PEMBROKE DOCK SLIPWAYS, THE DOCKYARD, PEMBROKE DOCK, PEMBROKESHIRE:

ARCHAEOLOGICAL WATCHING BRIEF

DAT Archaeological Services

Prepared by DAT Archaeological Services

For: BAM Nuttall

REGISTERED ORGANISATION CIfA

ymddiriedolaeth archaeolegol DYFED archaeological trust

DYFED ARCHAEOLOGICAL TRUST

REPORT NO. 2023-03

EVENT RECORD No. 129719

September 2023

PEMBROKE DOCK SLIPWAYS, THE DOCKYARD, PEMBROKE DOCK, PEMBROKESHIRE:

ARCHAEOLOGICAL WATCHING BRIEF

by

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ARCHAEOLOGICAL WATCHING BRIEF

Client	BAM Nuttall
Event Record No	129719
Report No	2023-03
Project Code	FS22-020
Report Prepared by	Marion Shiner
Fieldwork Undertaken by	Phil Poucher, Marion Shiner and Hubert Wilson
Illustrated by	
Report Approved by	Fran Murphy

Rev Number	Description	Undertaken	Approved	Date
_V1	First Draft	MS	FM	
_V2	Second Draft	MS	PP	
_V3	Final Draft	MS	FM	18/09/2023

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ARCHAEOLOGICAL WATCHING BRIEF

EXECUTIVE SUMMARY

Dyfed Archaeological Trust - Archaeological Services were commissioned to undertake an archaeological watching brief on demolition works and groundworks associated with the removal of an early nineteenth-century wharf and contemporary Grade II listed slipways (Ref. 14391 and 14392) at The Dockyard, Edgar Morgan Way, Pembroke Dock, Pembrokeshire (SM 9576 0394). A photographic record of the infilling of a Grade II listed timber pond (Ref. 6437) was also undertaken during the watching brief.

The structure of the wharf and slipways were revealed during the watching brief, along with the remains of a circular, stone-built privy. In addition, a probable infilled ditch and a brick-lined tunnel thought to relate to the mid-eighteenth century Paterchurch Fort were revealed in section.

CRYNODEB GWEITHREDOL

Comisiynwyd Gwasanaethau Archaeolegol YAD T i gynnal brîff gwylio archaeolegol ar waith dymchwel a gwaith daear yn gysylltiedig â chael gwared ar lanfa o ddechrau'r bedwaredd ganrif ar bymtheg a llithrfeydd Rhestredig Gradd II cyfoes (Cyf. 14391 a 14392) yn The Dockyard, Edgar Morgan Way, Doc Penfro , Sir Benfro (SM 9576 0394). Gwnaed cofnod ffotograffig o fewnlenwi pwll pren Rhestredig Gradd II (Cyf. 6437) hefyd yn ystod y briff gwylio.

Datgelwyd adeiledd y lanfa a'r llithrfeydd yn ystod y briff gwylio, ynghyd ag olion dirgelwch crwn o gerrig. Yn ogystal, datgelwyd ffos mewnlenwi debygol a thwnnel wedi'i leinio â brics y credir ei fod yn berthnasol i Gaer Paterchurch o ganol y ddeunawfed ganrif yn yr adran.

1. INTRODUCTION

1.1 Project Commission

1.1.1 Dyfed Archaeological Trust - Archaeological Services (DAT-AS) were commissioned by BAM Nuttall to undertake an archaeological watching brief during demolition works and groundworks relating to a 19th century wharf and two slipways, and the infilling of a contemporary timber pond, at The Dockyard, Edgar Morgan Way, Pembroke Dock, Pembrokeshire (SM 9576 0394 – Fig 1). The work represents one element of a scheme of works known as the Pembroke Dock Infrastructure Project. Planning permission has been granted for the development (application no. 20/0732/PA), which is described as:

Demolition, part demolition and infill, modification of slipways, erection of buildings and ancillary development – for port related activities including the manufacture of marine energy devices, boat manufacture and repair and erection of plant.

1.1.2 The development site covers approximately 11 hectares within the 19th century walled dockyard at Pembroke Dock. As well as 19th century wharves and slipways, the remains of Paterchurch Fort, a mid-18th century structure, survive within the dockyard. A number of conditions are therefore attached to the outline planning permission. Condition No.14 states:

Development of each phase as approved by reason of condition 4 shall not commence until the applicant, or their agents or successors in title, has implemented a programme of archaeological work for that phase. This shall be undertaken in accordance with a written scheme of investigation which shall be first submitted to, and approved in writing by, the Local Planning Authority.

Reason: To ensure the recording of any items of archaeological interest.

1.2 Scope of the Project

1.2.1 A Written Scheme of Investigation (WSI) for a programme of archaeological monitoring has been prepared by RPS Consulting Ltd on behalf of Milford Haven Port Authority (RPS 2021). This WSI has been approved by the local planning authority.

1.2.2 The WSI details the methodologies to be deployed for conducting a programme of archaeological monitoring during all groundworks within Phase 1 of the development that have the potential to physically impact upon buried archaeological remains. These methodologies cover attendance during groundworks, reporting of results, and archive deposition.

1.2.3 The archaeological works were undertaken in accordance with the Chartered Institute for Archaeologists' *Standard and guidance for an archaeological watching brief* and their codes of conduct (CIfA 2014).

1.3 Report Outline

1.3.1 This report provides a summary and discussion of the archaeological watching brief and its results and includes photographs of the site. Sources are referenced within the text or as footnotes.

1.4 Abbreviations

- Regional Historic Environment Record – HER
- Primary Reference Number – PRN
- National Grid Reference – NGR
- Written Scheme of Investigation - WSI

1.5 Illustrations

Record photographs are included to the rear of the text. Printed map extracts are not necessarily reproduced to their original scale and are illustrative only. On maps, north is towards the top of the page unless otherwise indicated.

1.6 Feature Notations

The numbers within square brackets [] in section 4 refer to the unique context number given to the individual cut features observed during the watching brief.

1.7 Timeline

The following timeline (Table 1) is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

Table 1: Archaeological and historical timeline for Wales.

Period	Approximate date	
Palaeolithic	*c.*450,000 – 10,000 BC	**Prehistoric**
Mesolithic	*c.*10,000 – 4400 BC	
Neolithic	*c.*4400 – 2300 BC	
Bronze Age	*c.*2300 – 700 BC	
Iron Age	*c.*700 BC – AD 43	
Roman (Romano-British) Period	AD 43 – *c.* AD 410	**Historic**
Post-Roman / Early Medieval Period	*c.*AD 410 – AD 1086	
Medieval Period	1086 – 1536	
Post-Medieval Period[1]	1536 – 1750	
Industrial Period	1750 – 1899	
Modern	20th century onwards	

[1]The post-medieval and Industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust

