The magnificent former Royal Naval Academy, Portsmouth – our letter to the MoD refers sadly to ‘immediate risk of further rapid deterioration or loss of fabric; no action agreed’ (AC 2011). See the lead article on our campaign on page 2.

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Doing Nothing Not an Option! Urgent Remedial Action sought for Portsmouth Dockyard Buildings at Risk

Following Committee discussions, the Society wrote on 17 February 2017 to Second Sea Lord and Deputy Chief of Naval Staff Vice AdmiralJonathan Woodcock OBE, Portsmouth Naval Base Commander Commodore Jeremy Rigby and Portsmouth City Council Planning Department, calling urgently for new solutions for the following Portsmouth Dockyard Buildings at Risk:

- 2–8 The Parade
- Former Royal Naval Academy
- Iron and Brass Foundry east wing: Gunnery Gear Store and Pattern Shop
- No. 6 Dock
- No. 25 Store
- Portsmouth Pay Office
- Portsmouth Block Mills
- Remaining railway track


The NDS urged that ‘Doing nothing is no longer an option.’ We proposed that ‘new and appropriate uses’ be found for this community heritage, so that ‘operational budgets also finance conservation’. It recommended that with the disposal of HMS Nelson wardroom announced by Defence Minister Mark Lancaster, 18 January 2016 (https://www.gov.uk/government/news/defence-minister-mark-lancaster-announces-release-of-mod-sites-for-development), ‘the former Royal Naval Academy and The Parade would be logical replacements, their refurbishment meeting naval ethos, conservation and operational requirements.’

The letter described defects of The Parade, listed on the Heritage at Risk Registers since 2008, and those of the Former Royal Naval Academy listed since 2011. The condition of The Parade in 2011 became PRIORITY: A (A): ‘A repairs schedule promised by May 2009 has not been circulated.’ (p. 73). In 2016 this text was repeated (p. 67) (https://content.historicengland.org.uk/images-books/publications/har-2016-registers/se-har-register2016.pdf/).

The NDS called for a MoD Conservation Group or a Heritage Partnership Agreement to be set up by 2018 and a cultural collaboration of stakeholders to set up such a Group or Agreement to ‘resolve reported inconsistencies, deliver sustainable solutions creatively and accomplish what has not been achieved by the MoD in Portsmouth Dockyard in the last ten years.’ The letter was copied to over fifty organisations and the Portsmouth News, which gave the topic a magnificent printed four-page-spread plus online coverage on 7 March (http://www.portsmouth.co.uk/our-region/portsmouth/action-is-needed-to-save-historic-portsmouth-naval-base-buildings-from-rotting-1-7853533).

Vice Admiral Jonathan Woodcock replied on 27 February that the Defence Infrastructure Organisation (DIO) would respond in more detail, but that ‘we are looking at how best to optimise our estate and where possible to bring historic buildings back into use, the Old Naval Academy is an example where I expect to see future investment.’

Furthermore, DIO responded on 19 April: ‘We . . . value your collaboration in seeking the best outcomes for the naval heritage estate and . . . will be in contact to continue this dialogue.’

We have received many positive responses. Hampshire Buildings Preservation Trust, for example, issued a supportive press release on 14 March.

* For complete text of our letter see our website https://navaldockyardssociety.files.wordpress.com/2017/02/letter-to-mod-portsmouth-dockyard-buildings-at-risk.pdf
The next move is to set up a site visit with Portsmouth City Council, Historic England, MoD and interested stakeholders. Watch this space!

Dr Ann Coats, 25 April 2017

Notes From The Editor

Welcome to Dockyards and I hope you find something of interest.

A recurring theme in this issue is the continued viable use of dockyard buildings to give them not only life and purpose but also funding in the difficult world we live in. Heritage Lottery Fund money has been raised for the Fitted Rigging House (see page 7) and for Fort Amherst at Chatham (page 5) and as we go to press has just been announced as successful at the former Dockyard Church. A church of similar design at Pembroke Dock has been restored from a similarly semi-derelict state and is now used as a heritage centre. In Malta dockyard buildings are being converted for university use. Unfortunately elsewhere, notably in Portsmouth and Sheerness, dockyard buildings have been neglected by owners who cannot find a use for them.

