originally the **Hydraulic Gear Store**, including a plating workshop, a pump house and a grindstone shed. In the Second World War it became a Gun Mounting Store and in 1980 a Tool Box Shed and Dining Room. Each worker possessed his own tool box, which was not only heavy, but also needed to be stored in an accessible fashion; this was achieved through an inverted V-shaped metal structure with stepped sides. The building now has two occupiers: the Small Boat Centre of Excellence Amenity Area, and the Director of Ships Weapon Engineering. A cookhouse was added to the north of the building in the 1920s but removed in the 1980s and a separate rich red brick building constructed with a slate roof. (Lambert, 1993)

Fig. 575. West elevation of Portsmouth Hydraulic Gear Store/Store No. 44 (1889, 3/236), from the north. A. Coats. Reproduced with the permission of the MoD.

Fig. 576. West elevation of Portsmouth Hydraulic Gear Store/Store No. 44 (1889, 3/236), from the south. A. Coats. Reproduced with the permission of the MoD.

Fig. 577. Blocked original west door of Portsmouth Hydraulic Gear Store/Store No. 44 (1889, 3/236). A. Coats. Reproduced with the permission of the MoD.

Fig. 578. North elevation of Portsmouth Hydraulic Gear Store/Store No. 44 (1889, 3/236), showing the blocked northeast entrance, the 1980s building 3/237 and evidence of a removed building, with BAES Ship Hall B (2002, 2/122) in the background. A. Coats. Reproduced with the permission of the MoD.

Fig. 579. East elevation of Portsmouth Hydraulic Gear Store/Store No. 44 (1889, 3/236), showing blocked windows. A. Coats. Reproduced with the permission of the MoD.

Facing Basin No. 3, north of the Promontory, is a tiny brick **MG House** (1932, 3/243, MoD, SU 638433 012679), north of which is the brick **East Area Boiler House** (c.1995, 3/247, MoD, SU 638433 012916), built of recent red brick with grey brick quoins and metal doors, and north again the **Shower Block** (1955, 3/248, MoD, SU 638408 013260), notable for its white painted external pipework. To the east is the **Lub Oil Store** (c.1995, 3/251, MoD, SU 638908 012829), a light metal ribbed building with an extensive canopy on its east side to shelter deliveries by lorry. It is now closed.

Fig. 580. MD95/03042. (1905 corrected to 1913). Portsmouth Harbour Plan of Fountain Lake (coloured), HM Dockyard Portsmouth. Section showing a triangular plot taken into yard in 1888 east of Fountain Lake Jetty and the Gun Store Ground. Reproduced by permission of Historic England.

At the far east of Fountain Lake Jetty, on a tiny plot of land taken into the dockyard in 1888, is the Portakabin-like **Diving and Maritime Store** (c.2000, 3/260, MoD, SU 639402 013716), single storey and walled with what appears to be gypboard. It is on the site of an air compressor house erected in 1924. On the quayside is a remaining stretch of railway track. Within the overlooked land on the other side of the dockyard wall is a gasometer which measured gas supplies from the Flathouse gasworks of the Portsea Island Gas Light & Coke Co. The gasometer is no longer in use, the closure almost certainly being the consequence of the advent of North Sea methane in 1967–68.

Fig. 581. North elevation, Frederick's Battery at Portsmouth (1843–48, 1868, 3/250). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 582. West elevation, Frederick's Battery at Portsmouth (1843–48, 1868, 3/250). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 583. West elevation, south corner, Frederick's Battery at Portsmouth (1843–48, 1868, 3/250), showing the east-west 1865 Great Extension wall. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 584. Doorway with insignia, Frederick's Battery at Portsmouth (1843–48, 1868, 3/250). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 585. Insignia, Frederick's Battery at Portsmouth (1843–48, 1868, 3/250). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 586. Doorway with cartouche dated 1868, when Frederick's Battery (1843–48, 1868, 3/250) was moved to this site at Portsmouth. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 587. Cartouche dated 1868, Frederick's Battery at Portsmouth (1843–48, 1868, 3/250). A. Coats 2013. Reproduced with the permission of the MoD.

Floating Dock Jetty (q.v.) was linked to the yard's railway, whose construction necessitated the demolition of the northern half of **Frederick's Battery** (1843–48, 1868, 3/250, Grade II, 1244588, MoD, SU 639340 013041), which itself had been re-sited from its original location as a result of the Great Extension (1867–81). The Battery had run northwest from the Water Gate (later Anchor Gate) Guard House in the Sluice Bastion to the Round Tower. At the southern end of the seven remaining casemates of Frederick's Battery is a square tower complete with weapon slits. The keystone above the entrance is dated 1868. This created some historical confusion. The Round Tower and Frederick's Battery listings state that they were built in 1843–48 under the direction of Captain H. James R.E., then dismantled and re-erected in their present position in 1867. At the southern end of the Battery two round-arched entrances have ashlar tympana bearing the date 1868 and a cipher. The Battery could have been named after Lord Frederick Fitzclarence KCB, son of William IV and Lieutenant General of Portsmouth in 1847–51, the period when the Battery was originally built. However, Pevsner and Lloyd (1990, pp. 425–6) asserted that the Tower 'was built in 1683 on the harbour shore' and in '1688 Frederick's Battery was built alongside'. They commented that the Tower is 'a highly interesting piece, one of the few relics of the once extensive seventeenth century defensive works in Portsmouth; the mock medievalisms on the Tower and Battery are intriguing.' Annotations on HE, MD95/03032 (1850–1955) also followed Pevsner and Lloyd, and the date on the Battery keystone is ambiguous. However, HE, MD95/03034 (1900) showed later buildings on the original site of Round Tower and Frederick's Battery, and their present location. The illustrated plans confirm their nineteenth century origins. Apparently the Tower was used for aircraft spotting in the Second World War and aircraft recognition images were painted inside the parapet. (Malley, pers. comm., 2015)

Fig. 588. MD95/03032. (1850 annotated to 1955). Plan of Portsmouth Dockyard in 1900 showing development and enlargement from 1540 to 1900. PSA Drawing based on 1850 map showing changes in yellow and later buildings in red dotted lines. Section showing Portsmouth Frederick's Battery and Round Tower. Reproduced by permission of Historic England.

Fig. 589. MD95/03034 (1900). Her Majesty's Dockyard at Portsmouth Showing Development and Enlargement from 1540 to 1900. Section showing original site of Portsmouth Frederick's Battery and the Round Tower and later buildings on their former site. Reproduced by permission of Historic England.

Fig. 590. MD95/03034 (1900). Her Majesty's Dockyard at Portsmouth Showing Development and Enlargement from 1540 to 1900. Section showing new site of Portsmouth Frederick's Battery and the Round Tower. Reproduced by permission of Historic England.

Fig. 591. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. Portsmouth re-sited Frederick's Battery and the Round Tower, the Floating Dock and coal, from the southwest. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 592. H M Naval Dockyard, Portsmouth: Boundary wall. Plans and sections of round tower at north-east angle of extension works (1868). Scale: 1 inch to 8 feet. SCE's Department; drawing no. W80. Signed by John Murray. Extract showing the Round Tower adjoining the gallery of Frederick's Battery in section and plan to indicate new works. TNA, WORK 41/320. Reproduced with the permission of The National Archives.

Fig. 593. H M Naval Dockyard, Portsmouth: Boundary wall. Plan no. 11 showing numbers and position of piles used in the foundations of the round tower and retaining wall near gasworks (1869). Drawing no. W76. Scale: 1 inch to 10 feet. Superintendent Civil Engineer's Department. TNA WORK 41/323. Reproduced with the permission of The National Archives.

Fig. 594. Portsmouth Round Tower (1843–48, 1868, 3/262) from the north, with the adjoining rich red brick Offices (1979, 3/261). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 595. Portsmouth Round Tower string course above the battered ground floor storey (1843–8, 1871, 3/262). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 596. Portsmouth Round Tower false machicolation and south facing clock, added in 1964 (1843–8, 1871, 3/262). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 597. Battered walls of the south elevation of Ove Arup Partnership's Offices (1979, 3/261) adjoining and echoing the walls of Portsmouth Round Tower (1843–48, 3/262). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 598. Dynamic blend of old and new. From left to right: the rich red brick of Ove Arup Partnership's Offices (1979, 3/261), Portsmouth Round Tower (1843–48, 3/262) and Frederick's Battery (1843–48, 3/250). A. Coats 2013. Reproduced with the permission of the MoD.

At the land base of Floating Dock Jetty is the **Round Tower** (1843–48, 1868, 3/262, MoD, Grade II, 1244590, SU 639090 013923), part of Frederick's Battery and also re-sited from its original position at New Buildings in 1868 (HE, MD95/03034, 1900; TNA, 23.5.1868, WORK 41/313). A clock was installed when refurbishment was undertaken in 1964. The Round Tower acts as a staircase to a glazed walkway leading into rich red brick **Offices** (1979, 3/261, MoD, SU 638927 013360) in two storeys, built on what was formerly a coal stacking ground. The ground floor entrance is labelled SERCO Ltd, a British government company responsible for fleet support. This 1979 office, store and workshop complex was connected to the Round Tower by Ove Arup Partnership, making use of the Round Tower's internal stairwell. Echoing its associated buildings, it is slightly battered and the profile of its southern stairwell reflects the Round Tower and Battery towers. (HM Dockyard, Portsmouth, *Glass Age*, 1979, pp. 28-9)

Fig. 599. Photograph by W. L. Lawrence: 'Stand easy Flathouse', the Floating Dock. PMRS, PORMG 1945/619. Photograph reproduced with the kind permission of Portsmouth Museums and Records Service.

