

Forgotten Wrecks of the First World War



LED BY IWM

November 2015

Netley Pier

*Archaeological
Fieldwork Report*





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LOTTERY FUNDED LED BY **IWM**

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We would also like to thank the Archaeology Department at the University of Southampton for the lending of the RTK-GPS system for the duration of the main period of fieldwork at Netley Pier.

ii Copyright Statement

This report has been produced by the MAT with the assistance of funding provided by the Heritage Lottery Fund through their Heritage Grants Programme. Unless otherwise stated all images are copyright of the MAT. If copyright is unknown, this is indicated in the caption.

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1 Project Background

Forgotten Wrecks of the First World War (FWFWW) is a Heritage Lottery Funded project dedicated to raising the profile of a currently under-represented aspect of the First World War. While attention is often focused on the Western Front and major naval battles like Jutland, historic remains from the war lie, largely forgotten, in and around our seas, rivers and estuaries.

With over 1,000 wartime wrecks and hundreds of coastal sites along England's south coast alone, the conflict has left a rich heritage legacy and many associated stories of bravery and sacrifice. The underwater memorials represent the vestiges of a vital, yet little known, struggle that took place on a daily basis, just off our shores, while the coastal sites reflect the infrastructure to support the War at Sea and defend the country. The study and promotion of these archaeological sites presents a unique opportunity to better interpret them and improve physical and virtual access.

The project focuses on underwater and coastal sites from the Isle of Thanet in Kent, to beyond the Isles of Scilly, and over half way into the English Channel. The sites include merchant and naval ships, passenger, troop and hospital ships, U-boats, ports, wharfs, buildings and intertidal hulks. These sites, under water and on the foreshore, have been degrading and deteriorating due to natural and human processes for approximately 100 years and, as a result, are extremely fragile. In many cases, this project represents a final opportunity to record what remains on the seabed and foreshore before it is lost forever.

The project aims to characterise the nature and extent of the maritime First World War archaeological resource surviving on the south coast's seabed and around the coast. This will enable an understanding of the record of maritime activity created during the conflict and provide a window into some of the surviving sites. A representative sample of sites dating to the First World War along the south coast of England have been selected for more detailed study, analysis and interpretation.

With particular regard to coastal, rather than fully submerged archaeological remains, it has been noted in wider commentaries on England's coastal heritage (Murphy, 2014: 94) that there are relatively few surviving sites because of subsequent reuse and/or destruction during or following the Second World War. As a result, from the perspective of identifying coastal research priorities an emphasis has been placed (Murphy, 2014: 119) on the need to differentiate First World War sites from those of the Second World War. With all of this in mind, the following report addresses one of the coastal sites in use during the First World War.

This report, created as part of the FWFWW project, collates information collected during the project, relating to one of the south coast's First World War intertidal sites, in this case located at Netley Pier on Southampton Water (Figure 1). The following account provides a background to the history and geography of the site before outlining recent archaeological investigation undertaken through the FWFWW project. That work comprises an RTK-GPS survey of extant remains, in conjunction with fieldwalking across the main area of the site. The report constitutes one of the project outputs and will be lodged with the Archaeological Data Service, ensuring free public access beyond the life of the project.

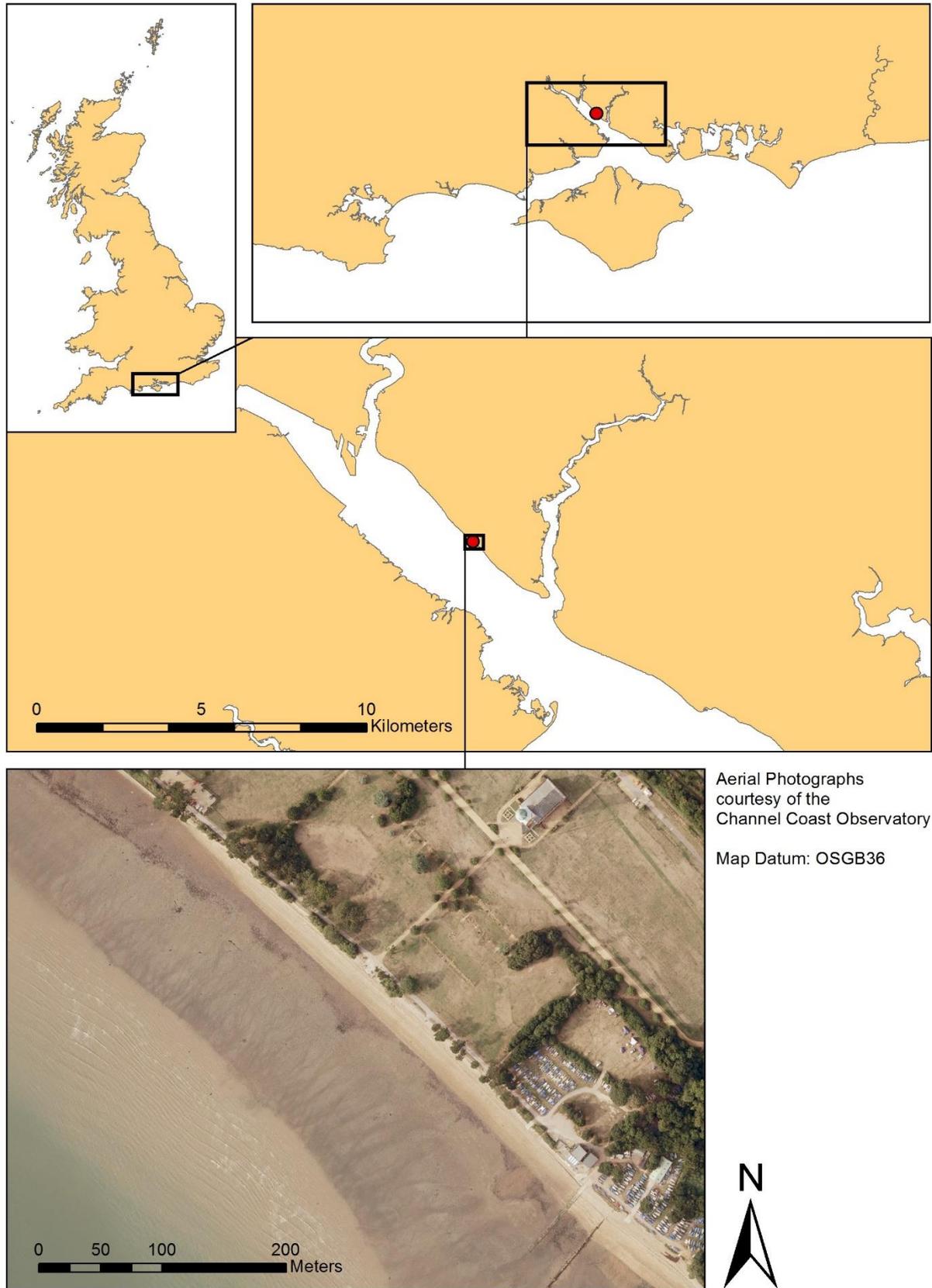


Figure 1. Location of Netley Pier on the eastern shore of Southampton Water.

2 Site Background and Context: Netley Pier

Netley Pier was chosen as one of the Forgotten Wrecks coastal case study sites as it represents a pier structure constructed for the dedicated role of serving the monumental, purpose-built, Royal Victoria Military Hospital. The hospital and its pier (Figure 2) were both in use prior to, throughout, and after, the First World War. Additionally, the relatively benign intertidal conditions afford the opportunity to use it as a volunteer training site.



Royal Victoria Hospital, Netley

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Figure 2. Postcard showing Royal Victoria Hospital and its pier at high water. The date is unknown, but the lack of a tented hospital to the rear of the main building indicates that it is not during either of the World Wars (copyright unknown).