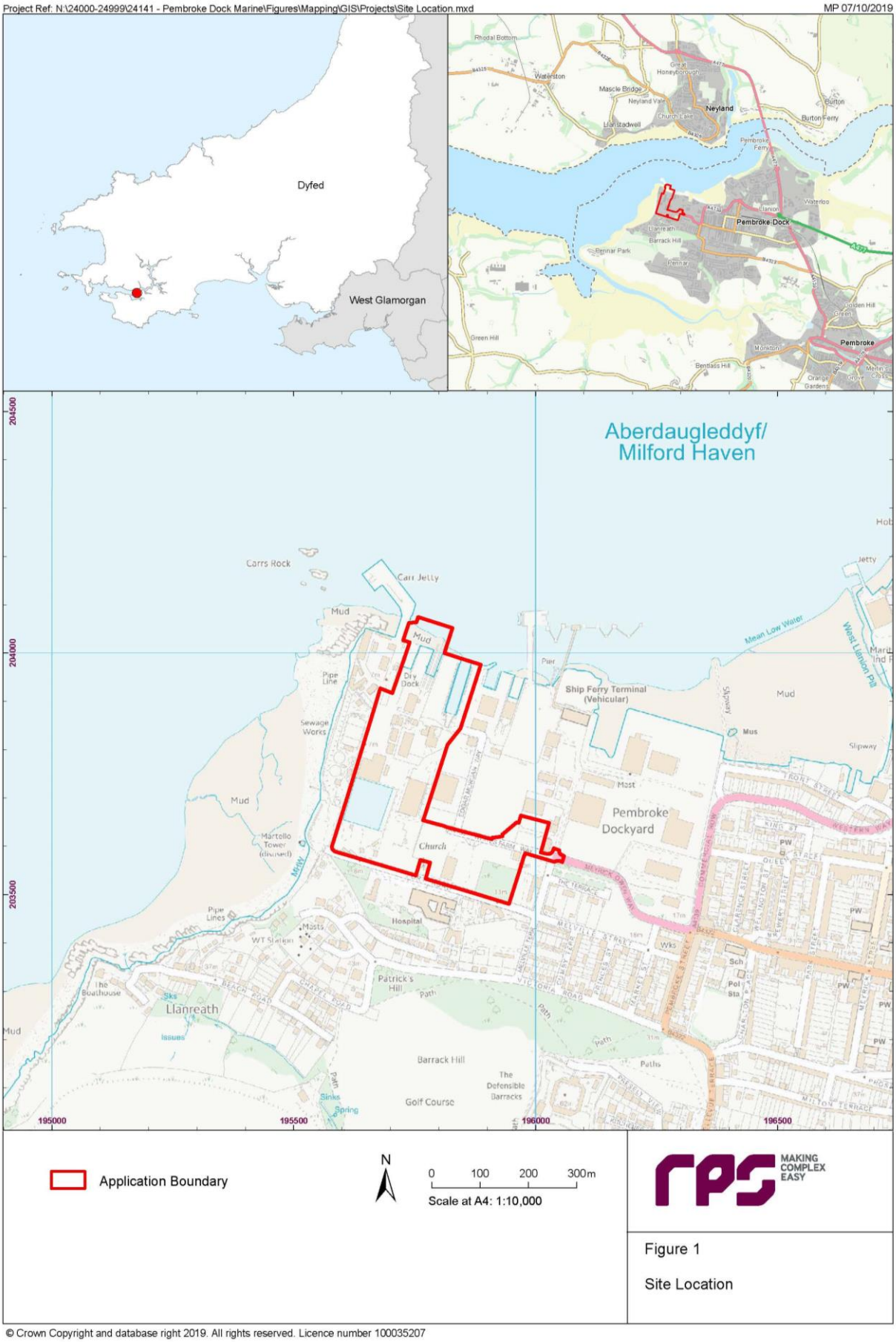

Figure 1: Site location map. Plan supplied by RPS, not reproduced to scale.

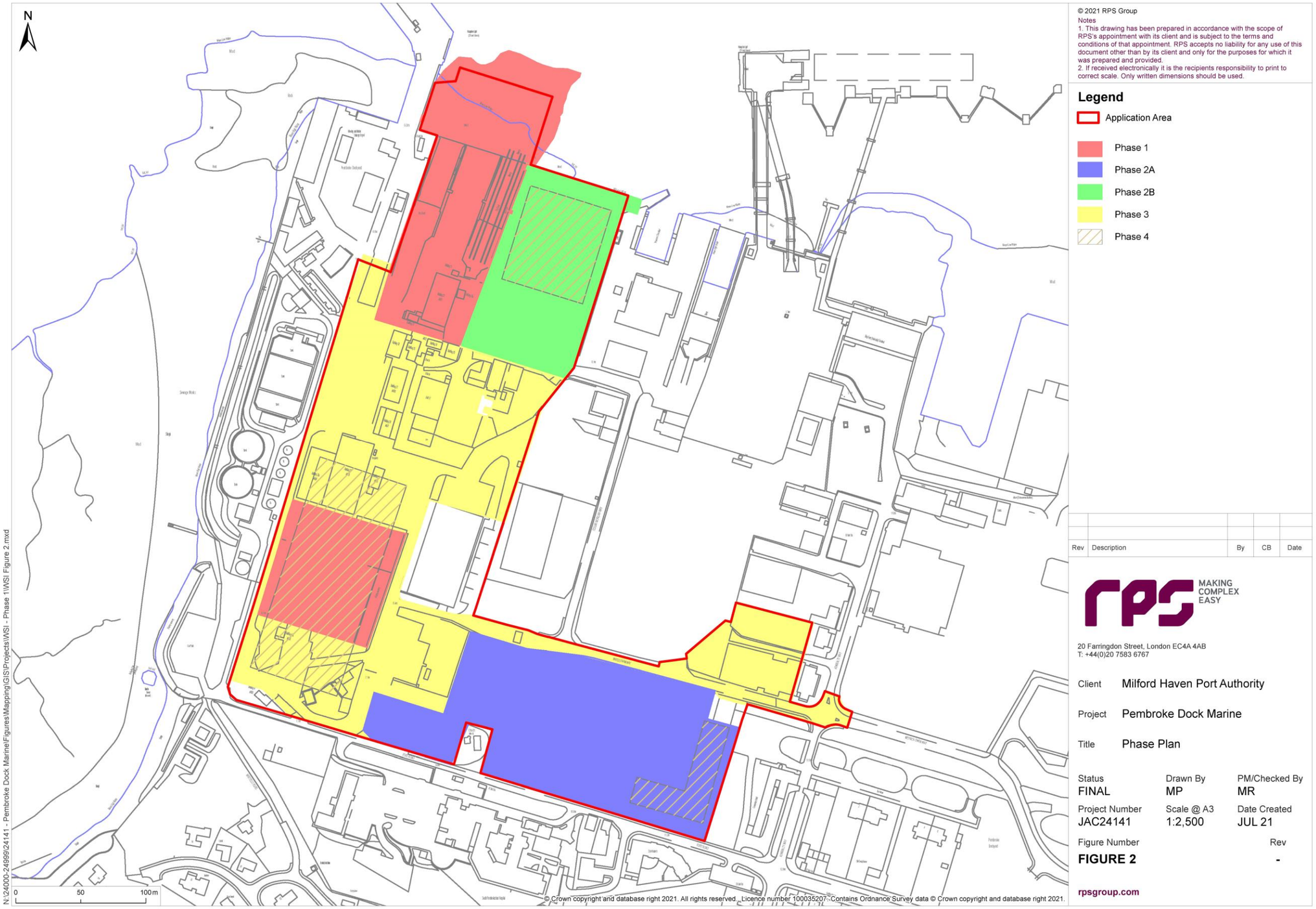

Figure 2: The dockyard layout. Building numbers are referenced in the WSI (RPS 2021). Plan supplied by RPS, not reproduced to scale.