Fig. 600. Link to Portsmouth Floating Dock Jetty (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 601. Cast iron base of the link to Portsmouth Floating Dock Jetty (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 602. Portsmouth Floating Dock Jetty link rivets (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 603. Portsmouth Floating Dock Jetty link iron hooks to secure cables (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 604. Portsmouth Floating Dock Jetty link lamp post (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 605. Portsmouth Floating Dock Jetty lamp post at the eastern corner (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 606. Portsmouth Floating Dock Jetty crane at the northeastern corner (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 607. Wooden block floor surface to absorb vibration in the workshop (c.1930, 3/303) on the western section of Portsmouth Floating Dock Jetty (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 608. Wooden block floor surface detail of the workshop (c.1930, 3/303) on the western section of Portsmouth Floating Dock Jetty (1911). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 609. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. Portsmouth Floating Dock, lying parallel to Fountain Lake Jetty. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

At the eastern extremity of Fountain Lake Jetty on its north side is the **Floating Dock Jetty** (1911, SU 638408 013260) projecting northwards into Fountain Lake. The Floating Dock itself was delivered in 1912. The link between Fountain Lake and Floating Dock Jetties is carried on riveted iron bridging mounted on four sets of granite piles. On the west side of the bridge are hooks which formerly supported cables and ducts. Several original electric lamp posts survive. All the stores, workshops, waiting room, offices, cycle rack and cookhouse (1911, 3/301-3/306) on the Dock Jetty itself were cleared in 2012, leaving some areas of woodblock surface.

Made by Cammell Laird at Birkenhead, the Floating Dock had a lifting capacity of 32,000 tons, considerably in excess of any existing warship, being equipped with its own workshops, electricity generators, both electric and steam cranes, and 8 sets of pumps able to move 48,750 tons of water in 4 hours. At the outbreak of war in 1914 it was towed to Invergordon, returning to Portsmouth in 1919 (Anon, 1929, pp. 16-17). It was transferred to Malta in 1939.

An account states that another floating dock was acquired by the Admiralty from the Southern Railway in 1939-40, moved to Portsmouth and renamed *AFD 11*. It had been built in 1924 for Southampton Docks and was the biggest in the world, but had become superfluous with the expansion to accommodate the *Queen Mary*. (HM Naval Dockyard, Portsmouth: Floating dock. Plan of berth for Southampton Dock. Scale: 1:500, TNA, WORK 41/263, 1939; Marden, 2012) It remained there until 1959 when it was acquired by the Rotterdam Dock Co. In 1984 it was being towed to Brazil when it was lost off the coast of Spain. (Southampton Floating Dock)

Another floating dock by Blaithwaite Burn & Jessup, made in Bombay in 1944, took its place in 1959. *AFD 26* travelled via Trincomalee, Malta, Gibraltar and Chatham, where it stayed from 1947–51, then Harwich until 1954, Falmouth until 1955, Portland until 1958, and finally Portsmouth in 1959. During its time at Portsmouth it docked 400 submarines and 17 other vessels, but in 1984 there was no further need for such facilities. According to Wessex, it was moved from Portsmouth to Devonport (Wessex, 1999, Report 46311.22, p. 20), but as indicated by World Naval Ships Forum, it was towed to Tilbury for a refit in May 1984, then went to Rosyth Dockyard. In 1995 it was sold to an Icelandic company in Reykjavik Harbour. (Paul Rowse and Paul Santillo, pers. comm., 2015; *AFD 26* (2009). Admiralty Floating Docks. World Naval Ships Forum)

On the basin side of Fountain Lake Jetty are a series of small buildings: the **Fleet Squash Court** (1940, 3/316, MoD, SU 63444 01503), easily identified by its sloping roof, **MG House No. 6** (1913, 3/318, MoD, SU63386 01517), a **Store** (1965, 3/320, MoD, SU63343 01533) and a **Switch House** (1965, MoD, 3/322, SU 63331 01539). The tracks of the 20 ton electric travelling crane by T. Smith & Son, 1912, no longer in place, are evident on the basin side of the jetty. On the sea side of the jetty there is a 10 ton travelling crane by John Boyd Branch-Annan, 1980, and much evidence of railway track. Despite the presence of the crane, two lorry-mounted cranes were servicing naval vessels at the time of the visit in 2013.

Fig. 610. North elevation of Portsmouth Promontory (1910) the remnant of the wall that originally separated the Repairing and Rigging Basins and was demolished in 1918. It is suggested that salvaged stones were re-used in the retaining wall of Store No. 12 Compound (3/216). A. Coats 2015. Reproduced with the permission of the MoD.

Fig. 611. Photograph of the 250 ton Arrol crane in Portsmouth dockyard (1959–60). Despite its long service at Portsmouth, its picture is rare. PMRS, PORMG 1990/559. Photograph reproduced with the kind permission of Portsmouth Museums and Records Service.

Fig. 612. Crane track on Portsmouth Promontory, Basin No. 3 (1881). A. Coats 2013. Reproduced with the permission of the MoD.

Protruding from the eastern side of Basin No. 3 is the **Promontory** (1910, MoD, SU 637399 012595). It will be recalled that this was the remnant of the wall that originally separated the short-lived Repairing and Rigging Basins, demolished in 1918. Its retention provided two berths, but more memorably it formed the site of the gargantuan 250 ton electric hammerhead crane by Sir William Arrol, constructed in 1912. Its height made it visible to much of Portsmouth, resulting in it becoming a city icon. The crane was immobile and with such a secure base its working radius extended to 100 feet, enabling vessels on both sides of the Promontory to be serviced. The crane lacked a conventional moving jib, a travelling bogie working along a horizontal structure secured on the cantilever principle. The control cab was spacious, the operator, who had to stand, facing a battery of dials and levers, which then must have been the height of sophistication. It was dismantled in 1984. The track which skirted the legs on both north and south sides is still to be seen, but nothing remains of the base of the crane. Even the existing roller fairleads bear no maker's name or date. There is a photograph of the crane in 1972 in Patterson's *The Royal Navy at Portsmouth since 1900* (2005, p. 97) and two photographs taken from inside the crane cabin in Patterson and Riley (1984, pp. 24, 25). There is also a reference in Johnston and Buxton (2013, pp. 148-9).

### 3.6.4 Area 4 HMS *Nelson* accommodation and services

Fig. 613. Land east of Portsmouth Dockyard occupied by Portsea fortifications became Anglesey Barracks, then RN Barracks and part of the Great Extension. Portsmouth Plan No. 2. Ordnance Survey 1896, Order-in-Council 26.11.03. Defence Estates Plans. AdL, Vz 14/113 (1896–1903). Courtesy MoD Admiralty Library, Naval Historical Branch, Portsmouth.

Fig. 614. Portsmouth Seamen's Quarters (1899–1903) demolished in the 1960s, Ground Floor Plan. Drawing no. 301/49. BAES. Main/*Nelson* Gate, Portsmouth RN Barracks & Subsidiary Establishments (1949). Plan for Works & Buildings. Reproduced with the permission of the MoD.

Fig. 615. Portsmouth Seamen's Quarters (1899–1903) demolished in the 1960s, First & Second Floor Plans. Drawing no. 301/49. BAES. Main/*Nelson* Gate, Portsmouth RN Barracks & Subsidiary Establishments (1949). Plan for Works & Buildings. Reproduced with the permission of the MoD.

Fig. 616. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. RN Barracks: Seamen's Quarters and Parade Ground. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 617. AFL03/A229825. Portsea: Aerial Views: HMS *Nelson*/RN Barracks with former accommodation blocks and Nile Building (1973). Local Studies Collection Illustrations. © Historic England (Aerofilms Collection).

By the end of the nineteenth century the Admiralty deemed it unhealthy to lodge on hulks in the harbour seamen who were between commissions or whose ships were in dock, and unsuitable for long service personnel after continuous service was introduced in 1853. This move came later for seamen than convicts - Portsmouth convicts had been housed in a purpose-built prison since 1852. The Admiralty had built barracks for marines in dockyard towns from the mid-eighteenth century and police barracks after 1860, and decided to build barracks in the three manning ports of Devonport, Chatham and Portsmouth. (Coad, 2013, pp. 375-6). The 1881 map showed plans to house them at the eastern end of the Extension (Colson, 1881, plate 4), but instead the Admiralty purchased from the War Office Anglesey Barracks and the site of the Duke of York's Bastion in the Portsea fortifications, which had been demolished 1870–76. The former Garrison Hospital within Townsend's Bastion was acquired for the Wardroom. New buildings in dark red brick and Doulling stone dressings were designed by Superintending Engineer Colonel Sir Henry Pilkington R.E., modelled on Devonport's limestone Naval Barracks (1879–1907) and very similar to Chatham Naval Barracks, built 1897–1902, also designed by Pilkington, except that Portland stone was used there for dressings. (BAES, Opus, 2011, pp. 2-3; Chatham Royal Naval Barracks) An aerial photograph taken in 1950s shows the spacious parade ground with only the modern Trafalgar Block encroaching (Royal Navy, 1974, *Renaming Ceremony*). Music, theatre and gymnasium facilities demonstrate that the Admiralty was not erecting mere dormitories and canteens with the funds raised by the Naval Works Acts, but grand and spacious buildings to recreate and develop the personnel.