At Pembroke Dock, it was good to hear unconfirmed reports that the Defensible Barracks were being converted for use as residential and holiday let units but the future of the Captain Superintendent’s House, following a fire, is still uncertain. The lively Pembroke Dock Heritage Centre runs from the old Dockyard Church and we were glad to hear Michael Palin had enjoyed a visit recently while researching the history of HMS Erebus, newly rediscovered, launched at Pembroke Dock in 1826 and part of the ill-fated Franklin expedition. Pembroke Dock was an important base for flying boats and it was good to hear of a new Sunderland model and also a replica cockpit on display – see http://www.sunderlandtrust.com/.

I recently enjoyed a behind-the-scenes tour of the twenty square miles of ranges at Lydd, Kent, used at times over its 150-year history for naval gunnery practice. The high explosive Lyddite widely used by naval and other artillery in the Boer War and First World War was developed there from 1888.

A recent visit to Sheerness revealed that the old Military Hospital, although saved from demolition, still faces an uncertain future with the adjacent steel mill being demolished and associated development. Perhaps a viable use would be as the port offices for its owners Peel Ports? There is no longer any public access to the working port at Sheerness, not even minibus tours.

The Crossrail exhibition at the Museum of Docklands is well worth a visit, displaying finds unearthed in archaeological digs on the sites of the line and stations. See http://www.museumoflondon.org.uk/museum-london-docklands/whats-on/exhibitions/tunnel-archaeology-crossrail. Of particular interest to readers may be the exhibits from the site of Thames Iron Works, major shipbuilders on the Thames from 1837 to 1912. HMS Warrior, for example, was built there. A rather good book on
the Thames Iron Works has been written for the exhibition.* Another interesting item related to the reopening of the previously derelict Victorian Connaught tunnel; work on this involved the draining of 13m litres from the Royal Docks – see http://www.crossrail.co.uk/news/articles/restoration-of-derelict-victorian-rail-tunnel-complete. Entry to the exhibition is free and it is open until 3 September. The Museum itself is well worth a visit, and is housed in the elegant and airy No. 1 Warehouse built in 1802. Sadly it will shortly be overshadowed by a residential block, to be the tallest in Europe!

All contributions, however big or small are most welcome and I always enjoy hearing from readers. (All photos in this issue are mine unless otherwise stated.)

Richard Holme
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DATES FOR THE DIARY

2 September 2017
Sheerness Walk – incorporating tours of two officers’ house, including Justin Webb’s house in Naval Terrace (see the article on page 9)

24 March 2018
AGM and Conference, National Maritime Museum, Greenwich
Dockyards: The End of the First World War and Interwar Retrenchment

Meet the Committee – Richard Holme

Richard lives in Tunbridge Wells and this is his eighth issue as editor. At pains to point out he is an enthusiast among a society of experts, Richard travelled to the Falklands nine times between 1990 and 2001 to help their Taxation Office and Treasury and took the opportunity to view some of the wrecks and hulks situated around Stanley harbour, as well as relics of the 1914 naval battle. On one visit, he was able to stop en route at Punta Arenas, Chile, to view the three sailing-ship hulks there, all in a day’s work! A highlight was accompanying Stanley Museum curator John Smith, who gave a talk to the military at the Mount Pleasant military base: no PowerPoint or slides but you could have heard a pin drop in his brilliant ninety-minute talk on Falkland maritime history before the long drive back to Stanley. A regular visit was made in the lunch hour to the Egeria, or to be more precise the stern half of this nineteenth-century New Brunswick vessel sill used as a hulk by the Falkland

Islands Company. On another occasion, Richard and an associate were banned by the Stanley harbourmaster from clambering on the hulk of the iron barque *Lady Elizabeth* built in Sunderland in 1879.