2.1 Site History

Netley Pier forms part of the wider complex that was formerly the Royal Victoria Hospital¹; the majority of the main hospital building was demolished in the 1960s. The hospital itself was originally conceived, against the backdrop of the Crimean War, as the British Army's first purpose built hospital. The foundation stone was laid by Queen Victoria on 19th May 1856 and the Royal Victoria Hospital opened in March 1863. The building itself was huge, the longest building in the world when completed and housing 138 wards containing 1,000 beds. The corridors were so long that during American use of the building in the run-up to D-Day, troops reportedly drove their jeeps along them. Extended accounts of the hospital itself and of its railways in particular are provided by Hoare (2002) and Fairman (1984) respectively.

The hospital saw significant use during the Crimean War, and again during the First and Second World Wars. During the latter two conflicts an additional hutted complex was built to the rear of the main building to expand capacity to c. 2,500 beds (Fairman, 1984: 20). The site gradually fell in to disuse following the Second World War and the main building was closed in 1958. A significant fire damaged much of the building in 1963, leading to demolition in 1966 of all of the main building apart from the hospital chapel. The entire site was eventually re-opened as Royal Victoria Country Park in 1980.

¹ <http://www3.hants.gov.uk/countryside/rvcp/rvcp-seeanddo/history-rvcp.htm>
<http://list.historicengland.org.uk/resultsingle.aspx?uid=1001584>

The hospital pier itself (Figure 3) was opened in 1864/5, having been designed and constructed by Eugenius Birch, a noted Victorian pier engineer, and utilising cast-iron screwpile construction (Hoare, 2002: 115). It replaced the original temporary wooden pier known as the 'Queen's stairs' that was used by Queen Victoria when laying the foundation stone in 1856. The hospital pier was presumably intended as the point at which wounded troops could be disembarked from ships directly onto the hospital site. But, the pier was never built to the length required to reach the deep-water channel in Southampton Water and so transfer by smaller vessels of shallower draught was required (Fairman, 1984: 17). Hoare observes (2002: 115) that the pier was only ever built to half (560') the length originally planned. An original length of 1200' was reported by the *Hampshire Independent* in an article on the construction work at the hospital on 1st December 1860. The resulting transfer problem led to the construction of a purpose built vessel called the *Florence Nightingale* that could access the pier at low tide (Hoare, 2002: 115-6).

The patient-receiving function of the pier was largely superseded by the railway line that connected Netley to Southampton Docks in March 1866, and further extended to the hospital itself in April 1900 (Fairman, 1984: 30, 42). As a result, the pier seems to have assumed a role providing a recreational facility for the convalescing troops which echoed the Victorian fashion for seaside promenade, pleasure and health benefits (Hoare, 2002: 172-3). Such a use appears to have continued through the First World War (Figure 4) and inter-war period until the pier was 'severed' in the early 1940s to prevent its use in any Nazi invasion (Hoare, 2002: 270). The pier was demolished in 1955.

Within the wider history of the pier and the hospital just summarised, knowledge of its specific use during the First World War offers potential for future detailed historical research. Such research may focus on any detail surrounding the use of the pier itself, through to the wider location of the hospital and its relationship to the nearby port of Southampton, itself one of the main embarkation ports for troops travelling to France.



Figure 3. Historical postcard of Netley Pier, date unknown, showing a rare view of the pier as viewed from the shore, rather than looking towards the main hospital building. The cranes and boarding steps are visible at the pierhead, while in the distance a liner passes down Southampton Water.



Figure 4. Hospital patients convalescing on the pier during the First World War (Image copyright: Marion Ivey).

2.2 Geographical Context

Netley Pier is situated on the eastern shore of Southampton Water, Hampshire. The landward end of the pier is located at 50° 51' 54.3"N, 1° 20' 37.5"W (WGS84), E446279 N107492 (OSGB36). The foreshore at the site is aligned NW to SE and consists of an inclined shingle bank running from the mean high water (MHW) mark down to relatively flat estuarine mud which continues beyond the limit of the low tide. The archaeological remains are extant from the base of the shingle bank and extend seaward across the mudflats.

The sediment regime in the area of the site is well described within a study by the *Standing Conference on Problems Associated with the Coastline* (SCOPAC) and in general terms is driven by the tidal cycle prevalent in Southampton Water, described below. This results in bedload sediment transport in a south-easterly direction and suspended load longshore transport in a north-westerly direction, with an overall equilibrium between the two (SCOPAC, Southampton Water: 3). More widely, there has been ongoing erosion of intertidal mudflats reported around Southampton Water with quantified recession rates of 3.2m⁻¹ between 1870 and 1965 between the mouth of the River Itchen to the north and Hamble Point to the south (SCOPAC, Southampton Water: 2.3).

The tidal regime is complex, but typical for Southampton Water, comprising an initial flood stand lasting approximately two hours, followed by a normal flood, including high water stand of 5 hours, and finally a shorter ebb period of 5 hours (SCOPAC, Southampton Water: 1). The seaward extent of the site is situated at, or about, the limit of the low spring tides that were experienced on the 2nd September 2015 and which had a projected height of 0.4m OD. The mudflats at the site, the location of the main part of the site on these flats and the speed of the incoming tide dictates that the working window runs from one hour before low water to two hours after low water.

2.3 Research Questions

Prior to the Forgotten Wrecks project there is no indication of any archaeological investigation of Netley Pier having taken place. The majority of written sources, including those cited in Section 2.1

above, simply record the construction date, the fact that it was not long enough to reach the shipping channel, and its date of demolition. On the basis of the existing historical account of the site, in conjunction with an initial site visit, a number of research questions were developed in relation to the site.

- What is the spatial relationship between the iron pier opened in 1865 and the wooden pier reported as being present on the site prior to that?
- What is the extent of surviving elements of the iron pier used during the First World War?
- Is there any discernible relationship between the known historical use of the pier and any surviving archaeological remains located on the foreshore?

3 Fieldwork Methodology

The investigation of the Netley Pier site by the Forgotten Wrecks project involved three main phases of activity that are described below. In the first instance desk-based research (Section 3.1) was conducted including a review of available material such as historical mapping or modern aerial photos. This was followed by an initial site visit to establish the working parameters at the site and to check that the research questions developed during the desk-based assessment were valid.

The second phase (Section 3.2) comprised two days of survey at the site with the aim of recording the extant structural remains and gaining an understanding of surviving artefact distribution across the site. This was then followed by a final phase of post-fieldwork processing (Section 3.3) to correlate the recorded archaeological material with the existing desk-based information.

Desk-based assessment of the site was carried out in June 2015, followed by an initial site visit on the 16th June. This indicated that optimum work at the site could be carried out during a period of very low spring tides occurring in early September. Two periods of survey were then conducted on the 2nd and 3rd of September 2015 utilising a three hour tidal working window.

3.1 Desk Based Research

Desk-based research into the site was conducted prior to the initial site visit that was undertaken in June 2015. Further research was then done on the basis of that visit to help establish the research questions outlined above. Overall, this research drew upon the following sources;

- Historic Ordnance Survey mapping.
- Channel Coastal Observatory aerial photos.
- Existing historical accounts of the site.
- Available historical photographs.

3.2 Fieldwork Methodology

Overall, the FFWWW project site visits and fieldwork aim to:

- Provide opportunities for volunteers to access and take an active role in the recording and research of a range of different types of maritime First World War site.
- Record extant remains for heritage records.
- Record extant remains for public dissemination, enabling 'virtual' access for those not able to achieve physical access.

With these wider project aims in mind along with the research questions specifically identified for Netley Pier a fieldwork scheme was devised that incorporated the following elements:

- Recording of any extant iron and wooden pilings, along with any other significant remains, artefacts or similar using an RTK GPS, as a means to establish their locational relationship at the site.

- Application of gridded fieldwalking across the main debris field at the site to establish if any significant artefact distribution survives on the site and if this relates to any of the phases of use.