The Barracks were ready on 30 September 1903, 'and 4,000 men marched up Queen's Street from their old home in the Hulks, Duke of Wellington, Marlborough, Hannibal and Asia.' In December 1903 'Edward VII commanded that the men of RNB should wear Victory cap tallies – to ensure that the name of Victory should not disappear from the Royal Navy.' This had led to the 'odd and confusing situation of two Victory's [*sic*] in one place', resolved in 1974 by renaming the RNB HMS *Nelson*. (Royal Navy, 1974, *Renaming Ceremony*) With the establishment of naval barracks in each home port, the Admiralty decided in 1902 that trophies from paid off ships would be transferred to the captain of the respective naval barracks until the ship was re-commissioned. The April 1911 edition of the *Catalogue of Pictures, Presentation Plate* etc listed them. Portsmouth Dockyard had seventeen named figureheads or stern ornaments, twenty-six ship models, the oldest of *Rupert* (3<sup>rd</sup> rate, Harwich, built 1665), plus further un-named ship models or ship parts, two anchors, two bells, the Nun Buoy (c.1821), a piece of hemp cable recovered by General Pasley in 1843 from the wreck of the *Royal George* (sunk 1782), a



rolling indicator from the *Captain* which foundered in 1870 and a shot carrier for carrying heated shot. Three larger items were a howitzer taken by *Centurion* from a fort at Shan-hai-kwan in 1901, the stone removed from the hull of HMS *Pique* on her arrival from Labrador in 1835, which is now in the Porter's Garden, and the bronze statue of William III (q.v.), also now in the Porter's Garden. The Dockyard Chapel plate is listed separately. (Admiralty, 1911, Admiralty Letter 9 February 1904, pp. 29-33) The nationalistic 1912 *Spithead Review Programme* (Gale & Polden, pp. 11-12) questioned the 'wisdom of the huge shore barracks for the training of British seamen today, and wonder if it would not be better to train them at sea on the ships in which they would have to fight.' It ignored the reality of the unhealthy living conditions aboard rotting old hulks, which the barracks were designed to remedy, as well as providing a greater range of physical and educational facilities.

The Barracks suffered some wartime damage. On 12 August 1940 a bomb falling in Queen Street damaged window frames and shattered windows in the Wardroom Officers quarters, wrecked a stewards' block and wrecked thirty to forty yards of the Barracks boundary wall (TNA, ADM 1/10949). A photograph in *Smitten City* (1944, p. 13) shows the damaged railing, which allowed the public to see the parade ground.

Fig. 618. Redevelopment of RN Barracks plan, Portsmouth (HMS *Victory*) in five stages (1963-74). Minutes of Meetings and enclosures. TNA, ADM 1/28540. Reproduced with the permission of The National Archives.

Fig. 619. Portsmouth Royal Naval Barracks, 1966 Model. TNA, ADM 1/28540 (1963-74). Reproduced with the permission of The National Archives.

From 1963 the MoD modernised Barracks facilities and accommodation to sustain naval personnel in the 1970s. The 1966 model depicted the existing site, continuing the Navy Board practice of using 3-D models to plan changes. Nelson Block (demolished at the end of the twentieth century) was occupied in September 1966. While it was reported to be 'spacious and well furnished', users complained that it was 'consistently hot and humid due to inadequate ventilation.' A new Rum Bar (a few years before its issue ceased in 1970) of 320 square feet in the Victualling Store was an important feature of daily life, to be 'sited on the main traffic flow of male Junior Rates on the route to the Dining Hall.' The new Rum Store next to the Rum Bar was 480 square feet to store 60 half hogshead casks of 27 gallons, constructed to maximum security, with no windows. A new Cold Room with insulated access doors stored meat, and a Deep Freeze, Butcher's Shop, Bulk Provision Store, Vegetable Store, Catering and Cook's Offices, cleaning stores, staff restrooms, ranked toilets and a vehicle bay were constructed. (TNA, ADM 1/28540)

In 1967 the MoD planned a large Court Martial Room, deemed necessary because courts martial were held two or three times a week as 'Portsmouth Command is becoming more and more the Prime Naval Command.' Assessing numbers of ratings to be accommodated in twelve and four storey blocks was more problematic, 'owing to the many factors involved, most of which were closely bound up with the size and shape of the future Navy.' A figure of 2,500 ratings was agreed, based on the 'phasing out of aircraft carriers' and 'the number of men who will be returning from abroad in the next few years'. They agreed on accommodation for an extra 90 senior rates in a high rise building, as Trafalgar Block was being shared by POs and CPOs in overcrowded conditions; a new PO's block was urgently needed. A block for senior and junior WRNS ratings was to be constructed 1966-68, with separate recreational and dining facilities. Until it was ready, from 1966 WRNS were housed temporarily at the rear of the Wardroom so that the Duchess of Kent Barracks (the present City Museum in Museum Road) could be vacated. Regarding officers, 'changes in Government policy relating to the Navy would undoubtedly have their repercussions on the officers forward bearing through the Barracks; it was agreed to plan for 200 male and 40 female (WRNS) officers. It was recorded in January 1967 that the new blocks would have 'a Trafalgar/Victory flavour' by being named after admirals who served on HMS *Victory* and ships which took part in the Battle of Trafalgar. The new Petty Officers' block would occupy the 'old Field Gun Training Track, at present, a clear site.' The old Nelson Block

(vacated in April 1965), old O.D.C., Chapel, Anson East End and Rum Stores, Howe East End and Frobisher buildings, were planned to be demolished in 1967 to make way for the new buildings. These were the original Seamen's Quarters, which MoD decided would not be worth converting as it would 'produce sub-standard results.' A new Cinema Room would not be exclusively for recreational films, but would also be used for instructional purposes. The NAAFI was also due for demolition, but could not move to the Jervis Blocks area until they were redeveloped in 1970. (TNA, ADM 1/28540)

Fig. 27. South elevation of Portsmouth HMS *Nelson*/Main Gate (1734, 1899–1903) on Queen Street, showing on the right the uninterrupted view of the Parade Ground which was reinstated in 1956. A. Coats 2013. Reproduced with the permission of the MoD.

The main entrance on Queen Street is **HMS *Victory*/*Nelson*: Main Gate** (1734; 1899–1903, Grade II, 1387174, MoD, SU 63731 00440). Pilkington reused Ionic columns and the segmental pediment from the former Portsea Quay Gate in 1902 to create a Romanesque formal entrance to the first naval barracks in Portsmouth. Four piers support a central archway for vehicles, and outer pedestrian archways. The piers are formed of bands of red brick and Doulting stone from Somerset, used in the contemporary Barracks buildings, with pyramidal capstones. The central arch tympanum carries the royal coat of arms and the keystone a naval crown and fouled anchor, all carved and painted. The arches contain decorative iron gates.

The gate was originally attached to low brick boundary walls topped by cast iron railings but is now free standing. On 4 November 1906 the 'On the Knee Mutiny' led to metal sheeting being erected along the Edinburgh Road railings, to stop the public viewing the parade ground, a patent example of how behaviour transforms the built environment. Lt Collard, a gunnery officer, mustered the evening duty watch in heavy rain. When dismissed, some of the men, particularly the stokers, complained about being mustered in the rain when they could have stood in the Gymnasium, and Collard recalled the men and ordered them to the Gymnasium. He dismissed all but the stokers and gave the order 'On the Knee', usually only used in gunnery drill, so that the rear ranks could see him. After verbal complaints the order was eventually obeyed and they were dismissed. However, further discontent developed in the Canteen that evening among the approximately 300 stokers when they were teased by seamen, feeling that they had been humiliated. Their frustration erupted into destruction of windows and furniture, with some rushing to the Main Gate, which was closed before they could get out. Three stokers were arrested but the rest occupied the parade ground and demanded their release. Eventually they dispersed, believing their demands had been met, and the Commodore of the Barracks, W. G. Stopford believed the matter was resolved, but the next evening trouble again broke out in the Canteen and Commander Drury-Lowe gave the order to sound the assembly, calling out all the men, including the stokers from the Canteen. He failed to obtain order and Commodore Stopford closed the Main Gate, which meant returning servicemen could not enter and gathered outside, communicating with the men inside and attracting the attention of civilians, who joined in the disturbance. The police could not cope and the Royal Marine Artillery from Eastney Barracks and armed ships' parties were called out, gradually forcing the crowd to disperse along Queen Street. In the Commons the Admiralty Secretary deemed the event an 'unpremeditated outbreak', continuing:

The second disturbance (on Monday, 5th November) was of a more serious nature, inasmuch as a contemporaneous riot on the part of civilians and other persons took place immediately outside the barracks. This disturbance would not have occurred had those in authority taken precautionary measures to prevent a recurrence of the disorder of the previous day. No such measures were taken. (House of Commons Debates, 17 December 1906).

The Secretary also reported that the Admiralty had directed that 'the drill order "On the knee" is not to be used for other than drill purposes.' The sentence of hard labour imposed on Stoker Moody was reduced from five to three years and the sentence of imprisonment of Stoker James Day reduced by six months. Collard was court martialled on 26 November 1906, 'convicted of an act to the prejudice of good order and naval discipline'. The event was reported widely in national, local and colonial newspapers and commemorated by several postcards dating from 1906/7. The metal sheeting remained until 1956 when 'Commodore J. Y. Thompson obtained the Commander-in-Chief's approval

to remove it, saying, “Nothing occurs on the parade ground of which I am ashamed and there is plenty going on of which I am proud”, and a new security gate and guardhouse were installed to the north of the gate. (Winton, 1989, pp. 120-4; House of Commons Debates, 12 November 1906; House of Commons Debates, 17 December 1906; *New Zealand Herald*, 19 December 1906, p. 7)

Fig. 620. Cartoon alluding to the On the Knee Mutiny of 1904. Courtesy George Malcolmson Collection.