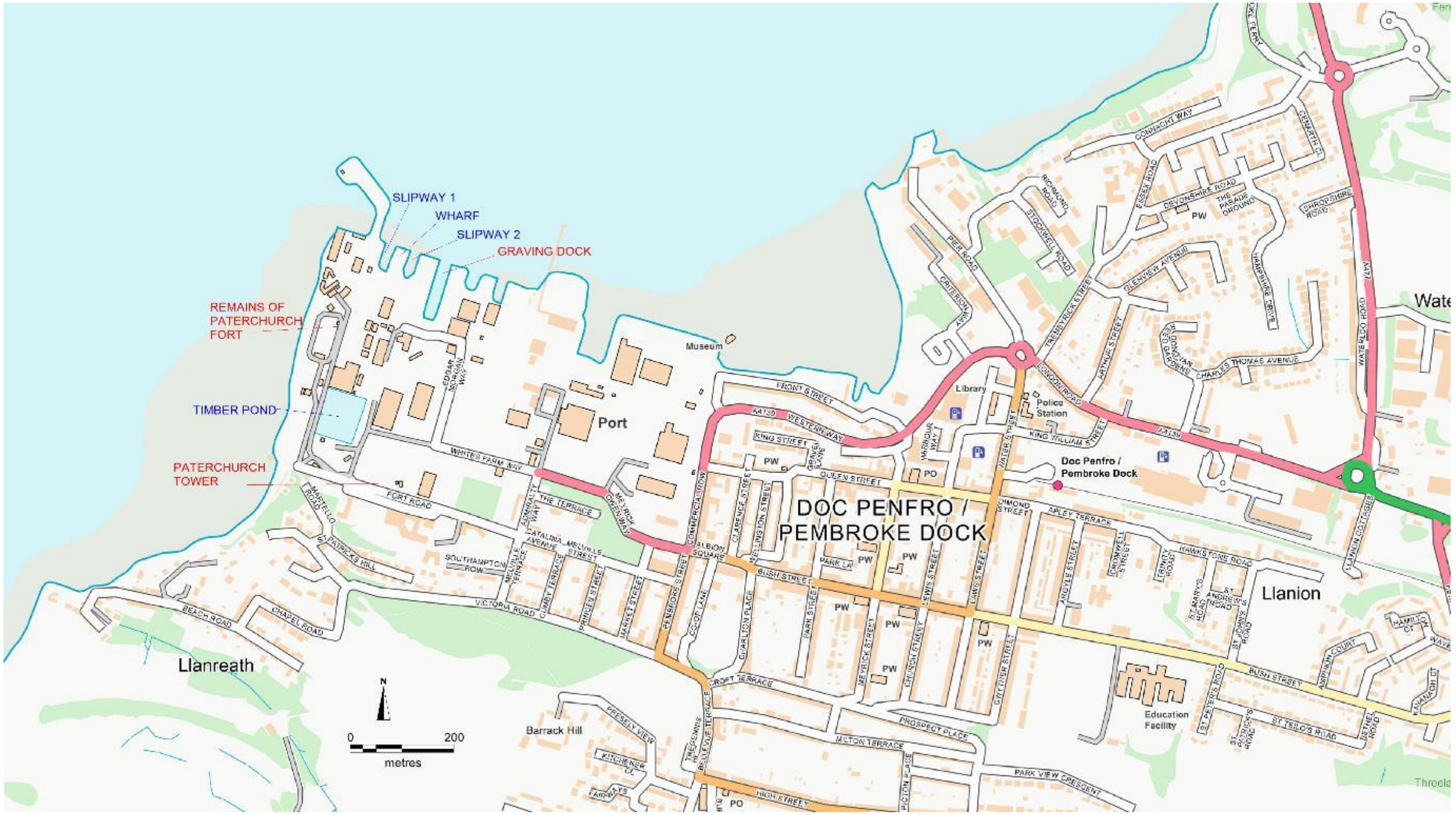

Figure 3: Location map for structures that were subject to the watching brief (blue text) and other historic structures mentioned in the report (red text).
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2. THE SITE

2.1 Location and Topography

2.1.1 The dockyard occupies a promontory known as Paterchurch Point on the southern side of the Milford Haven Waterway (Fig 1). Slipways, wharves and jetties line the northern side of the dockyard (Figs 2–3) and a shingle beach lies to the west. The town of Pembroke Dock mostly occupies level ground to the east, with some settlement on rising ground to the south. An inlet south of the promontory represents the mouth of the Pembroke River.

2.1.2 The underlying geology is limestone of the Pembroke Limestone Group. The rising ground to the south is formed of interbedded argillaceous rocks and sandstones of the Milford Haven Group while to the north, the limestone is mixed with mudstones and sandstones alongside the Haven (BGS 2022).

2.1.3 Milford Haven Waterway is a Registered Historic Landscape (HLW (D) 3). In summary, this landscape is described thus:

> The Haven is a ria or drowned valley flooded after the end of the last Ice Age; its deep yet sheltered waters extend 30km inland of its mouth, before dividing into the Eastern and Western Cleddau which continue as tidal rivers for some distance. Tributaries such as the Pembroke, Carew and Cresswell Rivers and several smaller pills flowing into the Haven, significantly increase the length of its meandering and incised shore and coastline. On either side and extending to the Dale and Angle peninsulas at the Haven's mouth, the low coastal plateau of south Pembrokeshire seldom rises above 80m above OD.
>
> The littoral landscape of Milford Haven encapsulates the whole chronological range of maritime conquest, settlement, commerce, fishing and defence from the 11th century to the changing realities of the late 20th century. This is a highly articulate and distinctive land and seascape; its integrity is its highest factor. It exhibits both continuity and adaptation and its overall setting and range of features make it unique in Wales if not in Britain. Yet, despite its robust adaptation to the modern industrial and maritime operations of the oil and power industries, the integrity of this multiperiod coastal landscape also depends on the conservation of its historic elements.
>
> Iron Age promontory forts are sited on several of the headlands at the entrance and along the course of the Haven and the Daugleddau. Early medieval, Christian and Viking sites are evidenced on placename, documentary and epigraphic grounds, such as early Christian inscribed stone monuments, but are no longer visible in the landscape. By contrast, the Norman conquest, achieved by coastally sited castle-boroughs, is still dramatically present at Pembroke, at Haverfordwest, and at Carew, all sited on the upper reaches of the rivers. Carew did not develop into a borough, and excavations, combined with a historic landscape study of Carew parish, have shown that a Dark Age stronghold and possible Romano-British site preceded the Norman castle, an indicator perhaps of similar pre-Norman foci at Pembroke and Haverfordwest (Murphy and Ludlow 2003).

3. HISTORICAL DEVELOPMENT

3.1 Documentary and cartographic sources indicate that a medieval manorial complex formerly occupied the land south of the development site. All that survives of this is the Grade I listed Paterchurch Tower (Ref. 14341), which is also a Scheduled Monument (PE380) and may have been a gatehouse (HER PRN 59229).

3.2 During the Seven Years War (mid-18th century), prior to the development of the dockyard, construction began on a large fort at a strategic location on Paterchurch Point (Fig 4) which afforded long views down the haven towards the Dale peninsula. Work on the fort ceased with the signing of the Treaty of Paris and the eastern parts were taken over for the dockyard in 1814. However, other elements were remodelled as a fort a number of times during the 19th century (Cadw 1994; RPS 2021).

3.3 Detailed historical analysis of the dockyard has been undertaken by RPS and recorded in various documents, with the following brief outline extracted from the WSI (RPS 2021).

Pembroke Dock was developed as a naval dockyard from the second decade of the 19th century, with the adjacent settlement of Pembroke Dock established at the same time. The dockyard was one of the largest shipbuilding yards in Great Britain, its period of naval use covering the period from wooden ships under sail, through to wooden steamships, ironclads and full steel vessels. The dockyard closed in 1926 but was then reused from 1931 by the Royal Air Force as a base for flying boats, eventually becoming the largest such base in the world, playing a crucial role during the Second World War. Part of the dockyard was also retained by the Admiralty during this period. The RAF vacated the site in 1959 and the small Admiralty yard closed in 2008. A major part of the former dockyard was vested in the Milford Haven Conservancy Board (not the Milford Haven Port Authority) upon its foundation in 1958. Since then, the former dockyard has acquired new civilian users and tenants (RPS 2021).

3.4 The two Grade II listed slipways (Refs. 14391 and 14392) that were the subject of the watching brief were constructed to the west of the original dockyard c.1843–45 (Figs 5–6). According to the listing description they were primarily shipbuilding slipways, with associated iron shipbuilding sheds. During the twentieth century, alterations in concrete were made, including the extension of the southern end inland (Cadw 1994). Between the slipways lie the wharf that was also subject to the watching brief.

3.5 The Grade II listed timber pond (Ref. 6437) was used for preserving ('pickling') timbers used in the construction of shipping and can be seen in Figure 6. It was constructed in 1844 and measures 89m north/south by 80m east/west by c.5m deep. It was paved with stone, with limestone side walls and granite coping (Cadw 1994). The pond could be emptied via drains in its north and west sides.

Figure 4: A sketch of Paterchurch Point from 1824 (National Archives ADM 106/1969 showing the boundary of the dockyard running to the north of Paterchurch Tower before returning south to the current line along Fort Road. The fort is depicted to the north-west of the dockyard boundary.

Figure 5: Plan of the original dockyard and fort in 1830 (National Archives 106/1971), pre-dating the two slipways and the timber pond.

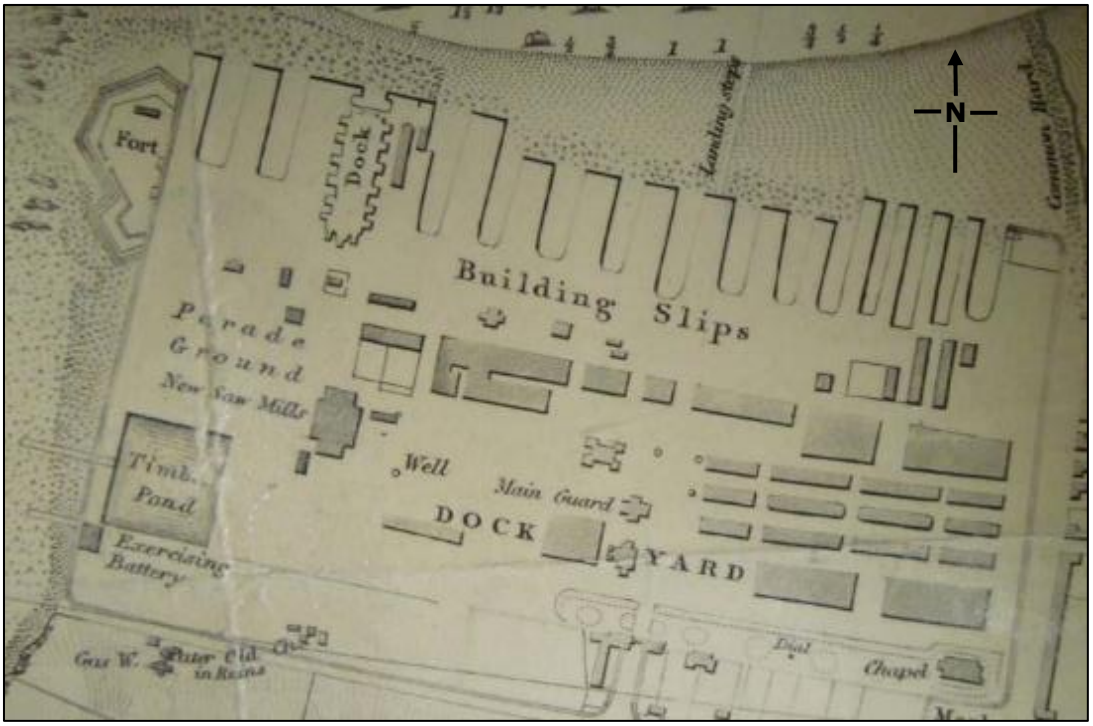

Figure 6: Plan dated to 1852 (National Archives MFQ 1/1286/11) showing the two additional slipways and the timber pond with a drain on its west side.