RTK-GPS Survey

RTK-GPS survey allows specific points, artefacts, or archaeological features to be positioned to a high degree of accuracy (+/- 10mm in optimum conditions). The system incorporates a GPS receiver which cross-references its location with land based stations, in this case mobile phone masts, to eliminate any residual GPS error. A Leica VIVA RTK-GPS, operating on the SmartNet system was lent to the project by the Archaeology Department at the University of Southampton. This allowed an on-site recording accuracy of +/- 10mm to be achieved and for data to be recorded directly into the British National Grid, simplifying subsequent post-fieldwork processing. The RTK-GPS system was used to record the locations of extant pier/jetty remains, the corners of the fieldwalking grids and the locations of the small number of recovered artefacts.

Gridded Fieldwalking

Gridded fieldwalking was undertaken across the main debris field at the site during two periods of survey on consecutive days. A baseline was established that ran along the central axis of the main iron pier, from which a grid of 10m² grids was set out. Grids were set out by volunteers and MAT staff using tape measures and the corners of each grid were recorded with the RTK-GPS. A total of twenty-one survey grids were set-out and walked during the work at the site. Three grids at the north-west end of the site were not walked because initial assessment of them indicated that they contained no archaeological material.

A single person worked in each grid and spent 15-20 minutes assessing the type and quantity of material present in each grid. Recording was done on a simple count basis as the recovery of a large quantity of material such as rubble, brick and slate was not desirable or practical. Each grid was given an individual ID and recording sheet with standardised types of material pre-listed, based on what was observed during the initial site visit conducted the previous June. Surveyors then simply had to record tallies of the quantity of each material type visible in their grid. All material was left undisturbed *in situ*, with the exception of a small number of potentially diagnostic artefacts that were recovered and catalogued for later study. The locations of the recovered artefacts was recorded with the RTK-GPS.

3.3 Data Processing and Management

Georeferenced sources consulted during the DBA phase were assembled into an ArcGIS file to allow them to be rationalised with one another and to allow the development of the map progression outlined below. Survey data from the RTK-GPS phase of the fieldwork was downloaded from the VIVA unit as a .txt file and imported into the site GIS file, from where it was converted to a shapefile and annotated with additional information as required.

Fieldwalking logsheets were scanned as .pdf files to create a permanent digital record of the work. The data from each sheet was added into the attribute table for the GIS shapefile relating to the fieldwalking grid squares. This created a record for each grid square that contained the quantities of each type of material remain observed within the grid square.

Recovered artefacts were assigned an individual project ID number and were recorded into an excel spreadsheet using the standard artefact recording form for the FWFWW project to allow subsequent logging within the overall FWFWW project database. *In situ* photographs of the artefacts were sorted and renamed according to the ID of the artefact that they represented. The same process was undertaken for notable structural remains that were recorded with the RTK-GPS and photographed during the survey.

4 Results & Interpretation

4.1 DBA & Historical Research

The Desk-Based Assessment (DBA) and historical research phase of investigation proved to be extremely helpful in establishing the overall disposition of structural remains at the site, as well as providing some indication of the likely changes to those remains over time. In general terms, historical mapping provided information relating to the overall extent of the site, while historical photographs allow an understanding of some of the construction details to be developed.

The earliest historic Ordnance Survey (OS) map of the area is the first edition OS map published in 1870 which shows the main hospital building but not the pier (Figure 5). Instead, a pair of wooden landing stages are shown on the foreshore in front of the hospital, one of which is directly adjacent to the location subsequently occupied by the pier, and a second a short distance to the northwest. Although the publication date of the map is 1870, the absence of the pier, despite its well documented completion in 1865 indicates that the actual OS survey for the area for the first edition was conducted prior to 1865.

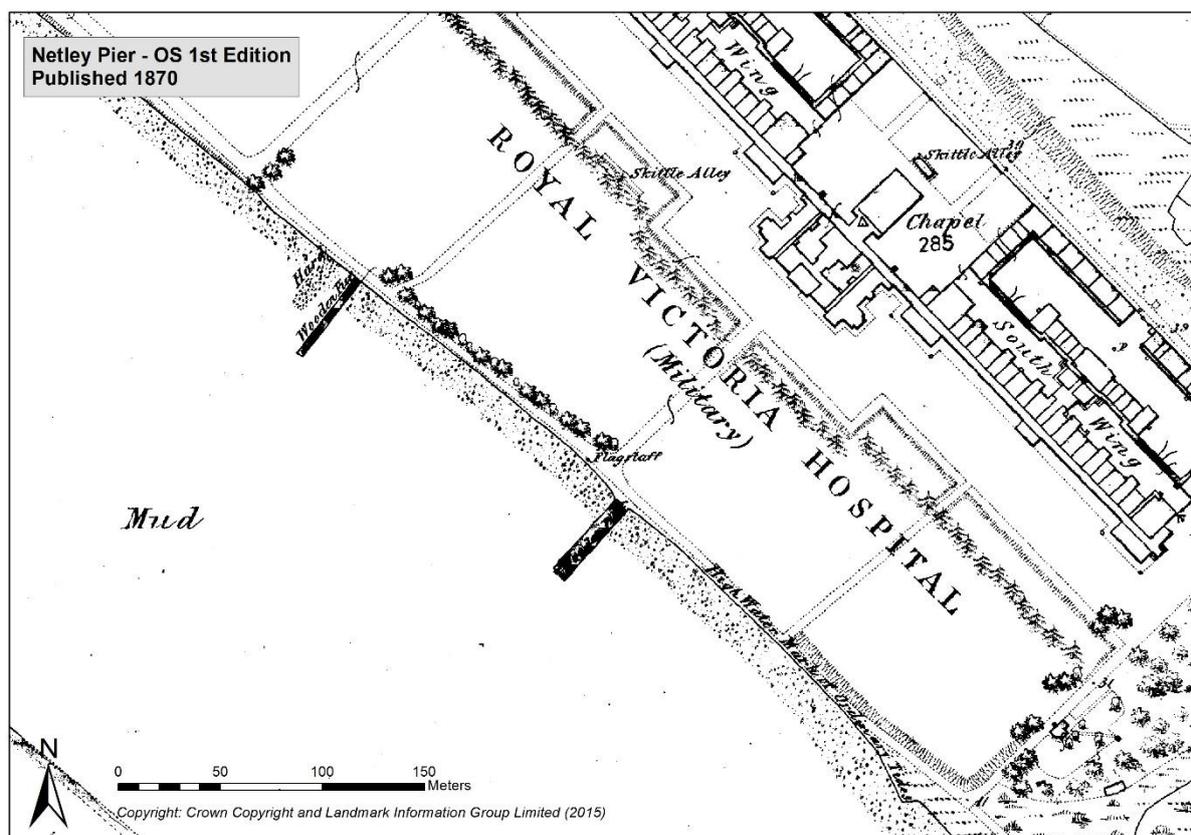


Figure 5. First Edition OS map, published in 1870, showing the wooden landing stages on the foreshore in front of the main hospital building (Copyright: Crown Copyright and Landmark Information Group 2015).

The following first revision to the OS mapping was published in 1898 (Figure 6) and illustrates the pier in its completed form which correlates with the available historical photos (e.g. Figure 2). The wooden landing stages shown in the 1870 map are now absent, presumably indicating their dismantling or destruction following the construction of the main pier. Measurements taken from the 1898 map illustrate that the pier was originally built to a total length of 572' (174m). The main walkway of the pier was 16.5' (5m) wide, finishing in a rectangular pierhead 94.5' (28.8m) in length and 38.5' (11.7m) in width, set perpendicular to the pier. A flight of steps along the north-eastern side of the pierhead, and a pair of cranes on the seaward side (the southwest) are also indicated. At one-third and two-thirds along the length of the pier were two rectangular bays set in-line with the main walkway and

measuring 42' (12.8m) long and 30' (9.1m) wide. Subsequent OS maps published in 1909 (2nd Revision) and 1939 (3rd Revision) show the same overall disposition to the pier.