Fig. 621. Pre-1956 view of Portsmouth HMS *Nelson* Main Gate showing the metal sheeting which was removed at the end of that year. BAES, Gifford (Feb 2004). Main/*Nelson* Gate. Structural Appraisal, Fig. 1, p. 1. Reproduced with the permission of the MoD.

Fig. 622. Portsmouth Main/*Nelson* Gate (1899–1903) South elevation. BAES, Opus (2011). Historical Building Quadrennial Inspection. Reproduced with the permission of the MoD.

Fig. 623. Flagpole in the remaining section of Portsmouth HMS *Nelson* Barracks Parade Ground in 2013, with the figurehead from H.M. Yacht *Victoria & Albert* 1899–1954 at its base. A. Coats 2013. Reproduced with the permission of the MoD.

The MoD decided to rebuild and realign the main entrance in 1966, which allowed only single line traffic (which held up traffic and allowed limited headroom), and rebuilt the guardhouse to ‘blend in with the architecture of the modernised barracks’ (TNA, ADM 1/28540). The lion on Dreadnought guardhouse survives from its predecessor. In 1997 *Heritage* announced that the front gates had been restored. In 2004 Gifford noted that stonework had weathered, especially at the west end and where rainwater dripped, exacerbated by the use of Portland cement repairs; there was an historic crack and vegetation around mouldings and paint was peeling. However, the paintwork was observed in 2014 to be a fairly good state of repair. (BAES, Denny Highton. Jan 1978, para 1; BAES, Cathedral Works, Summer 1997, *Heritage*. p. 2; BAES, FSLM, Apr 2004, p. 4; BAES, Gifford, Feb 2004, pp. 1-4, 6; BAES, Opus, 2011, p. 2).

Fig. 624. Portsmouth Jervis Gate (c.1980) at the northeast corner of HM *Nelson* Barracks, showing a section of the Great Extension wall (1863–65) and Unicorn Gate (1779), re-sited in 1865. A. Coats 2013. Reproduced with the permission of the MoD.

Giving further access to Area 4 from Unicorn Gate is **Jervis Gate** (SU 638121, 007396), while **Anchor Gate Police Station** (2/46, MoD, SU 63601 00671) marks another entrance from Anchor Gate Road. A new gateway was built into the extension wall at Anchor Gate in 1907 (TNA, 12.9.1907, ADM 195/79).

**Swiftsure** (NE/1, SU 636990 004773) is on the site of the Guard House in the 1924 map. The site of **Orion Medical/Dental Block** (1967-9, NE/2-N/3, SU 636346 004841) in 1924 occupied the site of the southernmost block containing an east-west range of Seamen’s Quarters. It contains support services for personnel. Initially planned to be built in two phases (first Admin/Dental; second Medical), this was reviewed for cost reasons; completion due mid-1969. (TNA, ADM 1/28540)

To the west of Orion, in the promenade, is a figurehead of Nelson in the uniform of a Rear Admiral. The plaque states: ‘MADE IN 1938 FOR TRAINING SHIP HMS *CONWAY* (EX-HMS *NILE*) PRESENTED TO HMS *NELSON* BY THE TRUSTEES OF HMS *CONWAY* IN 1974’. It is executed in carved wood on a concrete plinth. Nearby is the silver ‘NELSON BELL 1928 FORTITER DEFENDIT TRIUMPHANS PRESENTED TO H.M.S. NELSON BY THE INHABITANTS OF TYNESIDE REID & SONS NEWCASTLE-ON-TYNE’, claimed to be the largest silver bell ever cast, weighing over 1½ cwts. It celebrates HMS *Nelson*, the first of two *Nelson* class battleships, built by Armstrong within the constraints of the 1922 Washington Naval Treaty and launched in 1925. They face the figurehead of a lion couchant holding the royal coat of arms, bordered by ‘Honi Soit Qui Mal y Pense’ mounted on the cornice of Dreadnought.

Fig. 625. East elevation from the north of the surviving northern portion of Rodney at Portsmouth (1847–48, NE/14 now Leviathan), bombed during the Second World War, part of the former army

Anglesey Barracks, incorporated into Naval Barracks (later HMS *Nelson* Barracks) in 1899. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 626. NMRNP, Dockyard Model [1938]. Engineer Admiral T. Gurnell, CB. West (rear) elevation of Rodney (1847–48), inherited from Anglesey Barracks. The section to the right of the pediment was bombed in 1942. Reproduced by kind permission of the Trustees of the National Museum of the Royal Navy.

Fig. 46. Stone pediment on the east elevation of Rodney at Portsmouth (1847–8, NE/14, now Leviathan), the Warrant Officers' Mess in the former army Anglesey Barracks, incorporated in 1899 into the Naval Barracks (later HMS *Nelson* Barracks). It features the scrolled abutments seen at Rochefort Dockyard Ropery (1666–69), on the Gymnasium south elevation roof gable (1899), the gable on the north elevation of Barham (1899, NE/82) and the date plaque (1903) on the north elevation of the Factory (1903, 3/82). The southern section was bombed during the Second World War. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 627. Eastern (inner) elevation of the Anglesey Barracks wall at Portsmouth (1847) which then formed the boundary of the Naval Barracks, later HMS *Nelson* Barracks, near Rodney (1847–48, NE/14, now Leviathan). A. Coats 2013. Reproduced with the permission of the MoD.

**Leviathan** (NE/13, SU 636902 005441) includes HMS *Nelson* Stores Complex (South) and **Rodney** (1847–48, NE/14, Grade II, 1387148, MoD, SU 635840 005679), described in the 1924 map as CPO's Mess and Quarters. At The National Archive is a plan made by Superintendent Civil Engineer's Department showing 'Warrant officers' mess: plans and details of steelwork, reinforced floors and roofs, mess room fireplace and doors. (TNA, 1921, WORK 41/556) It was part of the former army Anglesey Barracks, incorporated into HMS *Nelson* barracks in 1899. It is now houses a chaplaincy and other support services. Initially the symmetrical thirty-five bay building including the central pedimented bay was almost twice as long as now; the sixteen southern bays were bombed in 1942 and later demolished, so it is now has an unbalanced appearance. It was aligned north-south and overlooked the parade ground, built of red brick with Portland stone plinths, first floor string course, cornice and cills. The original pitched roof has been replaced by a flat concrete and asphalt roof. The first and second floors are supported on cast iron beams. The western elevation has a first floor balcony supported by circular cast iron columns. The brickwork has survived well, but some bricks are spalling, thought to have been exacerbated by the use of cement mortar and water saturation from cleaning in 1994. There is some vertical cracking on the west and east sides at the north end. Some original staircases, chimneys, doors with fanlights and sash windows survive. (BAES, PSA, June 1992, p. 1; BAES, FSLM, May 2005, p. 3; BAES, Opus, 2011, pp. 2-16) *Hampshire Treasures* (1986, p. 36) described the carved stone lion in the pediment, but the listing entry dated 1972 states that it had been moved to the Wardroom garden across Queen Street, Unicorn reporting that it had been removed because it was insecure. The oculus in the pediment now encloses a clockface. (BAES, Unicorn (Oct 2001). Quadrennial Inspection, Rodney Block, p. 3)

Fig. 628. East elevation of the gateway from Portsmouth Naval Barracks/HMS *Nelson* Barracks (c.1899) into York Place. A. Coats 2013. Reproduced with the permission of the MoD.

Two garages now flank the blocked gateway (SU 635533 004604) into York Place. Along the southern wall of HMS *Nelson* are workshops and stores (SU 636071 004523) where in 1924 was located the Gun Drill Battery.

**Sirius** (NE/23, SU 636902 005441), **Phoebe** (NE/24, SU 636352 005548), **Naiad** (NE/25, SU 636415 006323), **Euryalus** (NE/26, SU 636983 006648), **Neptune** (NE/50, SU 636971 006085) are all relatively new blocks, which in 1924 were on the site of two blocks, separated by a lawn, each containing three east-west ranges of Seamen's Quarters. **Britannia** (1960s, NE/49, SU 637546 006560), **Hardy** (NE/89, SU 637646 005123) and **Vanguard** (SU 637596 005773) in 1924 were within the former Parade Ground.

**Dreadnought** (NE/90, SU 637540 004741) was at the southern end the Parade Ground in 1924. The

new Dreadnought is the guardhouse. **RMSM Stores** (NE/28, SU 636965 006385) is on the south side of an inner wall which bounds a short stretch of road used as a car park. A **Water Meter House** on the south side of the 1865 wall in 1924 (NE/47-NE/48, SU 636965 006385) is now a Gas Meter House/Substation RNB3. The present **Sea Cadets'** building in dark red brick (1847–8, NE/34, Grade II, 1387144, MoD, SU 635983 006223) was the **Old Management School**, formerly the Army Barracks canteen, one of the oldest canteens in an English barracks.

Fig. 629. Portsmouth HMS *Nelson* Barracks, east elevation of Jervis (1899, NE/64). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 630. Portsmouth HMS *Nelson* Barracks, west elevation of Jervis (1899, NE/64). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 631. Portsmouth HMS *Nelson* Barracks, west elevation of Jervis (1899, NE/64), showing the chimney gable. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 632. Portsmouth HMS *Nelson* Barracks, tympanum carved in Doulting limestone from Somerset over the north elevation entrance of Jervis (1899, NE/64). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 633. Portsmouth HMS *Nelson* Barracks, cast iron rainwater hopper on Jervis (1899, NE/64) dated 1899. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 634. Portsmouth HMS *Nelson* Barracks, cast iron Doulton drain cover by the south entrance of Jervis (1899, NE/64). A. Coats 2013. Reproduced with the permission of the MoD.