3.6 A plan of the dockyard produced in 1860 shows the two slipways and the wharf. A circular privy is depicted at the northern end of the wharf (Fig 7).

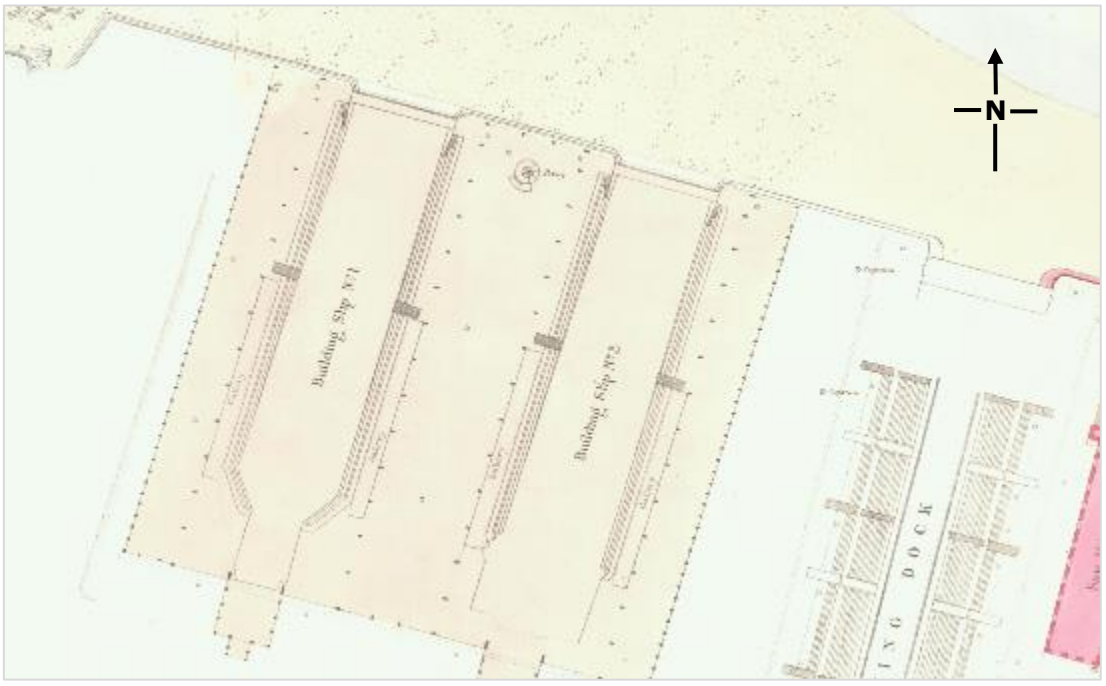

Figure 7: Extract of an 1860 plan of the dockyard depicting the two slipways and showing a circular privy at the northern end of the wharf.

3.7 No detail in the area of the dockyard is shown on the 1:2,500 first edition Ordnance Survey (OS) map of 1863 (Fig 8), presumably for security reasons. However, all features of the dockyard are clearly depicted on the

second edition 1:10,560 map, published in 1908 (Fig 9). The timber pond is labelled as such, but also as 'Mast Pool', while the slipways are labelled 'Sallyport' (a small exit for troops through a fortification). While the plan also shows galleries alongside both slipways, presumably to accommodate an audience for inaugural ship launching, the identification as sallyport suggests a strong naval function for Slipways 1 and 2; all other slipways are labelled as 'Building slips'. This interpretation appears to be supported by the presence of a parade ground on the 1852 plan (Fig 6) and a drill battery on the revised OS map of 1909 (Fig 9). At the time the OS map was published the old fort was known as the Pater Battery.

3.8 Aerial photography from the 1940s (Fig 10) shows the timber pond full of water. The land between the slipways and the timber pond, which was marked as a parade ground on the 1852 plan (Fig 6), has been infilled with buildings by this time. An aerial photograph of the mid-1950s again shows the timber pond full of water (Fig 11).

3.9 Recent satellite imagery still shows water in the timber pond (Figs 12 and 13). All slipways have been replaced by infrastructure for the Irish Sea ferries, except for the two that are the subject of the watching brief.

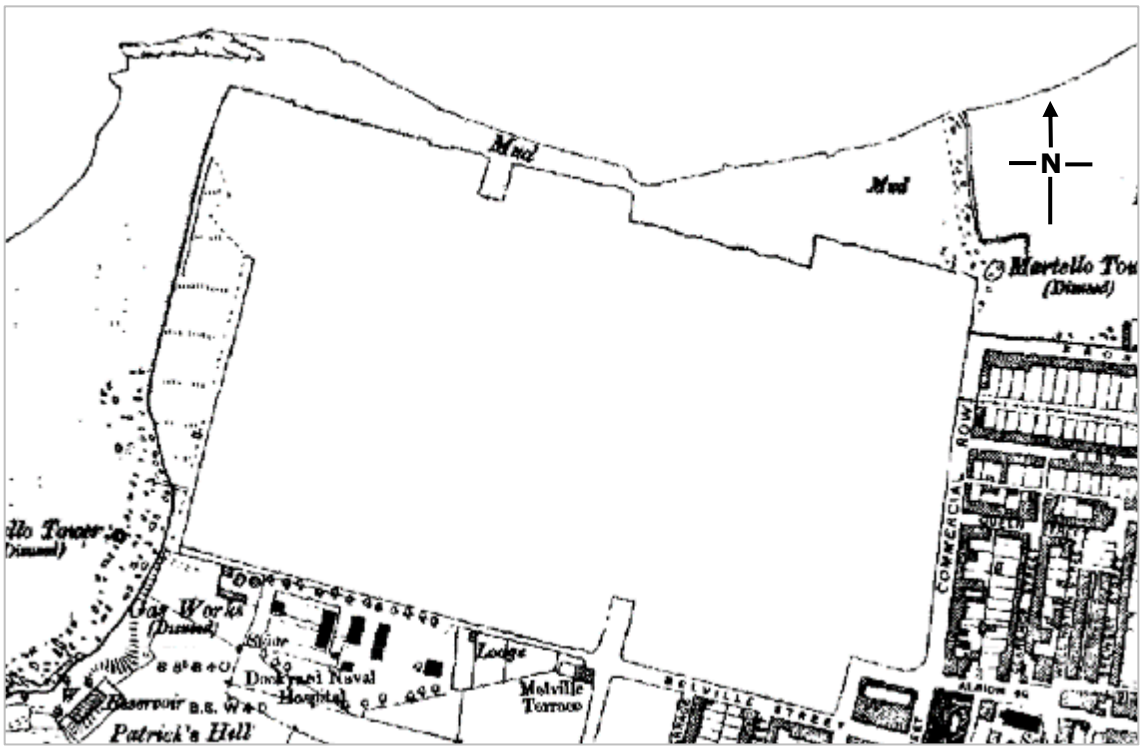

Figure 8: Extract from the 1:2,500 first edition Ordnance Survey map of 1863 (sheet XXXIX.4). No detail of the dockyard is provided, presumably for security reasons.