Richard wrote a history of Cairnryan Military Port which was published in 1997.* Built during the Second World War, the port was used subsequently for U-boat scuttling, ammunition dumping and extensive shipbreaking (e.g. HMS *Ark Royal* from 1980). Cairnryan was owned in the 1960s by the Pounds organisation of Portsmouth and Richard has written an unpublished history of Pounds with the help of the family. He has a special interest in the dockyard at Sheerness. He played a role in many of the abortive attempts to save HMS *Plymouth*.

Richard retired from his work as an accountant in May 2017 and will have more time for historical research; he has signed up for a Masters in the Marine Technology department at Newcastle University, focusing on post-1945 UK shipbreaking. He is a trustee of the Canterbury Cathedral Trust and of the Finchcocks Trust for Musical Education. Besides being editor of *Dockyards*, Richard helps to run our Facebook page and has recently become Secretary.

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**Interesting Visit to Fort Amherst**

Fort Amherst forms a major part of the Chatham Lines, built from 1756 to protect Chatham Dockyard from landward incursions. I was glad to join a group of fellow SPAB members on a tour on 2 April 2017. We were very fortunate to be taken to the ‘unrestored areas’, not normally open to the public, and to hear more about the successful £1.8m Heritage Lottery Fund bid.

We started at the gatehouse and moved through some of the extensive tunnels. The whole area is in fact a honeycomb of tunnels in the chalk, some not yet rediscovered as they are bricked up and occasionally the land collapses. Among other uses, the tunnels enabled troops to move quickly and safely between certain key strategic points. The army left the site in the 1960s and since the Fort Amherst Heritage Trust took over in 1983 they have done a marvellous job in restoring much of the twenty-two-acre site and opening it to the public. Details on [http://fortamherst.com/](http://fortamherst.com/).

The Heritage Lottery Fund grant will enable extensive further works to be carried out between 2018 and 2020, this has been termed the ‘Command of the Heights’ project. A new entrance will be created, the Spur Battery restored and a 250-seat amphitheatre built, giving a centre for outdoor performing arts for the community. Most interestingly to me the defensive Barrier Ditch will be opened down to the Medway as it was historically through *inter alia* demolition of a twentieth-century building, ‘Riverside One’. More details on the HLF project and the building work envisaged can be found on [http://fortamherst.com/index.php/about/hlf](http://fortamherst.com/index.php/about/hlf).

View from the ramparts down to the Medway and the magazine.

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* Cairnryan Military Port 1940/95: From U Boats to the Ark Royal (GC Books, 1997).
We were told that the Fort was a belated response to the Dutch raid of 1667 and much of the old town of Chatham had to be demolished to make way for it! One remnant is the parish church. We gathered from our guide that the Fort was almost obsolete by the time it was completed and was used mainly for training for siege practice. There are stunning views from the top of the Fort, emphasizing the commanding position that it enjoyed. We then visited the main magazine, which held a thousand gunpowder barrels and on which restoration work was only completed in 2011. Moving on to the unrestored area, we walked through the wonderful brickwork of a two-storey barrack block dating from the early nineteenth century. The block was heavily damaged in explosion exercises in c. 1948 and is to be restored as part of the HLF project. Then we saw the ‘sunken garden’, the site of allotments for the garrison in Victorian times. Sadly this area suffers from some vandalism despite the best efforts of the Trust.

After the visit, I tried to trace the remainder of the Chatham Lines and visited the Chatham Naval Memorial, which has also been vandalized recently. A great afternoon at the Fort and highly recommended, very near the Chatham Historic Dockyard of course.