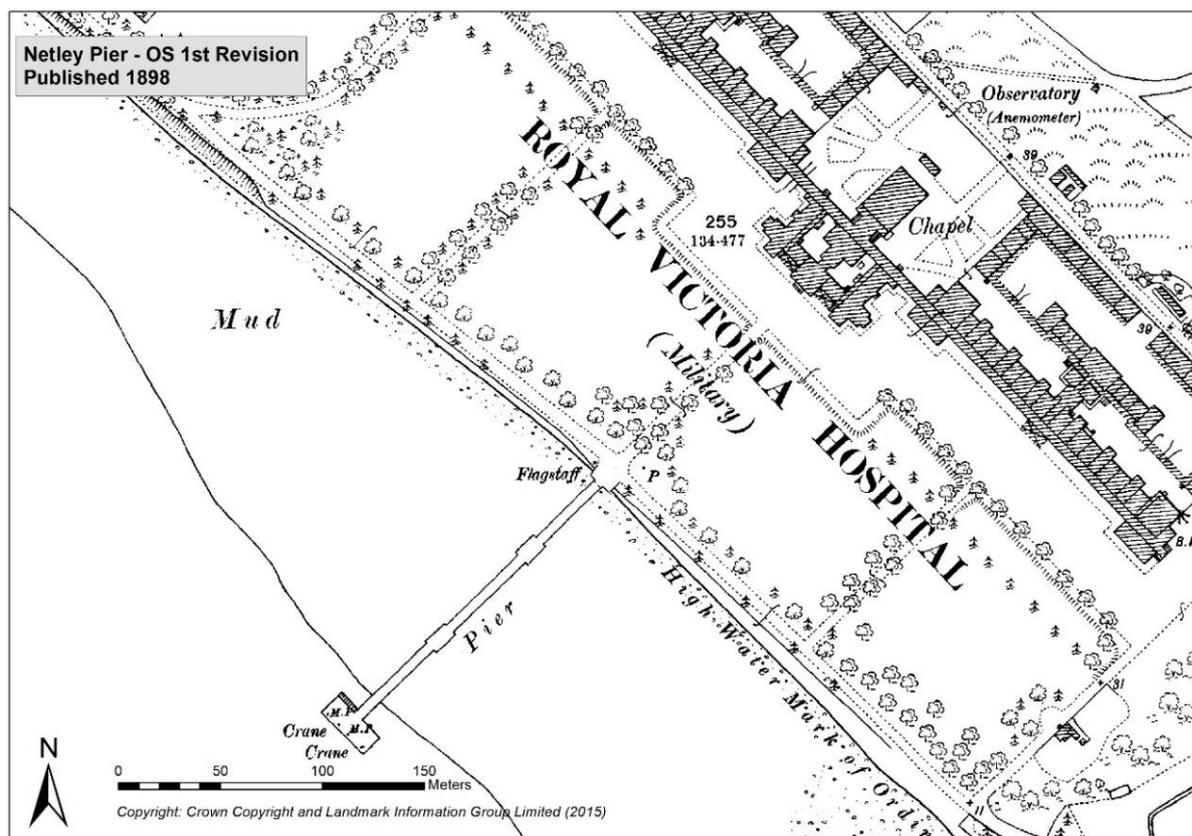


Figure 6. First Revision OS map, published in 1898, showing the disposition of the iron pier on the foreshore in front of the main hospital building (Copyright: Crown Copyright and Landmark Information Group 2015).

The overall nature of the construction can be discerned from historic photographs (e.g. Figure 3 and 4) which indicate that the main groups of iron piles, termed 'bents', were laterally placed in groups of three with additional diagonal cross-bracing running from the upper and lower ends of the outer piles, to the centre of the middle pile. The two rectangular bays were supported by an additional pile at each corner, making for a bent comprising five piles at the seaward and landward end of each bay. Photographs of troops convalescing on the pier during the First World War indicate a balustrade running around the edge of the pier, in-filled with diagonal cross-bracing and a small diagonal lattice work for further security.

The wooden planked deck of the pier's main walkway and bays is shown in images dating to the First World War as being diagonally laid at an angle of about 45 degrees to the central axis of the pier (Figure 4). The pierhead itself has deck planking laid in-line with the central axis. The diagonal decking of the main walkway can be identified as a replacement, given that in-line planking can be seen in an earlier photograph dating to the 1870s. On this basis at least one alteration/repair to the pier can be identified from the available historical photos in the form of replacement of in-line planking with diagonally laid planks on the main walkway by the time of the First World War.

4.2 RTK Survey

The RTK-GPS survey was successful in recording the locations of the extant structural remains relating to the main pier, and the earlier wooden landing stage identified during the DBA work. The locations of these features correlate to the outlines of both pier and wooden landing stage that were extracted from the historical mapping during the DBA work, as shown in Figure 7.

The Iron Pier

Elements of the iron pier, apparently retaining the alignment of the original structure were identified during the initial site visit and a correlation noted between them and the extant remains visible in the available aerial photographs. All of these features were recorded as part of the RTK-GPS survey as a means to confirm their location on the site.

Where recorded, the archaeological remains indicate the distribution of pile bents along the length of the pier on a centre-to-centre spacing of 39-40' (11.9-12.2m). In one location, surviving piles are located c. 50' (15.2m) apart, the position of these in relation to the OS record of the pier suggests that they are the centre piles located at either end of the seaward bay. This in turn may indicate that the actual length of the bays was c.50' rather than the 42' indicated on the OS map. The remains of one complete bent of three lateral piles (Figure 8), indicates spacing across the bent of c. 8' (2.4m) between piles. The latter measurement correlates well with the historically derived width of the pier of 16.5'.

An alignment of three plank ends were located and recorded in a location that corresponds with the northwest corner of Bay 1 of the pier. These measured 60-80mm in thickness and 240-270mm in width. The overall length of the planks could not be recorded because they were buried in the mud. No indication of the original function of the planks survived, but the most likely interpretation is that they represent deck planking from the main walkway that was cast into the mud during the demolition of the pier. Vertically set shuttering is a possibility, but no such shuttering is shown on any of the historic photos of the pier.

The most seaward pile recorded with the RTK-GPS was a single pile located on the northern side of the pier around 478' (145.7m) from the end of the pier entrance, as recorded by the OS. A further debris mound was located some 16m to the west of this and was also visible on modern aerial photographs. This debris is structurally solid, comprising ironwork and timber and its location suggests that it is the base of the steps that were originally situated on the north-eastern side of the pierhead. This feature lay at the extreme low water mark when surveyed and so no time was available to undertake detailed recording. Finally, a single pile top could be seen protruding from the water on an alignment with the central axis of the pier, but could not be reached, even at extreme low-water, because of the deteriorating nature of the mud underfoot and under water. That feature probably represents one of the piles supporting the seaward side of the pier head. Further investigation of the pierhead features, if a suitable point in the tidal cycle can be identified, would be helpful to confirm these existing observations. Similarly, the limits of the working window, in combination with other tasks dictated that detailed recording of individual iron elements was not possible and such recording would be a helpful future task to complete the archaeological record of the pier remains.