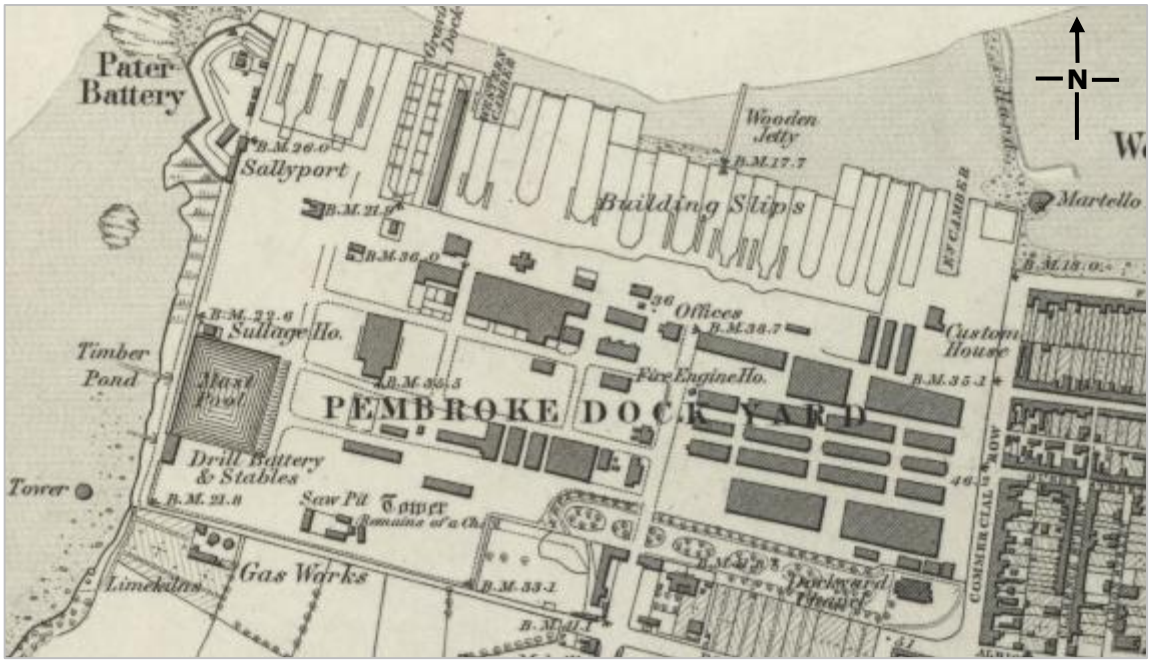

Figure 9: Extract from the 1:10,560 Ordnance Survey Map of 1909 (sheet XXXIX.NE). Reproduced with the permission of the National Library of Scotland.

Figure 10: Aerial photograph taken by the RAF in 1946 (106G UK 1625 6351). The timber pond is clearly full of water.

Figure 11: Extract of a 1955 aerial photograph (Meridian Airmaps SM90SE, no. 25423) showing the slipways and timber pond, which is still full of water.

Figure 12: Google Earth satellite image of the dockyard in December 2009, showing slipways and timber pond, still full of water.

Figure 13: Google Earth satellite image of the dockyard in January 2022, showing slipways and water-filled timber pond.

4. WATCHING BRIEF RESULTS

4.1 The watching brief was conducted as a series of visits to the site between 14 August 2022 and 01 July 2023. A purely photographic record was made of the infilling of the timber pond which was mostly achieved using a Canon EOS 2000D SLR camera but on one occasion a Samsung mobile phone camera was used.

Figure 14: Google Earth satellite image of the site on 10.10.2022. BAM Nuttall's offices and welfare facilities (green roofs) are visible on the wharf east of Slipway 2. Work is well underway on Slipway 2, and in the timber pond.

4.2 The Slipways (Photos 01–37)

4.2.1 Work to reduce the height of the two slipways began with Slipway 2, the easternmost of the pair. In total, this structure measured c.125m north/south by c.23m east/west.

4.2.2 Removal of the slipway revealed that levelling deposits largely comprising rubble in a gritty, greyish black matrix overlay the bedrock towards the southern end of the slipway (Photo 01). Further north, the slipway either directly overlay the bedrock or was bedded on deposits comprising either made-up ground of rubble and silt, or a layer of brickwork between two and seven bricks deep (Photos 02–04).

Photo 01: Showing deposits below the former Slipway 2 in section. View south. No scale.

Photo 02: Showing deposits below the former Slipway 2 in section. View north-west. 1m scale.

Photo 03: Showing deposits below the former Slipway 2 in section. View west. 1m scale.

Photo 04: Showing brickwork constructed over bedrock below the surface of Slipway 2. View west. 1m scale.

4.2.3 Large timbers had been used to support the concrete surface (Photos 05–06). Photo 07 shows a pair of these in-situ. They measured at least 3.8m long by 0.3m wide and were set 1.3m apart in a matrix that contained coal dust and masonry.

Photo 05: Showing a large timber beneath the concrete slab surface at the northern end of Slipway 2. View south. 1m scale.

Photo 06: Showing timbers and masonry below the slabs of Slipway 2. View west. 1m scale.

Photo 07: Showing a pair of substantial timbers set in coal dust/masonry at the top (south end) of Slipway 2. View north-west. 1m scale.

4.2.4 Within the concrete surface of Slipway 2 were two c.2.2m wide channels which ran south/north down the full onshore length of the slipway (c.97m). The area around each channel was paved with concrete slabs, and a pair of 0.81m high by 0.45 wide concrete runners topped by a metal track (similar to railway track) sat within each channel (Photos 08-10). Signage at the top (southern) end of the slipway revealed that it was in fact two slipways (indicating 'Slip 1' and 'Slip 2'), each represented by one pair of runners (Photo 08). Each channel extended offshore c.28m into the Cleddau (Photo 11). Photos 12-14 show the various stages of concrete removal.

Photo 08: Slipway 2 prior to demolition work commencing. Signs at the top of the slipway read 'Slip 1' (right) and 'Slip 2' (left). Concrete runners and metal track can be seen. View south-east. No scale.

Photo 09: Showing both pairs of concrete runners and metal tracks on Slipway 2. View north-east. No scale.

Photo 10: Channels revealed within Slipway 2 following removal of concrete runners. View north. 1m scale.

Photo 11: Showing concrete runners on Slipway 2 extending north into the Cleddau. View west. No scale.

Photo 12: Slipway 2 following removal of the concrete runners. View south-west. 1m scale.

Photo 13: Demolition of concrete runners on Slipway 2. View north.

Photo 14: Slipway 2 following removal of the concrete runners. View north. 1m scale.

4.2.5 The excavation of Slipway 2 revealed a cut feature, [001], seen in the east facing section as the slipway level was reduced. A rectangular feature cut into the bedrock through a layer of ash/coal dust below the slipway surface (Photos 15–16), it measured 1.4m wide by 1.4m deep and was filled by a firm brown silty clay with very occasional small to medium angular pieces of limestone and one piece of plaster. No corresponding cut was visible in the opposite (west-facing) section.

Photo 15: Showing cut [001] revealed in section below Slipway 2. View west. 1m scale.

Photo 16: Showing the location of cut [001]. View north-west. 1m scale.

4.2.6 Removal of part of the eastern wall of the slipway revealed the internal structure and its relationship to the adjacent wharf to the east (between the slipway and the graving dock). This demonstrated that it was a revetment wall, c.0.55m–0.6m wide, supporting the rubble infill below the surface of the wharf (Photo 17).

Photo 17: Showing the structure of the wharf-side wall, and part of the wharf, to the east of Slipway 2. View north. 1m scale.

4.2.7 The removal of the eastern wall of the slipway revealed a second feature; [002], which was cut into the bedrock approximately 8m north of [001] in the opposite (west facing) section (Photo 18). Cut [002] measured 5.8m north/south and was at least 1m deep. It had been cut from a lower level than [001]; there was c.1m of made-up ground between it and the bottom of a brick drain directly above it. The fill of [002] was similar in character to that of [001].

Photo 18: Showing cut [002] in the west-facing section created by excavation of Slipway 2. View east, 1m scale.

4.2.8 A third cut feature [003] was revealed in the east facing section created by the slipway excavation, almost directly opposite [002] (Photos 19–21). Cut [003] measured 7m north/south, tapering to 3.85m at the lowest excavated point, with a maximum visible depth of 2.1m. Again, it was clear that it had been cut from a lower level than [001], as the top of the cut was below a line of brickwork recorded beneath the slipway (see section 4.1.2). Two fills were visible in [003]; a primary fill of ash and gravels and a secondary fill of brown silty clay with small angular stones. To the north, part of the fill was a patch of brickwork with maximum dimensions of 1.6m wide x 0.4m deep. Cuts [002] and [003] seemed to represent a linear cut feature on an approximately north-west/south-east alignment below Slipway 2.

Photo 19: Showing cut [002] revealed in section by the removal of Slipway 2. View east. 1m scale.