**Jervis** (1899, NE/64, SU 638308 006716), shown in the 1924 map as Seamen's Quarters, is now the RN Pre-Deployment Training Centre. Originally there were two more linked accommodation blocks to the east, shown in 1924, which were due for demolition in the early 1970s (TNA, ADM 1/28540). They can be seen in an aerial photograph of the 1950s, which highlights the unity of the rooflines shared by all the accommodation blocks and Barham, Eastney and the Gymnasium. (Royal Navy 1974, *Renaming Ceremony*) Jervis now has three storeys aligned north-south, with four-storey entrance bays at the north and south elevations whose first floor windows are embellished by arches featuring fouled anchors in Doulting limestone from Somerset. It is built of a mid-red brick with stone string courses and keystones over the windows, and tall chimneys. The rainwater hoppers are dated 1899. Original plans show a Seamen's Mess and Dormitory and Hammock Racks on the ground floor, with a separate dormitory for Leading Stokers. A further Seamen's Mess and Dormitory, Chaplain's Office, Signal School classrooms and Hammock Racks were on the second floor. Warrant Officers' quarters were on the third floor, next to Wireless and Telegraph rooms. Timber floors are suspended on a steel frame spanning between the external walls and internal stanchions. The ground floor is of poured *in situ* concrete covered with ceramic tiles. Stoves set on concrete hearths provided heating, waste gases ventilated by the chimney flues. It retains timber sash windows and panelled or part glazed timber doors. A Doulton's drain cover set in a ceramic surround is located outside the southern entrance. (BAES, Unicorn, 23.1.1996; BAES, FSLM, May 2005, p. 4) In 1967 MoD discussed refurbishment of Jervis to house the Barrackmaster's and Barrack Engineer's workshops, Vocational Training workshops, Supply Department Stores and Offices, Passive Defence and Navy Days Offices, Accommodation Officer, General Stores, Motor Transport Offices, Ministry of Public Buildings and Works workshops and Training facilities. (TNA, Jan 1967, ADM 1/28540) It is strange that this block, which must have been one of the first accommodation blocks to be built specifically for seamen at Portsmouth, was not listed. The team considers that Jervis should be listed, to complement the group value of other listed buildings in this area.

Fig. 635. Portsmouth Naval Barracks Canteen/Eastney NE79, West Elevation. Record Drawing no. 5/AA219. 20.1.99/Oct 06/1907. BAES. Unicorn (Jan 2002). Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 636. Portsmouth Naval Barracks Canteen/Eastney NE79. East and South Elevations, Record Drawing no. 4/21S, Oct 06/1907. BAES. Unicorn (Jan 2002). Structural Appraisal. Reproduced with the permission of the MoD.

Fig. 637. Portsmouth HMS *Nelson* Barracks, Eastney (c.1907, NE/79), south elevation. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 638. Portsmouth HMS *Nelson* Barracks, Eastney (c.1907, NE/79), north elevation. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 639. Portsmouth HMS *Nelson* Barracks, Eastney (c.1907, NE/79), west elevation. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 640. Johnson & Phillips electric lamp standard east of Eastney (c.1907, NE/79), beside a Portsmouth bike shed, HMS *Nelson* Barracks. This Charlton company made equipment for laying undersea cables, but also more prosaic electric lighting (Johnson & Phillips Ltd). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 641. Base of the Johnson & Phillips electric lamp standard east of Eastney (c.1907, NE/79), in need of some paint, Portsmouth HMS *Nelson* Barracks. A. Coats 2013. Reproduced with the permission of the MoD.

**Eastney** (c.1907, NE/79, Grade II, 1387140, CA 18, MoD, SU 638308 006716), was formerly the Canteen and Theatre, designed by Superintending Engineer Colonel Sir Henry Pilkington R.E. Unicorn (2002, p. 3), reported that the previous fortifications on the site were demolished in the 1870s and 'it is believed that the present structure was constructed on the rubble of this building.' It consists of a basement, ground floor with auditorium and canteen, a first floor and second floor towers on the north elevation. It is built of red brick with a brick plinth and stone keystones, cills, coping and string courses to the stair towers. The chimneys are original, but the building lost five original lantern lights in the roof refurbishment which removed much natural light and ventilation. Some original lath and plaster ceilings remain, but it has lost doors, internal glass partitions and windows, and suspended ceilings have been installed. In 2001 the west elevation was reported as having been re-pointed with cement mortar in a proud joint, causing spalling; the other three elevations required repointing. The two main entrances to the north and south retain their original doors, frames and panels, but have a mixture of glass. The 1907 map marks the north entrance for seamen and the south entrance for petty officers. The north entrance retains its rope moulding and the north staircase its timber balustrade and handrail. Most of the sash windows were original in 2001, but on the west elevation five double sash windows had been replaced by poor quality casements with unsuitable ironmongery and in the north towers three round windows had been replaced in an unsuitable style. Later extensions were built from the east elevation into the dockyard wall. Modern additions include a fire escape bridge to the Gymnasium. In the narrow space between Eastney and the dockyard wall is a lamp standard bearing the names Johnson & Phillips Ltd London. According to the History of the Atlantic Cable & Undersea Communications, the company was founded in 1875 and manufactured electric light equipment. (BAES, Unicorn, 31.1.1997, p. 3; BAES, Unicorn, Oct 2001, pp. 7-20; BAES, 1907, Portsmouth Naval Barracks Canteen, Ground Plan; BAES, Unicorn, Jan 2002, p. 3; History of the Atlantic Cable & Undersea Communications, 2012)

Fig. 642. Portsmouth HMS *Nelson* Barracks, Gymnasium (1893–1900, NE/81), west elevation. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 643. Portsmouth HMS *Nelson* Barracks, Gymnasium (1893–1900, NE/81), main entrance carved in Doulting limestone from Somerset and a cast iron rainwater hopper dated 1899. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 644. Portsmouth HMS *Nelson* Barracks, Gymnasium (1893–1900, NE/81), stencilled sign 'P.D. First Aid Station' by the main entrance. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 645. Portsmouth HMS *Nelson* Barracks, Gymnasium (1893–1900, NE/81), one of the north entrances. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 646. Portsmouth HMS *Nelson* Barracks, Gymnasium south elevation pavilion (1893–1900, NE/81). A. Coats 2014. Reproduced with the permission of the MoD.

Fig. 647. Portsmouth HMS *Nelson* Barracks, Gymnasium south elevation pavilion tympanum (1893–1900, NE/81). A. Coats 2014. Reproduced with the permission of the MoD.

Fig. 648. Portsmouth HMS *Nelson* Barracks, Gymnasium (1893–1900, NE/81) south elevation, rainwater hopper dated 1899. A. Coats 2014. Reproduced with the permission of the MoD.

Fig. 47. Portsmouth HMS *Nelson* Barracks, Gymnasium (1893–1900, NE/81) south elevation roof gable. Note the scrolled abutments similar to those at Rochefort Dockyard Ropery (1666–69), which also support Rodney's pediment (1847–48, NE/14), the gable on the north elevation of nearby Barham (1899, NE/82) and the date plaque (1903) on the north elevation of the Factory (1903, 3/82). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 649. Portsmouth Gymnasium (1893–1900, NE/81), Roof Section A-A proposed repairs, showing the rear of the south elevation. PSA South East Region HQ, Drawing no. 1L(27)02, Dec 88. BAES. Unicorn (Jan 2002). Structural Appraisal. Reproduced with the permission of the MoD.

**Gymnasium** (1893–1900, NE/81, Grade II, 1387143, CA 18, MoD, SU 63902 00544) was originally built as the Drill Hall for the Duke of York's Wessex Regiment (one window tympanum bears the lamb which is the device of the Regiment or of the Third Volunteer Battalion of the Hampshire Regiment, the Duke of Connaught's Own) and taken over by the naval barracks. The south elevation terracotta tympanum displays three roses in a shield, with laurel leaves below. However, the rainwater hoppers are dated 1899, like Barham and Jervis. By the main entrance on the western elevation there is a stencilled sign: 'P.D. First Aid Station'. Unicorn (2002, p. 3), reported that this building too was on the site of the fortifications demolished in the 1870s. It comprises a quadrangle gymnasium, surrounded by two storeys of other sports facilities and a six storey clock tower in the northwest corner. On 12 August 1940 a bomb exploded on the triangular bandstand lawn near the flagmast (now occupied by Trafalgar), creating a crater fifteen feet deep and thirty to thirty-five feet across, smashing the glass in the roof lanterns and damaging much of the roof covering (TNA, ADM 1/10949). This could also have caused the shrapnel damage in the clock tower referred to in a Conservation Practice tender document, while *Heritage* (1997) reported that the pre-war pitched slate roof had been restored and the clock tower restored. When the MoD was modernising the Barracks in the 1960s, demolition and rebuilding of the Gymnasium was considered but rejected as the building was structurally sound, and funds were lacking (TNA, ADM 1/28540). The interior has since been heavily modernised, and the building lost most of the south elevation when Alfred Road was widened in the 1970s (TNA, ADM 1/28540), a heavy steel frame supporting the gable end. There is a 1988 drawing showing roof repairs It shares group value with the nearby Barham, the Wardroom and the Roman Catholic Cathedral. (BAES, The Conservation Practice (April 1995). Tender Clock Tower, HMS *Nelson*, p. 9; BAES, Cathedral Works, 1997, *Heritage*, p. 2; BAES, Unicorn (Oct 2001). Quadrennial Inspection, Gymnasium, pp. 4-5; BAES, Unicorn (Jan 2002). Quadrennial Inspection, Gymnasium, p. 3; BAES, Opus (Oct 2011). Quadrennial Inspection, Gymnasium, pp. 2-4) A short stretch of dockyard wall curving from this building westwards around the corner to Unicorn Gate is new, probably dating from when the new Unicorn Gate entrance was built in 1977–79.