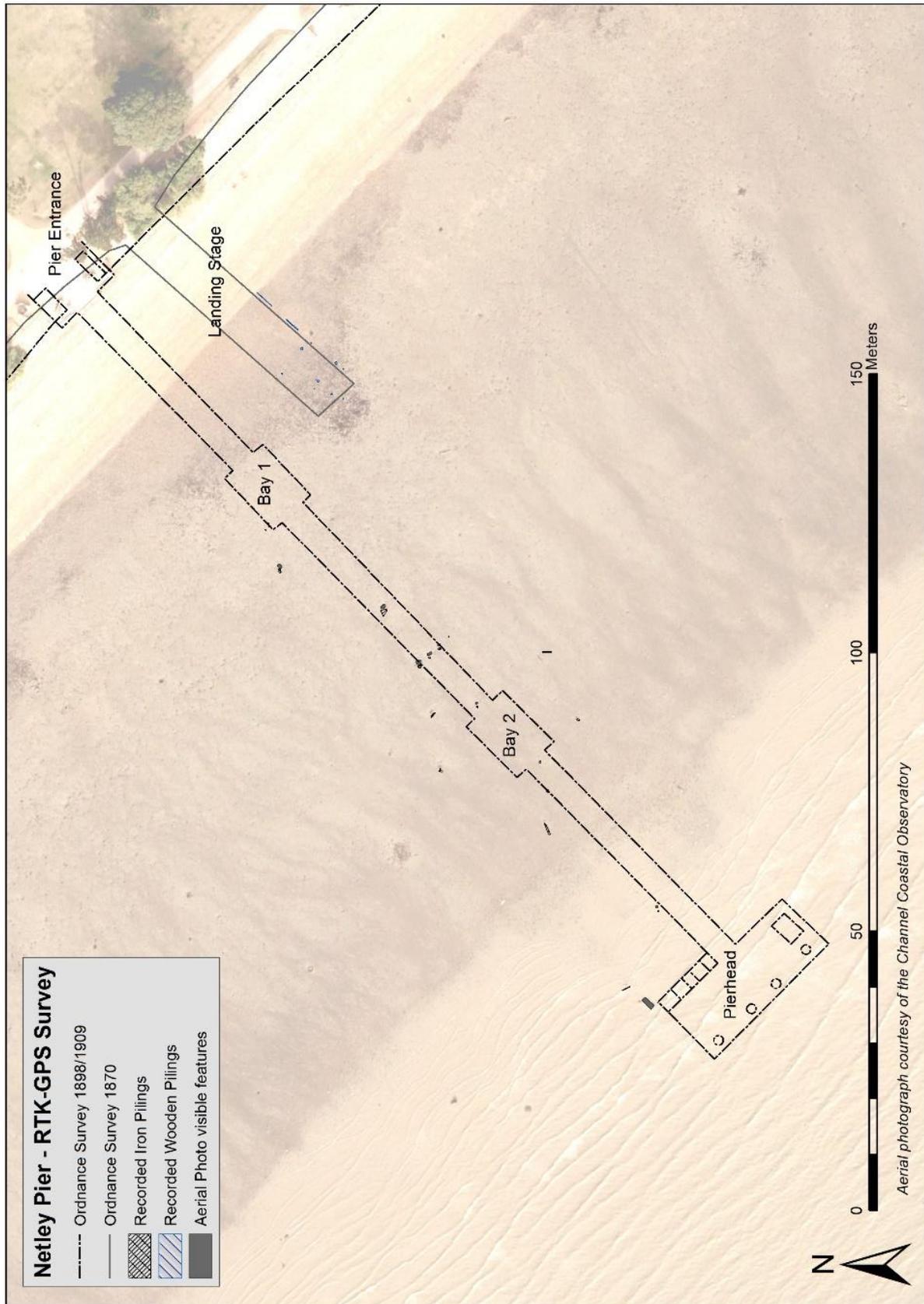


Figure 7. Combined RTK-GPS survey, historically derived disposition of structures and modern aerial photographs (Aerial photographs courtesy of the Channel Coastal Observatory).



Figure 8. View from the water's edge north-east towards the pier entrance along the central axis of the pier. A complete bent of pilings is visible in the foreground with a spacing of eight foot between piles.

Wooden Landing Stage

The remains of the wooden landing stage located adjacent to the main pier was identified during the initial site visit and the locations of timber piles and wooden shuttering recorded during subsequent fieldwork. In all, eight timber posts were identified that fell into two sizes. The three largest were circular and measured 390-440mm in diameter. The remainder were more irregular in form and ranged from a rectangular post 100x120mm to a circular post c.180mm in diameter. No overall pattern to the posts, either small or large can be readily discerned. In all cases they seem to have been cut off flush with the level of the foreshore and do not exhibit the tapered form associated with wooden posts that have degraded naturally in the intertidal zone.

In addition, two sets of planking set horizontally on edge, were located along the southeastern side of the remains. These are interpreted as some form of shuttering and measure 55mm in thickness, with lengths of 2.73m and 3.47m, the width was not possible to record due to being buried. The alignment of the shuttering corresponds with one of the large circular posts described above and also with the edge of the landing stage indicated on the 1870 OS map.

Those present, archaeologists and volunteers, felt that less material was located during survey work, than had been originally identified during the initial visit. Some of the surviving material located towards the base of the shingle bank may therefore have become obscured by sediment or shingle movement during the intervening period. Further investigation of this area of the wooden landing stage may therefore be a useful future objective to shed further light on the overall alignment of these remains. Likewise, some targeted investigation of the area of the second wooden landing stage to the northwest of the site would also be beneficial to establish any similarities in distribution, construction or material remains.

4.3 Gridded Fieldwalking

Fieldwalking was undertaken by volunteers across a total of twenty-one 10m² grid squares that straddled the main debris field identified during the initial site visit (Figure 9). The overall results for each material type within each grid square are provided in Table 1. A small number of artefacts were recovered as a result of the fieldwalking and these are presented and discussed in Section 4.4. As noted in Section 3.2 material was simply recorded by type, e.g. brick, rubble, slate, etc. It is possible to provide further information on what each of these material classes represents in the context of their presence on the site.

- Brick: Post-medieval building bricks, generally dark-orange or red in colour.
- Ceramic: Primarily comprising fragments of drainage/soil pipe.
- Glass: Bottle glass, generally broken bottle bases with no particular diagnostic features.
- Ironwork: Concreted iron fixtures and fittings that seem to relate to the iron pier.
- Rubble: General building rubble comprising concrete, stone, etc.
- Textile: Modern clothing.
- Tile: Building/roofing tile, generally dark-orange or red in colour.
- Wood: Fragmentary wooden remains, wooden pile tops and coherent planking elements.
- Clay Pipe: Fragmented remains of smoking pipe stems and/or bowls.
- Shell: Notable concentrations of shell other than those occurring naturally at the site.

Grid Number	Brick	Ceramic	Glass	Iron-work	Rubble	Textile	Tile	Wood	Slate	Clay Pipe	Shell
A1	5	0	0	0	3	0	0	0	0	0	11
A2	3	0	7	0	5	0	6	0	9	0	0
A3	14	2	3	1	3	0	0	2	0	0	1
A4	14	1	0	7	0	0	5	1	5	0	0
B12	9	1	2	0	4	0	0	0	2	0	0
B11	19	5	11	1	22	0	6	0	20	2	0
B1	2	0	0	1	0	0	0	0	0	0	0
B2	11	0	1	0	1	1	0	1	0	0	3
B3	5	2	2	0	0	0	1	3	3	2	0
B4	20	11	12	8	0	0	0	0	0	1	0
C12	6	1	0	4	25	0	6	0	0	0	0
C11	13	0	1	0	37	0	4	2	0	1	1
C1	8	1	0	1	21	0	0	0	5	2	0
C2	45	5	0	5	15	0	3	1	37	1	0
C3	71	0	6	5	19	0	4	3	70	1	0
C4	9	6	1	1	3	0	0	1	3	0	0
D11	8	2	0	3	2	0	0	2	1	0	0
D1	7	1	1	1	18	0	1	0	0	0	0
D2	18	4	2	3	14	0	2	0	26	4	0
D3	16	1	1	0	23	0	3	1	0	0	0
D4	5	2	0	0	1	0	0	0	4	1	0

Table 1. Results of overall gridded fieldwalking by material type for each grid.

In the majority of grid squares, very low levels of material were recorded, reflecting the initial impression of the site that only limited archaeological material remained. As a result of this, detailed statistical or graphical examination of the distribution of material is difficult because of the low numbers of many types of material class. But, some notable concentrations of brick, slate and general rubble identified, and these are illustrated in Figures 10 to 12. Of these, significant quantities of brick and slate were located at the southwest end of the wooden landing pier with a further smaller quantity to the northeast of Bay 1 on the iron pier. Both these locations, and the area between them also contained significant quantities of general building rubble that spreads across the southwestern side of the gridded area.