Photo 20: East facing section at the top (south) end of Slipway 2 showing cut [003] in the bedrock with brick layer above. View north-west. 1m scale.

Photo 21: Detail of east facing section at the top (south) end of Slipway 2 showing cut [003] in the bedrock, with brick layer above. View west. 1m scale.

4.2.9 Two brick structures were observed during the Slipway 2 excavation. The first was a brick drain revealed by removal of part of the eastern wall of the slipway (Photo 22). It was at a higher level than the surface of the slipway (Photo 23).

Photo 22: Showing a brick drain revealed by removal of part of the wharf east of Slipway 2. View east. 1m scale.

Photo 23: Showing the level of the brick drain (red arrow) revealed by removal of part of the eastern wall of Slipway 2. View north-east. 1m scale.

4.2.10 The second brick structure was that of an arch revealed in the east facing section created by the slipway excavation. This structure was over 1m high and occupied a cut within the bedrock [004]. Additional bricks had been used to infill the space between the north wall of the arch and the bedrock (Photo 24).

Photo 24: Showing a brick arch revealed in section during excavation of Slipway 2. View west. 1m scale.

4.2.11 Once work to reduce Slipway 2 and demolition of the wharf (see section 4.2) was completed, work commenced to reduce the height of Slipway 1. This was the westernmost of the two slipways. Slipway 1 measured c.135m x c.20m and was aligned approximately north/south, with the northern end extending out into the River Cleddau (Figure 14).

4.2.12 The lowest deposit to be encountered below the slipway varied from north to south (Photo 25). At the northern (foreshore) end, granite blocks and large timbers were the lowest deposit (Photos 26–27). South of this, the lowest deposit reached by the work comprised very large granite slabs (Photo 28). Further south again, a levelling deposit comprising a dark pinkish-brown concrete with large timbers set into it was the lowest deposit encountered (Photos 29–32). In places, large, rounded stones were also present (Photo 33). Some of this deposit, including all of the timbers, was removed and the remainder was levelled as a bedding for the new slipway (Photo 25). Probing with a ranging rod suggested that the bedrock lay c.5–10cm below the levelled deposit.

Photo 25: Showing the levelled area of the former Slipway 1 and the changing character of the remaining, earlier, levelling deposits. View south. 1m scale (centre of shot).

Photo 26: Detail of granite blocks removed from the northern end of Slipway 1. View south-west. 0.5m scale.

Photo 27: Granite blocks and wooden beams in-situ along line of former slipway doors, at northern end of Slipway 1. View west. 1m and 0.5m scales.

Photo 28: Very large granite slabs in-situ to the south of the granite blocks and wooden beams at the northern end of Slipway 1. View west. No scale.

Photo 29: Timbers within the levelling deposits below Slipway 1 during removal. View west. No scale.

Photo 30: Showing timbers embedded within levelling deposits below the surface of Slipway 1. View west. 1m and 0.5m scales.

Photo 31: Close up of timbers shown in Photo 30. View west. 1m and 0.5m scales.

Photo 32: Showing deposits below Slipway 1 following removal of its eastern wall (western wall of the wharf). View west. 1m and 2 x 0.5m scales.

Photo 33: Showing deposits below Slipway 1, towards the northern end. View north-west. 1m scale.

4.2.13 A further change in the nature of the lowest deposits was observed towards the southern half of the slipway. Both bedrock and aggregate, and a grey concrete containing small aggregate were present below the eastern surface in this area (Photos 34–35). To the west, the deposit was predominantly pinkish-brown concrete. Corrugated metal sheets appeared to separate this from the deposit and bedrock to the east (Photo 36). The presence of blue plastic sheeting below the concrete surface revealed that areas of the slipway were of relatively recent construction (see Photos 33–34).

Photo 34: Showing deposits and plastic sheeting below the concrete surface of Slipway 1, at the eastern side towards the southern end. Looking south-west. No scale.

Photo 35: Showing bedrock below the southern end of Slipway 1, prior to demolition. View south-west. 1m scale.

Photo 36: Showing differing deposits below Slipway 1 during work to install floodlights. View north-east. No scale.

4.2.14 Above all these deposits the surface of the slipway was modern concrete from its southern end as far north as the large granite slabs already mentioned (Photo 37).

Photo 37: Slipway 1 prior to work commencing. View north-east.

4.3 The Wharf (Photos 38–72)

4.3.1 The wharf to be demolished was located between Slipways 1 and 2 and measured 142m long by 42m wide and c.6m high (Fig 14 and Photos 50–51). Prior to demolition it was subject to a Level 4 Historic Building Recording (Poucher 2023), where a detailed description can be found.

4.3.2 Removal of the infilled interior of the wharf revealed that the internal elevations of the walls were constructed using roughly dressed stone, while the external (visible) elevations were of finely dressed granite blocks. The core of the walls was infilled with rubble while the core of the wharf was a mixture of rubble and bedrock (Photos 38–45).

Photo 38: View north, following demolition of the wharf. No scale.

Photo 39: View south, following demolition of the western wall of the wharf/ eastern wall of Slipway 1. No scale.

Photo 40: Demolition of the western wall of the wharf/eastern wall of Slipway 1 continuing. View north-west. No scale.

Photo 41: Showing the relationship between the western wall of the wharf and Slipway 1. View north. No scale.

Photo 42: Close up showing the structure of the western wall of the wharf/eastern wall during Slipway 1 demolition. View north. 1m scale.

Photo 43: Demolition of the western wall of the wharf/eastern wall of Slipway 1 commencing. View west. No scale.

Photo 44: Showing the internal structure, including bedrock, of the wharf during demolition. View west-south-west. No scale.

Photo 45: Showing the internal structure of the eastern wall and the end of the wharf, following demolition of the remainder of the wall. The remains of the privy are just becoming visible (red arrow) View north-west. No scale.

4.3.3 Evidence for more than one phase of construction was recorded in the eastern wall of the wharf (western wall of Slipway 2). Towards the southern end, towards the top of the slipway, the wall had been constructed using crude stone blocks whereas to the north, the construction was of dressed limestone. The southernmost part of the wall also had no kerbstones along the top (Photos 46–47). The purpose of a vertical notch recorded in the internal face of the western wall is not known (Photo 48).

Photo 46: Showing a dogleg in the eastern wall of the wharf/western wall of Slipway 2. View south-west. 1m scale.

Photo 47: Showing a change of build/phase in the south end of the eastern wall of the wharf/western wall of Slipway 2. View north-west. 1m scale.

Photo 48: Showing a vertical notch in the internal face of the wharf wall. View west. 1m scale.

4.3.4 Removal of the concrete from the top of the wharf revealed a number of stone plinths within the fabric of the structure, several of which had metal stanchions set into them (Photos 49–54). A line of these was revealed within the western side of the wharf, where the plinths measured approximately 1.5m by 2m by at least 2m high. A large timber post was found next to one of the western plinths (Photo 49). A single plinth seen in section on the eastern side of the wharf during demolition was smaller than those on the western side (Photo 55).

Photo 49: Showing the remains of a metal stanchion and also a large timber post found next to the plinth containing this stanchion. 1m scale.

Photo 50: Remains of metal stanchion after removal of surrounding plinth. View north-west. 1m scale.

Photo 51: Showing the scale of the blockwork plinths revealed within the wharf. View south-east. 1m scale.

Photo 52: Close-up showing a sheared-off metal stanchion set into one of the plinths revealed within the wharf. View east, 1m scale.

Photo 53: Close-up of one of the blockwork plinths revealed within the wharf. View south-west, 1m scale.

Photo 54: Showing stone plinths revealed during demolition of the wharf. Slipway 1 is visible underwater in the background. View west-south-west. 1m scale.