Richard Holme

New Exhibit at Gosport Diving Museum

John Deane’s pioneering diving helmet, on loan from the Science Museum, was unveiled in a specially secure case at Gosport’s Diving Museum on 7 April 2017 – a considerable coup for a small museum run by volunteers. Perhaps inspired by the building of the Thames tunnel at Rotherhithe using diving bells, Charles Deane, a ship’s caulker in Deptford, and his younger brother John worked together in 1827–8 to adapt Charles’s smoke helmet to build a successful diving helmet. Their original diving equipment consisted of a pump, a waterproof suit using the newly patented ‘Macintosh’ material, and a beaten copper and leather helmet with two viewing ports. It was called an ‘open’ helmet because it was open at the bottom. The water level was kept below the top of the diving dress by the pressure of air pumped down from the surface. The Deanes conducted trials in Croydon Canal and ‘after a long series of experiments,
vast study and labour [the invention] was brought to full perfection in 1828’ (John Deane). It was first used in 1829 to salvage the cargo from an East Indiaman, *Carn Brea Castle*, which had been driven ashore on the south coast of the Isle of Wight. The Deanes were commissioned by Lloyd’s of London to salvage the cargo, which they did successfully. This brought the brothers to Portsmouth Harbour, where they discovered several naval wrecks. John Deane moved with his family to Gosport, and in his time there he discovered the wreck of the *Mary Rose*. Two of the cannons he raised are in the museum. The Royal Engineers swiftly adapted the Deanes’ diving equipment and before long their invention had spread around the world. John Deane later excelled himself as a clearance diver in the Crimea. He died in Ramsgate at the age of eighty-four. His brother Charles, probably disillusioned by being unable to reap greater recognition and rewards for this invention, committed suicide at the age of fifty-two.

*Celia Clark*

**Note by editor** – if like me you were unaware of this interesting museum, details can be found on [http://www.thehds.com/museum](http://www.thehds.com/museum).

### ‘Not Flashy but Solid and Reliable’ – the Fitted Rigging House

Visitors to Chatham Historic Dockyard will know the Fitted Rigging House (‘FRH’) on Anchor Wharf as a truly massive brick Georgian building (1793), which with the adjacent Ropery and Storehouse 3 forms an outstanding group of related eighteenth-century brick structures. The FRH served as a storehouse and accommodation for dockyard riggers to make warships’ standing rigging. Grade I listed and situated on the river front, its 9,000 square metres of floorspace are not fully used at the moment as although ‘it has played a vital role at the site for over 200 years . . . currently its potential is not being fully capitalised on due to its sheer size and complexity’.*

* Stuart McLeod, Head of HLF South East Press release 19.1.17 (the quote in the heading is his words too).
1930 aerial view with *inter alia* the new FRH roof highlighted. To right is the Gun Wharf with magnificent buildings notably the Grand Store and Carriage Shed sadly demolished in the 1960s.

The project to restore the FRH and make it available for commercial use as a rental property will cost £8m. In January 2017, there was excellent news of a grant of £4.812m from the Heritage Lottery Fund to supplement £1.5m from the Department for Culture, Media and Sport. There will also be a volunteer centre and better access to the Chatham Historic Dockyard Trust (CHDT) archive and library. Minor changes to the ‘Steam, Steel and Submarines’ gallery are planned but Chatham Dockyard Historical Society’s area remains untouched. The FRH project is part of the Trust’s plan to make the Dockyard sustainable in financial terms. This seems to me an admirable project helping to keep another historic building alive and sustainable economically for many years to come.

Separately, readers may have noted the Historic Dockyard’s new modern visitor entrance facility tucked in between two listed buildings (Mast Houses/Mould Loft and Wheelwrights’ Shop) and filling a gap between them that had been there since the 1790s and possibly long before that. Although coloured black as opposed to the whitewashed older buildings, I think it blends in well and offers additional facilities. What do you think? It was opened in May 2016 as part of the ‘Command of the Oceans’ project.

Richard Holme (with acknowledgements to Clive Stanley)

**Another Interesting Exhibition In Norfolk**

Olive Edis (1876–1955) was the first female war photographer, and the biggest collection of her work is to be found at Cromer Museum in Norfolk, which purchased it in 2008. The museum is housed in Victorian fishermen’s cottages and is well worth a visit. Olive’s work embraces very clear pictures of Cromer fishermen and other maritime subjects, although she is perhaps best known for her photography of the First World War and its aftermath. Olive used natural light and shade very well to get excellent results. Curator Alistair Murphy has catalogued Olive’s work and this can be seen at http://norfolkmuseumscollections.org/#!/collections/search?tag=Edis.
A much-lauded exhibition of Olive’s work is travelling around various museums in Norfolk until September 2018; details can be found at http://www.museums.norfolk.gov.uk/.