Although detailed interpretation of the fieldwalking results is problematic because of the small sample of material in some cases, there are overall trends present in some of the material. In particular, the

presence (noted above), of large quantities of brick, slate and general rubble slate in a discernible distribution is of interest and two possible scenarios may be considered for this material.

Firstly, that it was accidentally deposited during the construction phase of the hospital in the 1850/60s when the wooden landing stages may have been used to bring ashore construction material delivered to the site by water. This may be especially true for the brick and slate distribution, while the general building rubble could have been deliberately dumped across a wider area of foreshore as a means to provide an area of 'hard standing' for beaching and unloading vessels.

Secondly, material was deposited, through either accident or design, during the demolition of the hospital in the 1960s. This is potentially less likely given the obvious concentration of some material types in specific areas known to correlate with structures only present in the 19th century. Dumping associated with the demolition phase might be considered more likely to span across a wider area of foreshore to the north and south of the Netley Pier site than is presently the case. The presence of clay smoking pipes dating to the mid-19th century within the overall corpus of material lends further weight to the interpretation of material being deposited during the construction of the hospital in the 1850/60s, rather than during its later demolition. It is possible that further archaeological investigation of the location of the wooden landing stage site to the northwest, in conjunction with archival research focussing on the construction/demolition logistics may further inform this interpretation.

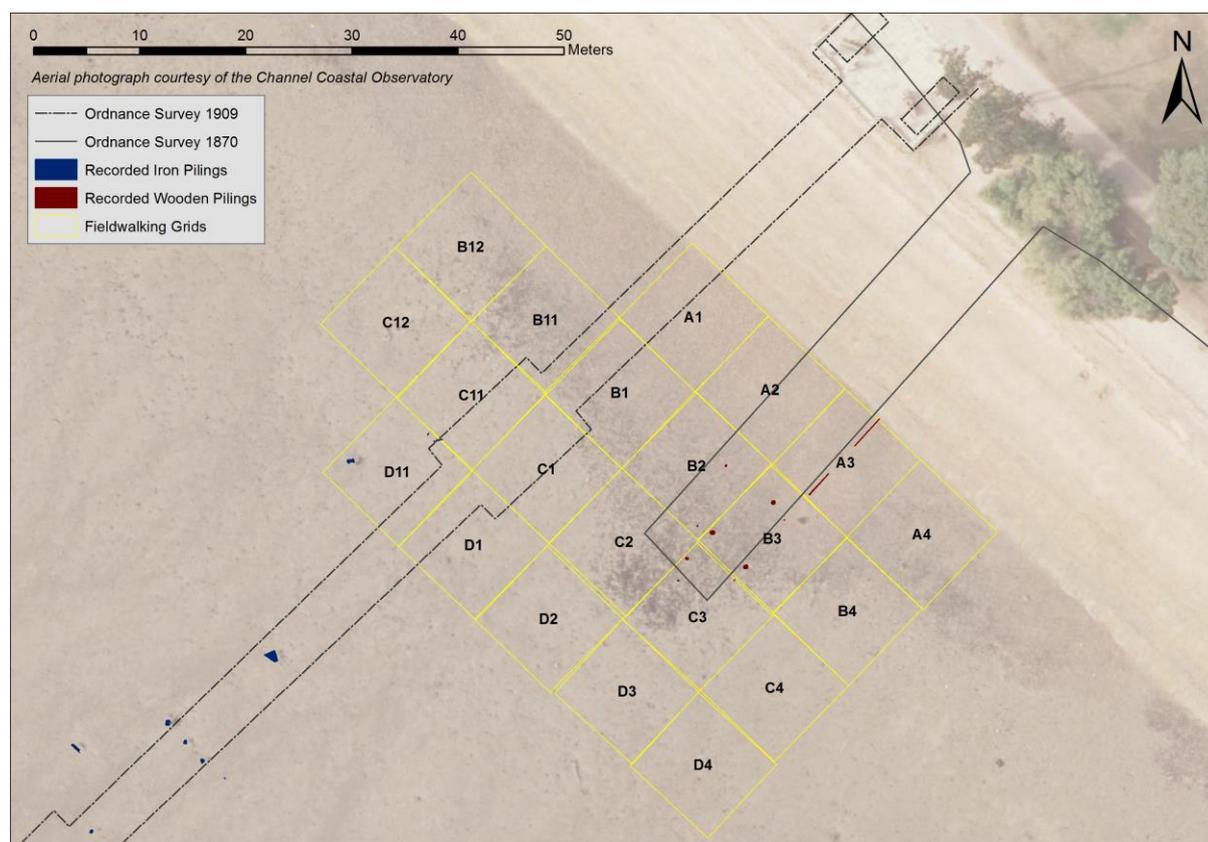


Figure 9. Distribution of fieldwalking grids across the site. Grid IDs are given in the centre of each grid square.

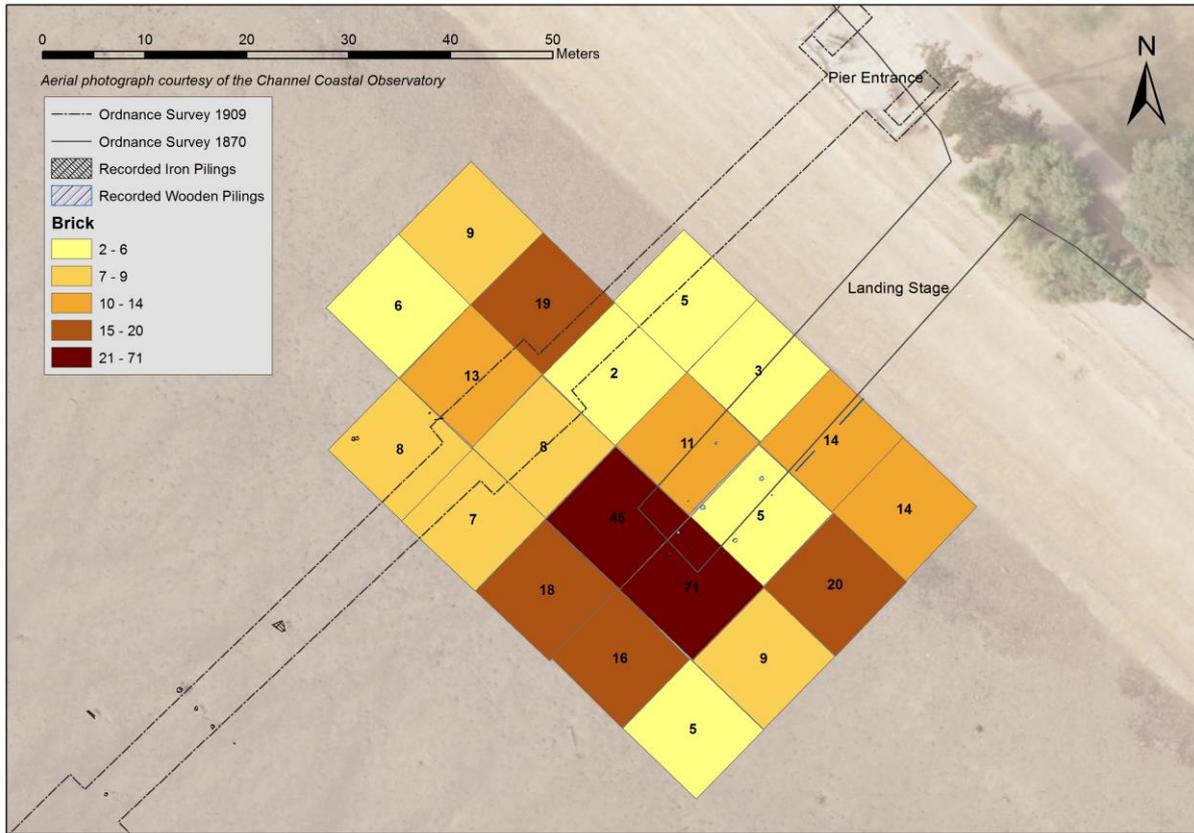


Figure 10. Recorded distribution of brick across the site.