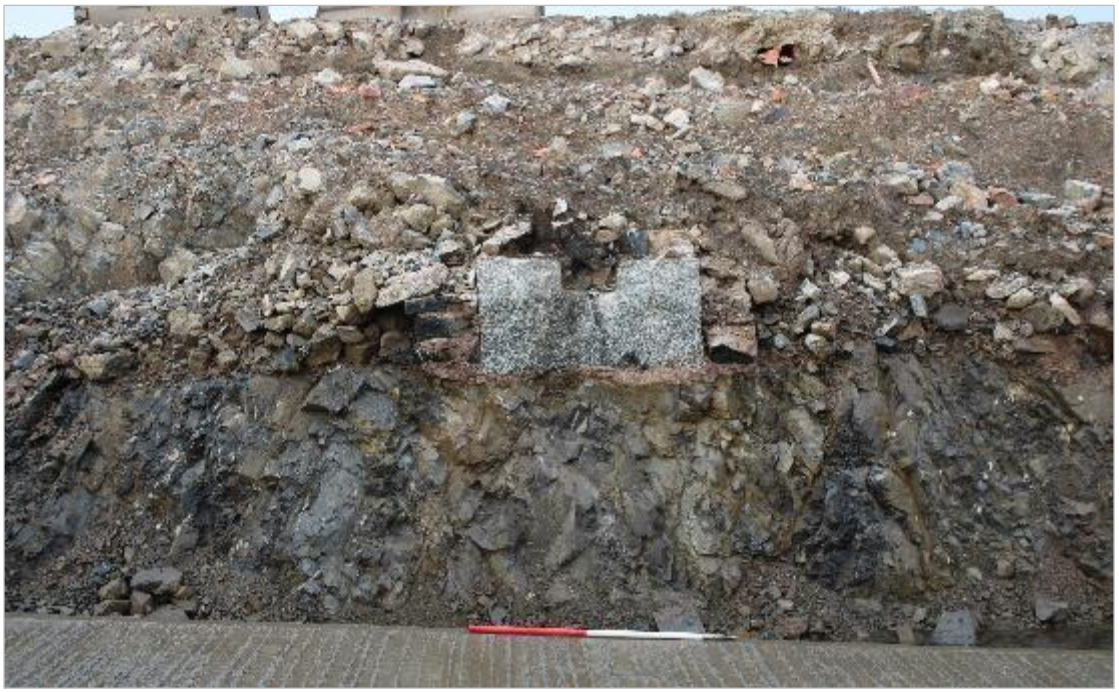

Photo 55: The remains of a smaller plinth and stanchion socket seen in section during demolition of the wharf. View west. 1m scale.

4.3.5 Demolition of the wharf revealed the remains of a circular, stone-built structure (Photos 56–61), labelled on an 1860 plan of the dockyard as a privy (Fig 15). Measuring c. 3.5m in diameter it had survived to a little over 4m high. The rough nature of the stonework at the top showed that this structure had originally been taller, the height having been reduced to below the level of the top of the wharf at some point. The interior of the structure was filled with concrete and rubble.

Photo 56: The privy, following removal of wharf infill from around it. View north-west. 1m scale.

Photo 57: The top of the remains of the privy showing the infilled interior. View south-south-east, 1m scale.

Photo 58: The privy during removal of infill in the interior of the wharf. View west, 1m scale.

Photo 59: The privy during removal of infill in the interior of the wharf. View north-east, 1m scale.

Photo 60: Showing the privy emerging from the interior of the wharf as spoil and infill are removed. View north-west. No scale.

Photo 61: Showing the former privy emerging within the wharf. View south-east. 1m scale.

4.3.6 During the demolition of the wharf, several sections of a cast iron pipe on a north/south alignment were recorded and recovered from within the structure (Photos 62 and 66). A further section of pipe on the same alignment and set within a concrete sleeve was observed on the foreshore, below the north end of the wharf (Photos 63–65).

Photo 62: Showing a corroded iron pipe revealed below the surface of the wharf. View south. 1m scale.

Photo 63: Showing a cast iron pipe within a concrete 'sleeve' crossing the foreshore north of the wharf. Probably carried outfall from the privy. View west. 1m scale.

Photo 64: Close up of the pipe shown in Photo 63. 1m scale.

Photo 65: Showing the north wall of the wharf from the foreshore. The cast iron pipe is just visible (red arrow) View south-west. 1m scale.

4.3.7 Above the rubble and bedrock core, and directly below the concrete surface at the northern end of the wharf, was a levelling deposit comprising a dark brown sand with small to medium stone inclusions, overlain with a further levelling deposit of sand (Photos 66–67). At the southern end of the wharf, the concrete surface (Photos 70–71) was bedded on a concrete levelling deposit that overlay a blue plastic membrane (Photos 68–69).

Photo 66: Sandy levelling deposit below the concrete surface at the north end of the wharf. Note that several sections of iron pipe have been removed. View north. No scale.

Photo 67: Sandy levelling deposit emerging below the concrete at the north end of the wharf. View north. 1m scale.

Photo 68: Modern concrete levelling deposit and plastic membrane at the south-east corner of the wharf. View south-west. No scale.

Photo 69: Modern concrete levelling deposit and plastic membrane at the south-east corner of the wharf. View south-east. No scale.

Photo 70: The wharf between Slipways 1 and 2 prior to work commencing. Two mooring fairlead rollers can be seen to the left, on the end of the wharf (see Photo 135). View north-west. No scale.

Photo 71: The wharf between Slipways 1 and 2 prior to work commencing. The southern (top) end of Slipway 1 is just visible to the right of shot. View south. No scale.

4.3.8 During removal of the infill of the wharf a possible cut [005] was observed in section (Photo 72). Cut [005] measured approximately 4m north/south at its excavated base, and a visible north/south width higher up of at least 6m. It was at least 1.5m deep.

Photo 72: Showing a possible cut revealed in section during demolition of the wharf. View west. 1m scale.

4.4 The Netmaking Shed (Photos 73–82)

4.4.1 The watching brief also recorded the demolition of a former netmaking shed, located at the southern end of Slipway 2 and the wharf. This structure had been subject to a Level 3 building recording prior to demolition (Poucher 2023).

4.4.2 The earliest feature recorded during the watching brief on the netmaking shed was an arched brick structure on a south-east/north-west alignment (Photos 73–75). This was not excavated, and it is not known whether the structure was a tunnel or a drain. The bricks used in its construction appeared more like those used in a tunnel seen in section during the excavation of Slipway 2 than those seen in a drain below the wharf east of that slipway (see Photos 22–24).

Photo 73: Detail of an arched brick structure truncated by a concrete inspection pit, revealed below-ground following removal of the shed. View south, 1m scale.

Photo 74: The concrete inspection pit which truncated the brick drain (visible to the left of shot). View east, 1m scale.

Photo 75: Showing a low concrete wall at the east end of the inspection pit (not yet revealed). View north, 1m scale.

4.4.3 The arched brick structure had been truncated by the cut for a concrete inspection pit on an east/west alignment. This pit, which measured 2.7m east/west by 1.4m north/south and was at least 1.5m deep, had been constructed using concrete shuttering. A 2.15m long low concrete wall on a north/south alignment was recorded at its east end, while a flight of steps led down into it from the west end (Photos 74–76).

Photo 76: Showing the location of the concrete inspection pit and brick structure. View east. 1m scale.

4.4.4 The shed (Photos 77–78) that stood above the inspection pit and brick structure had been demolished in a number of stages, the first of which involved the removal of all windows and doors (Photo 79). Following that, the corrugated sheeting enclosing the sides of the building was removed, exposing the skeleton of iron girders (Photos 79–82).

Photo 77: Showing the location of the shed in relation to Slipway 2 (left of shot) and the wharf. View south. No scale.

Photo 78: The shed prior to demolition. View south-east. No scale.

Photo 79: The shed following removal of windows and doors, and part of the western side. View south-east. No scale.

Photo 80: The shed following removal of corrugated sheets on the western, northern and eastern sides. View south-east. No scale.

Photo 81: Showing the shed following demolition of an ancillary building at the south-east corner. View north-east. No scale.

Photo 82: General shot showing the structure of the shed during demolition. View north-east. No scale.

4.4.5 Breeze block rooms inside the shed were next to be demolished, along with three ancillary buildings (Photos 80–81). These were located just outside the south-western and south-eastern corners, and adjacent to the northern side. Like the shed itself, they had also been subject to prior building recording (Poucher 2023).

4.4.6 The next stage of demolition saw the remaining structure razed to the ground. Following this, the iron girders were separated from the roofing sheets before both components were removed from the area.

4.5 The Timber Pond (Photos 83—110)

4.5.1 The infilling of the timber pond has been recorded via a series of photographs.

4.5.2 Excavation of a pipe trench along a lane west of the timber pond revealed the workings of a sluice gate in the west wall that was formerly used to fill/empty the structure. Whilst shown in more detail in Section 4.5, Photos 84 and 85 demonstrate the location of the trench and gate in the pond walls.

Photo 83: The timber pond prior to infilling. View south-south-east. No scale.

Photo 84: The timber pond prior to infilling. The opening for the sluice gate in the west wall has been blocked with sand. View south-west. No scale.

Photo 85: The timber pond prior to infilling. The drain in the west wall has been blocked with sand. The drain in the north wall is visible. View north-west. No scale.

Photo 86: The key that opened the sluice gate for the drain in the western wall of the timber pond. 1m scale.

Photo 87: Showing the drainage tunnel in the north wall of the timber pond. View north. 1m scale.