Fig. 650. Portsmouth HMS *Nelson* Barracks, west elevation of Barham (1899, NE/82). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 651. Portsmouth HMS *Nelson* Barracks, Barham portico with Doulting limestone from Somerset (1899, NE/82). A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 652. Portsmouth HMS *Nelson* Barracks, east wing of Barham (1899, NE/82). A. Coats 2013.

Reproduced with the permission of the MoD.

Fig. 48. Portsmouth HMS *Nelson* Barracks, chimney gable on the north elevation of Barham (1899, NE/82). It features scrolled abutments similar to Rochefort Dockyard Ropery (1666–69), which also support Rodney's pediment (1847–48, NE/14), the nearby Gymnasium south elevation roof gable (1899, NE81) and the date plaque (1903) on the north elevation of The Factory (1903, 3/82).

A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 653. Portsmouth HMS *Nelson* Barracks, ventilator on Barham's east wing roof (1899, NE/82).

A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 654. Portsmouth HMS *Nelson* Barracks, rainwater hopper dated 1899 on Barham (1899, NE/82).

A. Coats 2013. Reproduced with the permission of the MoD.

**Barham** (1899, NE/82, Grade II, 1387139, CA 18, MoD, SU 638271 006304) initially housed the Naval Depôt Offices, designed by Pilkington in the Georgian Revival Style. The rainwater hoppers are dated 1899. In its red brick, slate roof and stone dressings at plinth, string courses, cills, cornices and chimneys, Barham relates closely to the nearby Gymnasium, Wardroom and Roman Catholic Cathedral. While the building is judged sound, some external stonework has weathered and eroded, with some water penetration, and internally many original features such as chimney pieces have been lost. (BAES, Opus, 2011, pp. 3, 7) The smaller Mail Room (building NE/85) appears to be newer (it is not on the 1924 map) with a slate roof, but with concrete sills.

Fig. 655. Portsmouth HMS *Nelson* Barracks, west elevation of Trafalgar (1950s, NE/86) with the clock tower of Gymnasium (1893–1900, NE/81) on the right. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 656. Portsmouth HMS *Nelson* Barracks, west entrance to Trafalgar (1950s, NE/86). A. Coats 2013. Reproduced with the permission of the MoD.

**Trafalgar** (1950s, NE/86, SU 638702 005935) is a large Senior Rates' Mess facing the Parade Ground/car park. Its site in 1924 was part of the Parade Ground, with a Band Stand towards its western end. It has a ground floor and semi-basement of concrete with a projecting concrete portico and four floors of brick above. It has had remedial work for deteriorated concrete. On the north elevation there is a link to the nine storey **Nile** (c.1975, NE/87, SU 638702 005935), whose site in 1924 was occupied by the Wireless Telegraph Experimental Huts. Nile was built of reinforced concrete frames, with precast or reinforced concrete floors supported on a ten metre single span beam. Its long glazed elevation faces the prevailing southwest winds. A mosaic strip decorates each floor and the parapet but some tiles have become detached. Demolition of the then fifteen year old Nile Block was considered in 1998. (BAES, Alan Marshall Consulting Civil and Structural Engineers for PSA, Jan 1984, p. 1; BAES, Evans Grant, March 1992, p. 2; BAES, Unicorn Consultancy Services Ltd, June 1997, p. 3; BAES, Comley & Sons, Odiham, 1998, Proposal to demolish)

Since the 1970s the Parade Ground has become almost completely covered with accommodation blocks, the most recent, Falklands, being completed in 2014.

### 3.7 CONCLUSIONS

Worth repeating is the point that almost all the modifications and building work undertaken after the mid-nineteenth century have been effected within the boundary wall of 1865. Were it not for three land acquisitions in the twentieth century, everything would have been contained within the Great Extension and the Anglesey Barracks limits. The first small land acquisition was Holy Trinity Church and its Vicarage, purchased in 1906 and enclosed by the dockyard wall in 1907. The second extension stemmed from the need for additional space during the Second World War. The area of the 1944 acquisition was modest, approximately 200 yards long by 100 yards in width, comprising the



three parallel streets of Marlborough Row, Gloucester Street and Frederick Street. These roads were almost entirely surrounded by dockyard land known as the Marlborough Salient, making it a simple task to enclose them.

It may seem paradoxical that as the dockyard workforce dwindled after the effective cessation of the Cold War, that there should have been an increased demand for space. But as much as motor transport is much more flexible than rail, garages, parking facilities and indeed roads are required. Thus in 1977 the third acquisition was land to the east of Unicorn Road, edging Flathouse Road to provide vehicle space and a much wider road entrance to Unicorn Gate. Copenhagen, Abercrombie, Nile, Trafalgar, Duncan, Conway and Chalton Streets – which had largely been cleared of housing, were taken into the yard, forming a wedge-shaped plot between Flathouse Road and Market Way. The extension is enclosed on the Market Way border by a rich red brick wall, broken at frequent intervals by metal railing. It is significant that this area was included in a 1936 map (HE, MD95/03039), showing that such rationalisation was planned during the rearmament period.

Fig. 191. MD95/03039 (1936). Plan Showing Proposed Revision of Boundary of HM Dockyard Portsmouth. Reproduced by permission of Historic England.

Fig. 559. East elevation of the Portsmouth South East Gate (Second World War) on Flathouse Road, giving road access to the railway marshalling yard. Its concrete and brick piers carrying iron lamp brackets were inserted into the Great Extension Wall (1863–65) with a late twentieth century steel gate added. A. Coats 2013. Reproduced with the permission of the MoD.

Fig. 510. H M Naval Dockyard, Portsmouth: Miscellaneous. Plan of dockyard showing programme of work on railways, 1951–1954. Annotated with reference notes. Scale: 1:1,666. Superintendent Civil Engineer's Department. Drawing no. 486/51, drawn by F. T. Haisman. Section showing new works in Area 3 and the South East Gate and East Gate (now Trafalgar Gate), in use. TNA WORK 41/315. Reproduced with the permission of The National Archives.

Not an extension of the dockyard, rather a modification of the Great Extension wall, was the opening of the **South East Gate** (SU 64241 01105), probably during the Second World War. The hinges of the former gates are visible in the gateposts, one of which is topped by the remains of a light fitting. The current gate is of metal and slides sideways on wheels and looks in good condition. The razor wire on top of the wall is noticeable at this point. To the north in Flathouse Road is **East Gate** (1931, MoD, SU 64220 01289). Despite Unicorn Gate improvements in the 1970s, these were later considered inadequate and in 2011 this became the current main gate, termed **Trafalgar**, with a dedicated slip road from the M275 – Princess Royal Way. Trackways for sliding gates cross the roadway. There are no immediate plans to add an imposing ambience comparable to that possessed by Victory, Nelson and Unicorn Gates.

Fig. 580. MD95/03042. (1905 corrected to 1913). Portsmouth Harbour Plan of Fountain Lake (coloured), HM Dockyard Portsmouth. Section showing a triangular plot taken into yard in 1888 east of Fountain Lake Jetty and the Gun Store Ground. Reproduced by permission of Historic England.

Fig. 657. Post-1924 brickwork closing off the former entrance to the Portsmouth Gun Store Ground (c.1914) made in the Great Extension wall (1863–65) near Trafalgar Gate. A. Coats 2013. Reproduced with the permission of the MoD.

As though to emphasise the truism that there are exceptions to every rule, there was one instance of land being acquired by the dockyard in the nineteenth century and then actually being relinquished in the twentieth. The plot was admittedly of meagre size, measuring eighty yards in length and sixty-five in width. This was the Gun Store Ground in the extreme north-east of the yard, to the east of Flathouse gasworks and south of Flathouse quay, owned by the Council. The space is not shown on the 1881 map, but it existed in 1914 when a 150 ton electric overhead traveller mounted on a gantry, made by Vaughan & Son, was on site (Anon, 1929, p. 12), suggesting that the ground came into operation during rearmament when the size and weight of guns became considerable. It is marked

on a 1924 map, but judging from the brickwork closing off the gap in the Great Extension wall, it must have fallen into the hands of the Council shortly afterwards, eventually becoming part of Albert Johnson Quay.

Some historic Portsmouth buildings have been designated at risk (Appendix 4), the greatest threat occurring when buildings are vacant because they are not being heated, ventilated or monitored on a daily basis. PDP Green Consulting Limited have undertaken extensive condition surveys for BAE Systems and have produced a full scope of works for construction works on Nos 2-8 The Parade, the Former Naval Academy and Storehouse No. 25 (Bolger, pers. comm. 2013). The Pay Office (1/11) has had long term rain ingress through the junction between eighteenth century brickwork and the 1940s modifications, but is not on the At Risk Register.