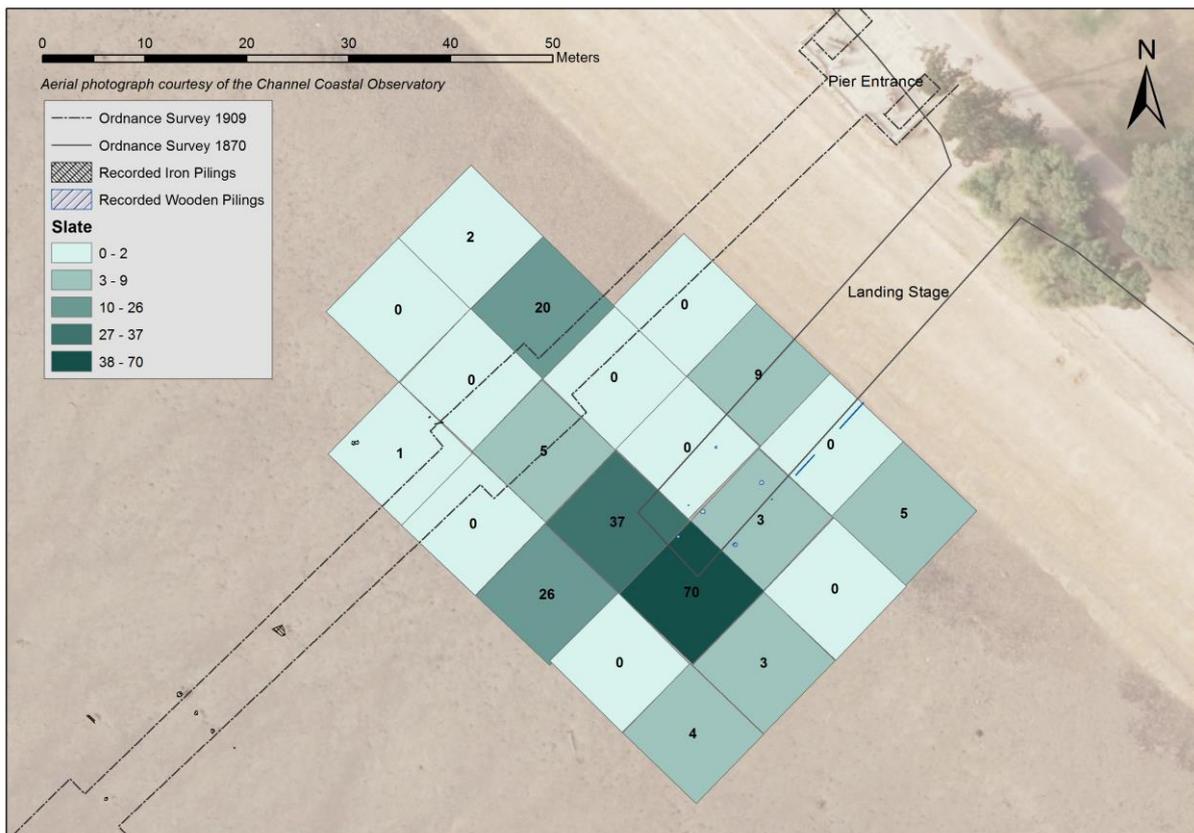


Figure 11. Recorded distribution of slate across the site.

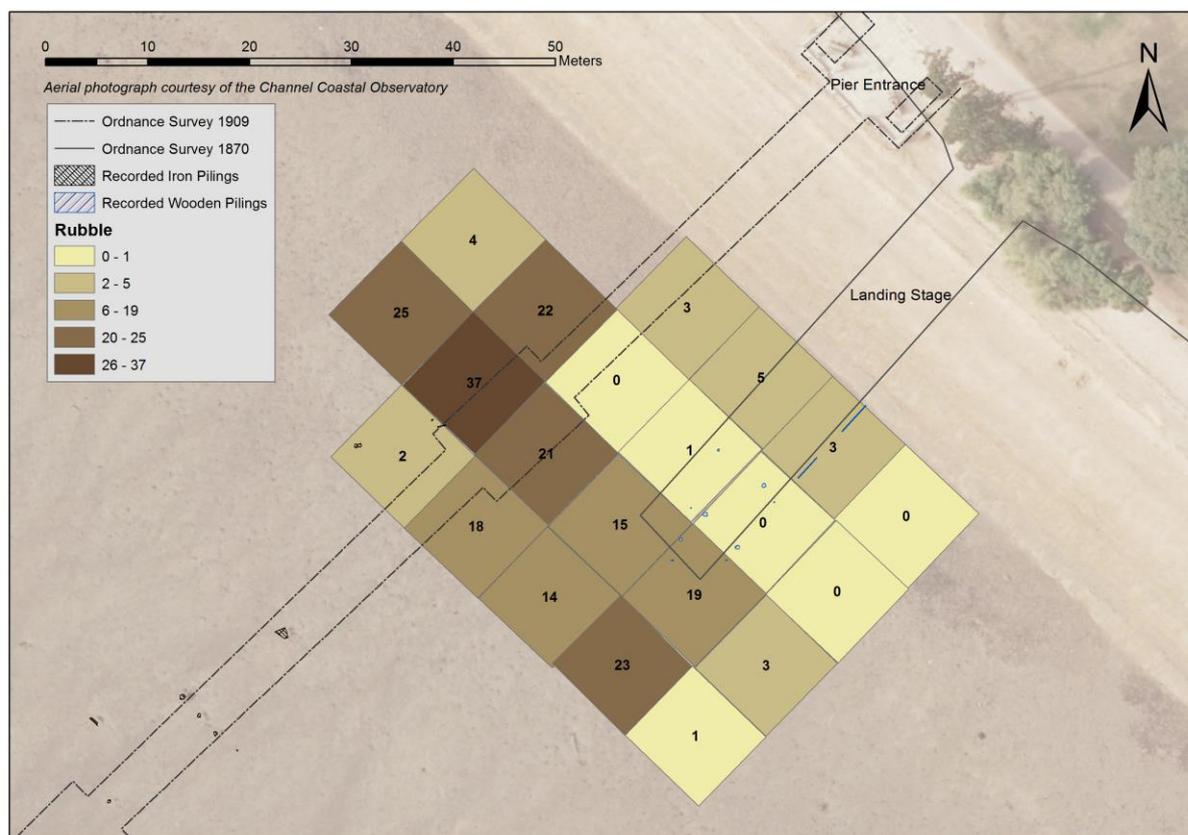


Figure 12. Recorded distribution of rubble across the site.

4.4 Recovered Artefact assemblage

Although the original research questions did not require, or indeed entail any artefact recovery, a small number of artefacts were recovered because of their potential to further the archaeological understanding of the site. In total ten artefacts were retained as a result of fieldwalking, primarily comprising clay-pipe stems and two complete pipe-bowls, but also two iron fastenings, a porcelain sherd and a brass sheave. A summary of these artefacts is provided in Table 2.

Of the recovered artefacts, three are potentially diagnostic; the two smoking-pipe bowls and the brass sheave. The latter (FWNP008, Figure 13) is stamped with a broad arrow indicative of ownership by the Crown and/or British military, including institutions such as the Royal Navy, War Department, etc. and it is also marked with its diameter in inches ($3\frac{3}{8}$). The date of the sheave cannot be securely placed on this information alone, but it is certainly compatible with the construction and use of the hospital and pier from the mid-19th century onwards. Likewise, its broad arrow stamp correlates with the military origins of Royal Victoria Hospital. Potentially, the sheave could originate from one of the cranes located at the pierhead, but its small, mobile nature means that this is far from certain.