Photo 88: Work commencing on an access ramp for vehicles infilling the timber pond. View south-south-west. No scale.

Photo 89: Protective sheeting placed on the eastern slope of the timber pond, where the vehicle access ramp will be constructed. View south-east. No scale.

Photo 90: Work continuing on the vehicle access ramp. View south-east. No scale.

Photo 91: The vehicle access ramp taking form. View south-south-east. No scale.

Photo 92: The vehicle access ramp nearing completion, with Paterchurch Tower clearly visible in the background. View south-east. No scale.

Photo 93: Final work on the vehicle access ramp. View south-east. No scale.

Photo 94: Work to infill the timber pond commencing. View east-south-east. No scale.

Photo 95: Close up of work to infill the timber pond commencing. View north-east. No scale.

Photo 96: Showing the rear of the west wall of the timber pond, exposed during pipe laying in the lane west of the pond. View north. No scale.

Photo 97: Showing deposits at the bottom of the timber pond almost completely covered with the first layer of sand and aggregate. View south-south-east. No scale.

Photo 98: Continuing work to infill the timber pond. View north-north-west. No scale.

Photo 99: Continuing work in the timber pond. View north-west. No scale.

Photo 100: Showing progress in the timber pond. View south-west. No scale.

Photo 101: Close-up of work to infill the timber pond. The drain in the west wall is now completely covered up. View south. No scale.

Photo 102: The timber pond infilled c.50%. View west-north-west. No scale.

Photo 103: Infill of the timber pond continuing. Looking south-east towards the access ramp. No scale.

Photo 104: Infill of the timber pond continuing. View south-west. No scale.

Photo 105: Infill of the timber pond continuing. View south. No scale.

Photo 106: Infill of the timber pond nearing completion. View north-west. No scale.

4.6 Miscellaneous Observations and Finds (Photos 107—123)

4.6.1 During the course of the watching brief, observations were recorded at other locations on the site where groundworks were taking place.

4.6.2 As noted in Section 4.4, excavation of a pipe trench along a lane west of the timber pond revealed the workings of a sluice gate in the west wall that was formerly used to fill/empty the structure (107–108). Several service pipes/cables were also revealed in this trench (Photos 107 and 109–110).

Photo 107: Showing the sluice gate housing revealed during excavation of a pipe trench west of the timber pond. View north-east, 1m scale.

Photo 108: Showing sluice gate machinery revealed during the excavation of a pipe trench west of the timber pond. View south. 1m scale.

Photo 109: Showing an earlier pipe visible in section (red arrow) below the lane west of the timber pond. View south-west. No scale.

Photo 110: General shot along the lane west of the timber pond during infilling. View south. No scale.

Photo 111: Showing a large iron nail observed on the foreshore north of the wharf. View west. 1m scale.

Photo 112: Showing a mooring D ring observed on the foreshore north of the wharf. 1m scale.

Photo 113: Showing a mooring fairlead roller removed from the front of the wharf. No scale.

Photo 114: Showing part of a boat rigging/rope pulley during the demolition of Slipway 1. 0.5m scale.

Photo 115: Showing timbers on the foreshore near the north end of Slipway 1, prior to salvage. View north. 1m scale.

Phot 116: Discarded timbers salvaged from excavations on the foreshore north of Slipway 1. 1m scale.

4.6.3 Excavation in the wharf between Slipway 2 and the graving dock revealed two blockwork plinths with metal stanchions set into them, identical to those found within the wharf between Slipways 1 and 2 (Photos 117–118).

Photo 117: Showing a rail and one of two blockwork plinths containing a metal stanchion revealed within the wharf between Slipway 2 and the graving dock. View south-west. No scale.

Photo 118: Showing rails set into the wharf between Slipway2 and the graving dock. View west. 1m scale.

4.6.4 Cable trench excavations south of the wharf between Slipways 1 and 2 also revealed old service pipes, along with other dockyard infrastructure and levelling deposits (Photos 119–123).

Photo 119: Showing service pipes revealed in cable trenches south of the wharf. View north-west. 1m scale.

Photo 120: Showing deposits below ground in a cable trench south of the wharf. 1m scale.

Photo 121: Showing dockyard infrastructure revealed in trenches south of the wharf. View north. 1m scale.

Photo 122: Showing service pipes revealed in trenches south of the wharf. 1m scale.

Photo 123: Brickwork below an iron pipe exposed in a north/south aligned trench at the south end of Slipway 1. View west. 1m scale.

5. DISCUSSION

5.1 The watching brief at the Dockyard, Pembroke Dock has afforded a unique opportunity to undertake detailed observation of an historic naval dockyard.

5.2 Demolition of the two slipways revealed details of their construction and dating, showing evidence for the southward extension to their original length, known to have taken place during the 20th century (Cadw 1994).

5.3 Demolition of the wharf between the slipways revealed evidence for dockyard infrastructure, in the form of a line of blockwork plinths each containing the base of a metal stanchion. Their north/south alignment abutting the interior of the west wall of the wharf suggests that they relate to the dockyard, rather than to the earlier fort on the site. The presence of two further plinths abutting the west wall of the wharf between Slipway 2 and the graving dock supports this interpretation. These features are very likely to relate to those shown on the 1860 plan of the dockyard, which reveals that galleries were situated either side of the slipways (Figure 15). Presumably these were to accommodate visitors attending the launching of ships.

Figure 15: Plan of the dockyard in 1860 showing galleries either side of the slipways and a privy on the wharf.

5.4 A circular stone-built structure, revealed within the infill of the wharf at its northern end, is also depicted on the 1860 plan of the dockyard where it is labelled as a privy (Figure 15). This must have been constructed after 1852, as it is not shown on either the 1852 or the 1830 plan (Fig 5 and 6). Sections

of cast iron drainpipe excavated from the infill of the wharf may be related to the water supply to this structure, while a cast iron drainpipe in a concrete sleeve, recorded on the foreshore north of the wharf, may have been the means by which effluent was released into the Cleddau River. It was evident that the surviving c.4m high structure had once been higher, but had been lowered at some time, with the remains hidden below the surface of the wharf. Presumably this took place when the privy went out of use and must have happened before the 1906 revision of the OS map, on which no privy is shown (Fig 9). It is assumed that the interior of the privy was filled with concrete and rubble at the same time its height was reduced.

5.5 Two substantial cuts seen in section either side of Slipway 2 were in the correct location to represent an infilled ditch relating to the earlier fort on the site (Fig 16). The function of a brick-lined structure seen below the netmaking shed is not known, but it may be associated with a brick-lined tunnel cut into the bedrock a little to the south of the infilled ditch. This tunnel may also be related to the Pater Fort, as it seems unlikely that a tunnel under the wharf would have been a necessary component of the shipbuilding slipways/sallyport. The tunnels and infilled ditch were the only potential evidence for the fort revealed during the works, suggesting that the remainder of that structure in this area was swept away during construction of the slipways and wharf. The tunnel may have been left in situ to lend additional support to the wharf, or perhaps it was considered too onerous a task to infill. It is quite possible that the demolished former walls of the fort in this area were reused as the rubble core observed within the walls of the wharfs (Photos 40–42).

Figure 16: 1829 plan of the Pater Fort and dockyard showing the area of the two slipways prior to their construction (blue outline). Cut features revealed in section during demolition of Slipway 2 are in the correct location to relate to the boundary of the fort (green outline).

6. CONCLUSION

6.1 An archaeological watching brief was undertaken during demolition of a 19th century wharf, two contemporary adjacent Grade II listed slipways and a later netmaking shed at The Dockyard, Pembroke Dock, Pembrokeshire (SM 9576 0394). A photographic record of the infilling of a Grade II listed timber pond was also undertaken. The work has afforded a unique opportunity to undertake detailed observation of elements of a historic naval dockyard. The works have revealed information concerning the construction and subsequent development/alteration of the slipways and wharf, and of infrastructure relating to the timber pond.

6.2 The works have also revealed elements of the eighteenth-century Paterchurch Fort that formerly stood in the area of the wharf and slipways.

6.3 The naval dockyard is an important historic asset for the town of Pembroke Dock, being the reason that the settlement developed. The timber pond (which now survives below ground), the western and part of the eastern walls of the two slipways, and the Grade II* listed graving dock with its in-situ caisson, are now the only surviving historic elements of the site. As such, it is suggested that their preservation is important.

Figure 17: Satellite image showing the area of the former slipways and wharf on 13.06.2023. All that remains for demolition is the surface of Slipway 1. The infilled timber pond is visible in the bottom left corner. © Google Earth 2023.

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