Building materials changed during the twentieth century. The use of corrugated iron continued from the nineteenth century. The Fire Station, with unique corrugated iron fixings, manifests 'one of the first uses of galvanised corrugated iron for any major building in the UK.' (Kerry-Bedell, 2012, p. 41) Ferrobestos and asbestos were insulating and fireproofing materials which have subsequently seriously affected dockyard workers' health (Ferrobestos Workshop, 1935, 2/155; Taaffe, 2013). During the twentieth century steel reinforced concrete was introduced. Some buildings, such as COB1 and COB2 (2/11 and 2/10), have had a short life compared with eighteenth century stone or brick buildings. The mid-twentieth century Trafalgar Accommodation Block (NE86) needed extensive remedial repair and the installation of cathodic protection of the steel structure, both internally and externally, as part of a full repair/refurbishment programme. The most recent buildings such as Falklands accommodation block show a return to brick.

Some changes in Admiralty policy affected buildings, such as the Rum Store built in 1966, a few years before Admiral Hill-Norton, Second Sea Lord and Chief of Naval Personnel abolished the rum issue in 1970. Despite the Nott Review in 1982, considerable investment continued through the 1980s due to the shifting government policies following the Falklands Conflict in 1982.

Many historic buildings have been updated for today's use: both Portsmouth foundries to offices and storehouses to museums, having a continuing but evolving identity as working spaces.

Building styles changed during the twentieth century. There was evidence of Edwardian and Modernist styles in Buildings 1/91-1/95, demolished in 2010 to make space for the new Mary Rose Museum (2013). The Factory (1905, 3/82), West Pumping Station (No. 3) (1909, 1/161) and North Pumping Station (No. 4) (1913, 2/239) continued the neoclassical style, whereas Boathouse No. 4 (1/6) marked a distinct break in a Modernist style. The rare (to the dockyard) Brutalist style is represented by Workshop Complex No. 1 (1979, 2/110) and Workshop Complex No. 2 (1976, 2/140).

Many technological changes are recorded through buildings. The zincing process was introduced in 1905 and continued until the mid-1950s (2/197). There is reference to torpedoes in 1899 (3/69), torpedo nets c.1901 (3/95), paravane maintenance from 1917 (3/93), degaussing in 1940 (2/249 Crew Mess; 2/253 Station 1941; 2/251 Station 1955) and Radar in 1991 (2/259). Evidence of telephone use comes from Building Nos 1/47C and 1/76-1/76A, a Telephone Exchange (1903), a telephone cable compound in 3/79 (1966), and a new Telephone Exchange in 2/5 (1993). Riley's 'All will be revealed? Equipment in some buildings in Portsmouth Dockyard' also shows some industrial machinery associated with twentieth century buildings (2014, pp. 3-11).

Buildings record activities. New twentieth century uses appeared, for example canteens, health centres, amenity centres, bath houses, a laundry, an Industrial Trade Union Office and latrines, which presumably did not exist in the nineteenth century. An indication is given under Battery Workshop No. 2, which was built on the site of the last Earth Closet in 1915 (2/235). By 1956 these facilities were called toilets (1/30A). The Dining Hall (1860, 1/37) and Dining Room (1890, 1/159) were nineteenth century forerunners of these 'social' buildings. Other social provisions include a yard barber in Building 2/179. In 2013 there was a barbershop in Building 2/19 (in 2014 it was selling

maritime paintings). The Canvas Painting Shop (1/87) and Upholstery Store (1/109) record activities which might otherwise be forgotten in the twenty-first century. The Radioactive Store was built in 1945 (3/88-3/88A). Lambert records barriers for men to queue for their wages from Building 2/151 in the 1920s and 1930s, an activity which would not have been recorded on maps. (Lambert, 1993)

Physical evidence of women in buildings post-dates our knowledge that they worked in the yard before and during the First World War (War, Women and Versailles; Riley & Clark, 2014; Brown, 2016; Clark, 2016). Segregation of men and women is demonstrated by Women's Dining Rooms, built in 1925 near the Workman's Dining Rooms of 1902 (3/68). The MCD Women's Rest Room was in use from the 1950s (2/243/A).

The distinction made between Fleet Latrines (1975, 2/285) and other Latrines implies segregation between naval and dockyard personnel. It could be connected to the note under RN Detention Quarters (1846–1977, Buildings 2/38-2/44D) that sailors did not move ashore within the dockyard until the fortifications were removed and HMS *Victory* Barracks were ready in 1903. (Royal Navy, 1974, *Renaming Ceremony*)

Power sources are indicated, such as hydraulic power in the 1880 Armour Plate Shop (2/172). Electricity is indicated in the New Electric Light and Power Station (1907, 2/19) and by the numerous substations throughout the dockyard, the earliest being South Railway Jetty Substation (1925, 1/44), Substation V (1927, 2/177) and East Grid Substation (1939, 3/156). There is plentiful evidence of coal as a former fuel, stored 1850 to 1900 on the later site of Building 1/116; a Coal Stacking Ground on the later site of Building 3/179 (1973); north of Building 1/159 during the mid-war years was a Coal Testing House; the Coaling Point on North Wall Jetty; and a three acre Coaling Point west of the Fitting Out Basin. Oil, as a lubricant and fuel, is evident in building names. Oil Storehouse No. 3 on the Camber (1/39) dates from 1839, with Oil Drum Shed (1/39A) nearby. Ready Use Oil Drums were stored in Building 1/46 in the 1990s. Building 1/91 included an Oil and Paint Store; Building 2/13 houses Oil Fuel Tanks; Building 2/162 is an Oil Store, built in 1932. Oil Tanks (2/288) were built in 1975. Building 3/181 was built over underground oil tanks in 1940. Gas is indicated by the 1975 Gas Meter House (2/1).

The late twentieth century illustrates the prevalence of car parking facilities over bike sheds, many of which, however, remain.

The fortunes of Portsmouth Dockyard in the twentieth century have ebbed and flowed as might be predicted of a facility geared to hostilities. From peaks in the two world wars followed by an uneasy Cold War peace, there was a near terminal decline in the last two decades of the century, a consequence of a shift to a smaller number of vessels and the introduction of missiles and nuclear submarines. Cost-cutting by a series of governments has emphasised the trend. But throughout the century technological innovation has ensured constant change, irrespective of whether the dockyard was on a war footing. The survey has identified many of these changes:

1. The constant re-use of buildings to mesh with ever changing requirements.
2. Substantial redundancy of buildings and structures/ docks of earlier periods.
3. The construction of new buildings and docks better suited to the needs of particular eras.
4. The use of ribbed plastic and light metal cladding on buildings in the last decades of the century, but also the consistent and unifying use of good quality red brick buildings, in particular by Arup in the 1970s, which continues the traditional Portsmouth colour palette.
5. Damage occasioned by the Second World War caused few changes.
6. Many buildings and docks are now underused, and many buildings are in multiple use.

7. Once the principal means of transport, railways have been superseded by roads. The dissolution of the former made space available, particularly in the eastern areas of the yard; the development of the latter has called for new roads and the modification of gates.
8. Substantial areas have become devoted to car parking, but bicycle racks are still plentiful.
9. The use of road-borne containers has reduced the need for conventional storage space.
10. The listing of some buildings and docks has ensured their retention.
11. The management of listed buildings in the heritage area by Portsmouth Naval Base Property Trust has contributed an income, and at the same time has created a tourist attraction.
12. Large areas of the yard at the end of the century were operated by BAE Systems, part of the political belief in the value of privatisation.
13. The question arises: what is the future of many, or most, dockyard buildings and docks? Should BAE Systems decide to discontinue operations, always a possibility under market conditions, and not be replaced by another firm, what will be the scenario?

### **Appendix: Summary of significant twentieth century changes at Portsmouth Dockyard**

Twentieth century built environment changes derived from successive technologies ousting or moving previous buildings, fire and Second World War air raids. New buildings reflect social changes, such as the introduction of dining halls, bath houses and shower blocks, and a health and safety building in 1993. This summary demonstrates that a significant number of buildings were constructed in the interwar years; also that some 1960s/1970s buildings had a short life and were demolished due to concrete defects.

#### **Structures adapted to heritage or related uses**

- Naval Recruiting Office (1/1, 1862) refurbished as Tourist Information Centre 2002; Bookshop 2012, other use 2015
- Cell Block (1/2, 1883) refurbished for start-up creative businesses 2014–15
- Boathouse No. 4 (1/6, 1938–40) Boatbuilding 1984; Boatbuilding Academy 2015
- Guard House (1/10A, 1807) and Police Quarters (1/10, 1909) Mary Rose Offices, Stores 1980s
- Pay Office (1/11, 1798) Mary Rose artefact storage facilities 1980s
- Boathouse No. 6 (1/23, 1845) refurbished as Action Stations, café and cinema 2001
- Boathouse No. 5 (1/28, 1882) Mary Rose Museum 1984; Boatbuilding 2014
- Boathouse No. 7 (1/29, 1875) refurbished as a café, shop and Dockyard Apprentice Exhibition 1994
- Storehouse No. 9 (1/35, 1782) Antique Shop, café and PNBPT Archive, 1990s
- Storehouse No. 11 (1/58, 1763) 1981; ) modified for the McCarthy Museum on the ground floor 1971, the Royal Naval Museum 1986, refurbished 1987–89; the National Museum of the Royal Navy 2009
- Storehouse No. 10 (1/59, 1776; modified as the Royal Naval Museum 1986; the National Museum of the Royal Navy 2009
- Dock No. 1 (HE list no. 1272267, 1801) to hold RMAS/HMS *Minerva*/Monitor *M33/C33(M)*, May 1997, opened to the public in 2015
- Dock No. 3 (HE list no. 1272267, 1803) modified to hold Mary Rose 1983; 2013