The two smoking-pipe bowls offer contrasting potential dates. The older of the two (FWNP007, Figure 14) is of conventional clay manufacture with a bowl shape fitting the period 1820-1850 as set out by Noël Hume (2001: 303) in relation to English clay tobacco pipes. The mould-lines on the pipe-bowl are obscured by two runs of oak leaf decoration which, along with the bowl shape, have parallels in the 1850s (e.g. Beckey, 2014: fig. 2, nos 3-7). The shape of the pipe bowl and its decoration are therefore both compatible with a date during the initial construction of the hospital and pier during the 1850s and early 1860s.



Figure 13. Brass sheave (pulley wheel) stamped with a broad arrow and diameter markings.



Figure 14. Clay smoking pipe bowl and partial stem, possibly discarded during the construction phase of the hospital and pier. Oak leaf decoration is visible on the outer side of the bowl, running between the bowl rim and the pipe heel.

The other smoking-pipe bowl (FWNP002) is much harder to place. It is not made of clay but appears to have been carved from a mineral before polishing. It has a well-rounded symmetrical bowl, but lacks the heel normally seen on clay pipes, e.g. FWNP007. Some linear decoration or writing survives down the left of the pipe, but is too degraded to decipher. On balance it seems most likely to be a Meerschaum pipe, and as such carries a possible date between the increase in popularity of such pipes in the 1840s and their decline in favour of briar pipes in the early 1900s. The overall form of the pipe, with its slightly rounded bowl, is comparable to unadorned briar pipes from the early 20th century including those given as gifts to troops in the First World War (see White, 2011: 104).

Tentative conclusions may therefore be offered that the clay smoking-pipe fragments relate to the initial construction phase of the hospital and pier in the 1850s and early 1860s. Meanwhile, the probable Meerschaum pipe may offer some material evidence for the use of the pier during the early part of the 20th century and potentially during the First World War. Further investigation of precise parallels with FWNP002 may serve to confirm, or refute this conclusion.

ID	Description	Length mm	Width mm	Height mm	Material (Primary)	Notes
FWNP001	Large, nail-shaped iron object.	200	15-20		Iron	
FWNP002	Smoking-pipe, comprising bowl and part of stem.	102	32	43		Carved from mineral & polished? unreadable line of design/inscription on left side.
FWNP003	Part of smoking-pipe stem.	54	14-7		Clay (or bone?)	Stem tapers from 9 mm at bowl end to 7mm. 1mm bore (blocked).
FWNP004	Part of smoking-pipe stem.	68	7-6		Clay (or bone?)	1mm bore.
FWNP005	Part of smoking-pipe stem.	45	7-6		Clay (or bone?)	1mm bore.
FWNP006	Part of smoking-pipe stem.	53	7		Clay (or bone?)	
FWNP007	Smoking –pipe bowl and stem.	135	20	35	Clay (or bone?)	http://www.cafg.net/docs/articles/ClayPipes.pdf . Note leaf design on front & rear of bowl.
FWNP008	Pulley wheel.	87 (dia.)	26 (thick)	18 (hole)	Copper alloy	Stamped with Broad Arrow Marked '3 3/8', which equates to diameter inches.
FWNP009	Nail, curved.	107	6		?	Lightweight. Curved having been extracted?
FWNP010	Shard of pottery - bowl(?) - including part of rim.	56	11 (thick)	40	Clay	Transfer-printed blue design - blackberry/bunch of grapes?

Table 2. Summary of artefacts recovered as a result of fieldwalking at Netley Pier.

5 Discussion

Although little of the original iron pier is superficially visible at the site, the results of the fieldwork indicate that a discernible set of remains are still preserved *in situ*. Furthermore, the disposition of the recorded remains, primarily in the form of pier bents and scattered piles, offers a minor correction to the available information recorded in the historic OC maps. All of the extant elements of the iron pier, including the pier entrance, would benefit from individual detailed survey to allow specific features to be recorded. This may allow subsequent comparison with other surviving examples of Eugenius Birch's piers, or with historical plans/documents of the same. Similarly elements of the wooden landing stage that occupied the site prior to the construction of the iron pier are still *in situ*, although the distribution of those remains is currently less well understood and would benefit from additional work.

Fieldwalking at the site was also instructive as a means to further the understanding of this type of open foreshore site in general and Netley Pier in particular. The potential presence of remains from the original construction of the hospital in a fairly coherent distribution, correlating with the original

wooden landing stage serves to highlight the spatial distribution that can survive at such site-types over relatively long periods of time. Such an observation is reinforced by the presence of contemporary artefacts such as smoking-pipe bowls, despite their small nature and relatively high potential mobility, as well as more immobile items in the form of brick and slate. By contrast, the subsequent use of the iron pier for recreation by convalescing soldiers appears to have left much less of an archaeological footprint, despite its visibility in such a role within the historical source material.

As the FWFWW project progresses, and elements of the future research (below) are completed then it may well be possible to elaborate further on a number of these points. Additionally, results from the wider project will be able to be considered as a means to set Netley Pier against the wider context of other piers, jetties and landing stages from the period.

On the basis of the results and interpretation described in Section 4, a number of additional research actions/questions can be identified that can be addressed through continued archaeological/historical investigation of Netley Pier. These can be defined as;

- Detailed recording of extant in-situ iron elements and the investigation of the relationship between these remains and to any historical plans of Eugenius Birch's screwpile systems, or wider pier components.
- Further investigation of wooden landing stages adjacent to the iron pier, and located a short distance to the north.
- Recording of the extant seaward elevation of the pier entrance.
- Continued historical research into the role of the pier within the hospital facility and of the hospital's relationship with the port of Southampton.
- Further historical research into the building/demolition process of the hospital as a means to increase understanding of the nature/distribution of archaeological remains present on the foreshore.

6 Conclusion

Overall, the FWFWW fieldwork at Netley Pier was concerned with providing opportunities for volunteer engagement with the archaeological remains of a First World War intertidal site, while at the same time attempting to expand the archaeological understanding of that site. In both cases the fieldwork was successful. Effective survey, recording and post-fieldwork processing was undertaken by a mixed team of archaeologists and volunteers working together in a coordinated fashion. Public access to the archaeological remains of the site is being continually enhanced through the fieldwork and related dissemination through the wider FWW project. The latter includes the permanent lodging of all reports and related digital archive material with the Archaeological Data Service, from where it will be freely available to the public. Similar dissemination of reports is also being undertaken through the MAT website and through circulation to locally interested people and organisations, such as the Royal Victoria Country Park.

The information produced as a result of this work has expanded the existing understanding of the archaeological remains of Netley Pier and how they relate to the initial construction of the Royal Victoria Hospital and the subsequent use of the pier during the First World War. Critical to this understanding has been the combined use of archaeological and historical source material as a means to reach the most complete picture possible. But, the investigation of the site is not complete and a number of additional research objectives have been identified that should be pursued in the future to further enhance the potential for public appreciation of the site, while developing the archaeological skillset of the volunteers involved in investigating the site.

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8. Appendices

8.1 Netley Pier archive generated by the HLF Forgotten Wrecks project

Fieldwork at Netley Pier resulted in the creation of a new archive of material relating to the archaeological investigation of the site. This contents of this archive is summarised below:

Record Type	Sub type	Number	Notes
Paper	Field Survey Record Sheet	2	
	Gridded fieldwalking log	21	
Digital	Images – fieldwork (.jpg)	197	
	Images – artefact (.jpg)	543	Includes 3D modelling photos
	Images – report (.jpg)	14	
	GIS Shapefiles (.shp)	12	
	ArcMap Document (.mxd)	2	Site and wider location GIS
	PDF		1
	docx	1	Report basic format
	Agisoft 3D Model	2	Pulley & pipe bowl

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- Promote archaeological awareness and competence.
- Promote public awareness, enjoyment, education and participation in the maritime archaeological heritage.
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- Liaise with other regional, national and international organisations involved in maritime archaeology and related disciplines.
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Images (top to bottom): Diving on the Gallia as part of the Forgotten Wrecks project, disseminating maritime archaeology to the next generation, the extensive intertidal zone of the western Solent, the Discovery Bus visiting the SeaCity Museum in Southampton.