### New structures

- Gymnasium (NE/81) 1893–1900
- The Factory/Store No. 100 (3/82) 1903
- Eastney (NE/79) 1907
- Power Station (2/19) 1907
- West Pumping Station (No. 3) (1/161) 1909
- Arrol 250 ton electric hammerhead crane 1912
- C Lock 1913
- North Pumping Station (No. 4) (2/239, 2/240) 1913
- D Lock 1914
- Dock shed/The White House (2/103-2/104) 1914
- Store No. 80 (3/93) 1917
- Boatswain's Workshop (3/231) 1923
- RN Film Corporation (1/154) 1929
- Victory Gallery (1/57) 1929–38
- South Office Block Annexe (1/87C) 1931
- Store No. 55 (3/86) 1936
- Store No. 108 (3/96) 1936
- Store No. 64 (3/95) 1939
- Chemical Store (3/85) 1939
- Boathouse No. 4 (1/6) 1940
- Supply Chain Offices (3/88) 1945
- Electricity Substation (3/156) c.1950
- Store No. 51/Timber Store, now Scaffold Store (3/182) 1955
- Shower Block (3/248) 1955
- Store No. 54/Flammable Store (3/163) 1959
- Store No. 78 (3/76) 1960
- Store No. 121 and Office (3/117) 1960
- COB1 (2/11) 1965
- Port Royal Restaurant (3/68) 1968
- Library (2/105) 1968
- Freight Centre (3/88A) 1970
- COB2 (2/10) 1972
- Gas Store (3/178) 1973
- Store No. 52 (3/179) 1973
- Steel Production Hall (2/56) 1974
- Amalgamated Pipe Shop (3/188) 1974
- Workshop Complex No. 2 (2/139-2/140) 1976

- Workshop Complex No. 1 (2/109-2/110) 1979
- Diamond Office Building (2/60) 1979
- Transport Operations Centre (3/5-3/6) 1980
- Unicorn Training Centre (3/1) 1980
- Dauntless Office and workshops (2/112) 1984
- Security Office (1/101) 1986
- Jetty for HMS Warrior 1860 1987
- Victory Building (1/100) 1993
- Receipt/Despatch Bay for the Pipe Shop (2/151) 1993
- Jetty by Boathouse No. 4 for harbour tours 1994
- General Purpose Store (3/117) c.1995
- Lub Oil Store (3/251) c.1995
- New Telephone Exchange (2/5) and Main Incoming Substation (2/7) 1993
- Portsmouth Naval Base Health Safety and Environment Group (3/56) 1993
- Visitor Centre (1/3) 1994
- Store No. 79 (3/94) c.2000
- Ship Halls A and B (2/121-2/122) 2002
- Trafalgar Gate Office Block (3/160) 2009

#### **Demolished structures**

- Storehouse No. 14/West Sea Store (1/60, 1771), west end demolished in 1940 air raid
- Store No. 25 (1786, 1/118) twentieth century courtyard buildings demolished 2011 because not original
- Railway swing bridge to South Railway Jetty (1876) was demolished 1946
- Wall between Rigging Basin and Repairing Basin (1878) demolished 1918 to create the Promontory
- Workman's Dining Rooms (1902) and the Women's Dining Rooms (1925), demolished 1968 for Port Royal Restaurant (3/68)
- HMS Victory Galley and Amenity Area (1/91-1/91C, 1887–1901, 1939–59, 1962–78, 1993), Store (1/92, 1901, 1951, 1977), Shed (1/93, 1901, 1977), Latrine (1/94, 1951/2), Shower Block (1/95, 1933/7, 1970s), demolished 2010 for new Mary Rose Museum (2013)
- Arrol 250 ton electric hammerhead crane (1912) dismantled 1984
- Three Air Raid Shelters and Bath House No. 6 (1939–45) were demolished 1975 to make way for Workshop Complex No. 2 (2/139-2/140)
- Victory Gate Search Rooms (1/2A-1/2B-1/2C, 1949), Clocking Station (1/2D, 1949); Romney
- Hut Boathouse (1/5, 1948), demolished 1994 for new Visitor Reception Centre (1/3)
- Store No. 121 and Office (3/117, 1960), demolished 1994 for the General Purpose Store
- COB1 (2/11, 1965), demolished 1994–95 due to concrete defects
- COB2 (2/10, 1972), demolished 2010 due to concrete defects
- Top Deck Canteen (1/134, 1973) demolished 2005 due to concrete defects

**Adapted structures**

- Storehouse No. 18/Great Ropehouse (1/65, 1771): three arches were cut for access in 1868, twelve double doors, new dormer windows and a new roof were installed in 1960
- Storehouse No. 34 (1/149, c.1786): damaged by an air raid in 1941, a new first floor built c.1955
- Storehouse No. 33 (1/150, 1786): a fire in 1908 gutted the top floor, a steel framed and reinforced concrete slab upper floor was added in 1939; damaged by an air raid on 24 August 1940 and rebuilt
- Storehouse No. 24 (1/117, 1789): an upper storey added 1930, converted internally for the Naval Historical Branch 2004
- Dock No. 14 entrance built 1876: dock built 1896; extended 1914
- Dock No. 13 (1876), lengthened 1903, had a concrete cofferdam placed across its entrance and infilled c.2002 for Ship Halls A and B (2/121-2/122)
- The Factory (3/82, 1903): 100 Store, refurbished 1999 as a Storage & Distribution Facility
- Semaphore Tower (1/40, 1810–24): fire 1913; rebuilt 1923–29
- St Ann's Church (1/66, 1785) damaged April/May 1941 by air raids, rebuilt 1955 without its western bay
- Storehouse No. 12 (1/51, c.1880): refurbished as the Library of the National Museum of the Royal Navy, Portsmouth in 1998
- Tar House/Mortuary (1/84A, pre-1807): Naval Historical Branch archive 2004
- Storehouse No. 8 (1/31, 1835): western end damaged in a Second World War air raid and rebuilt as Storehouse No. 5 in 1951 (1/34)
- Iron and Brass Foundry (1/140, 1854): refurbished as BAE Systems offices 2011
- Block Mills (1/153, 1802) refurbished 2006–8 to remove from HARR for possible eventual release to the heritage area

**Moved structures**

- Statue of William III (1718, HE list no. 1272288) originally at the eastern end of the first Commissioner's Garden; then The Parade; by 1860 was on The Green; moved after the Second World War to the west side of South Office Block Annexe on Main Road facing Storehouse No. 10; 2000 to the Porter's Garden
- Lion Gate (1/50A, 1778, HE list no. 1272303): removed 1870s from Portsea's town fortifications (close to the entrance to Anglesey Barracks and the present HMS *Nelson* Gate); 1923–29 incorporated into the rebuilt Semaphore Tower (1/40)
- Portsea Quay Gate incorporated into HMS *Nelson* Victory Main Gate (1734, 1899-1903, HE list no. 1387174).
- Unicorn Gate (1779, HE list no. 1244587): moved from Unicorn Ravelin in Portsea fortifications, re-erected in the new 1865 perimeter wall; in 1977 became a monument at the centre of a roundabout
- Round Tower (3/262, 1843–48, HE list no. 1244590): moved from New Buildings in 1868 to the east end of Floating Dock Jetty.
- Frederick's Battery (3/250, 1843–48, HE list no. 1244588): moved in 1868 from New Buildings to near Floating Dock Jetty to form the new northeast dockyard boundary, its northern half demolished in 1871 to make way for railway track

- Royal Navy Railway Shelter (1/45, 1893, HE list no. 1272292): moved c.2000 from South Railway Jetty to the North Camber on Watering Island
- Statue of Robert Falcon Scott (1915, HE list no. 1272287): originally on the west side of the Parade; moved after the Second World War to the west side of South Office Block Annexe on Main Road facing Storehouse No. 10; 2000 to the Porter's Garden

#### **Naval Base adaptation of old technology areas into current core operational areas**

- Dock No. 13 (1876): lengthened 1903; infilled c.2000 for Shipbuild Complex No. 2 and Ship Halls A & B (2/121 and 2/122, 2002)
- North Corner Development (1979–82) to support the *Queen Elizabeth* Class Infrastructure Project demolished Ship Shop Nos 3–4, Slip Nos 2 and 5 and a Steel Store
- A continuous (bar two entrances) western jetty has refurbished and straightened (c.2000) the original irregular jetties between Watering Island and North Corner (south to north: South Railway Jetty (South), South Railway Jetty (Centre), Sheer Jetty, Victory Jetty, Middle Slip Jetty (South), Middle Slip Jetty (North)), to allow more efficient berthing for Type 45 destroyers and new carriers HMS *Queen Elizabeth* and HMS *Prince of Wales*
- Complex No. 3 (C & D Locks), NW of Basin No. 3: refurbished 2002 as Shipbuild Complex No. 1

#### **Land extensions and one reduction**

- North Corner reclaimed (1690–1798); land north of the original shoreline reclaimed 1790s to 1881
- Steam Yard Extension (1843–48)
- Great Extension (1867–81) 95 acres (some reclaimed) enclosed by a new wall 1863–65
- Holy Trinity Church and Vicarage, purchased in 1906, enclosed by the dockyard wall 1907
- Marlborough Salient (Marlborough Row, Gloucester Street and Frederick Street) acquired 1944 for workshops and an electrical substation
- Unicorn Wall and Gate Extension 1977 for 1980 Transport Operations Centre (3/5-3/6): Copenhagen, Abercrombie, Nile, Trafalgar, Duncan, Conway and Chalton Streets lying between Flathouse Road and Market Way.
- Gun Store Ground in the extreme north-east of the yard, east of Flathouse gasworks and south of Flathouse quay, acquired early twentieth century, relinquished after 1929