Pictured below are Cromer fishermen Jimmy ‘Buttons’ Harrison (1909) and John Cox (c. 1910). Alistair Murphy refers to the fishermen’s ‘natural reticence and no nonsense exteriors’ concealing a ‘gentler true character’. Pictures are courtesy of Cromer Museum (Norfolk Museums Service).

Sheerness, a Georgian Dockyard

Sheerness lies on a spit at the mouth of two rivers, the Medway and the Thames. Just off its shores is the Great Nore anchorage, which has been used for centuries as a mooring for ships preparing passage up to London. Its position has been both an advantage and a disadvantage; James I had hulks placed at what is now known as Sheerness to help protect the mouth of the Medway, and on 18 August 1665 Charles II, accompanied by the Duke of York, Bernard de Gomme and Samuel Pepys, laid out the first dockyard there. The fort was complete but lacking munitions when on 10 June 1667 eighty ships carrying some eight hundred men sacked it, in what has become known as the Dutch Raid. It soon became apparent how vulnerable and strategically advantageous Sheerness was, with its ability to survey the passage up to Chatham where the Royal Fleet lay, and the capital, up the Thames.

By the end of the Napoleonic Wars there were some thousand warships laid up and in need of constant repair. Something also had to be done with the dilapidated Thames and Medway dockyards. Sheerness was by then no more than a few disease-ridden hulks, timber-sided basins and a few small jetties. With its deep-water channel and the ability to take the more modern larger men-of-war, it became the site of an entirely new dockyard.
Works commenced in 1815 with Lord Melville laying the first stone. John Rennie was appointed engineer; the architect was Edward Holl, and on his death in 1824 George Ledwell Taylor. The construction contract was given to E. W. Banks, and the project was not to exceed £3m. Sheerness, being one of the most exposed of the Royal Dockyards, required considerable sea defences, and Rennie employed the system he had pioneered in 1797 at Grimsby, whereby the foundations were piled and the sea defences were hollow to stop such weight sinking in the soft sub-soil. This piling system was also used for all the buildings at the dockyard. To enable the contractors and the Navy Board to comprehend how it would be undertaken, a model of the dockyard was created to a scale of 1:60. Erected on iron stands, it shows each element of the construction together with its foundation piles. This model is now in the care of English Heritage. In 1819, at the ceremony of the laying of the first stone of the dry docks, the magnitude of the project, together with the fact that everything had to be imported to the site, was commented upon in The Times.

Here on this very spot where we now stand, but few months since oozed the soft mud of Sheppey, unequal to the burden of man; and we now tread it, a firm and solid foundation: and if we think how this foundation has been formed – first, by importing whole forests from Oxfordshire, Berkshire, and the surrounding counties, transposing their once towering tops to a depth of 40 feet below the surface of the earth; next covering their upset ends with fields of brick from Essex, and binders of timber from Russia; surmounting the whole with quarries of granite from Scotland, Cornwall and Yorkshire we must consider the ponderous prospect before us with astonishment . . .

This was a mammoth undertaking, and the only British dockyard to be built as one complete project. Chatham, its neighbour, was developed and added to when additional buildings were required. Sheerness by contrast is a conceptualized whole.

A second problem the Admiralty suffered was staffing. It was one of the most remote of all the dockyards and was not an ideal place to live. The Isle of Sheppey had no bridge until 1868 so everything had to be shipped in and out. Malaria was rife, as were cholera and dysentery. An officer looking for a position would not have considered Sheerness had it not been for the accommodation, which was intended as a benefit to the post. A selection of houses was designed by Holl and Taylor. There were two mansions, Admiralty House, conceived for William IV prior to his ascension as Duke of Clarence and Lord High Admiral, and the Captain Superintendent’s house. There were two terraces, one inside the curtilage wall for the senior officers and one outside the wall for the inferior officers. To differentiate between the two terraces, the senior houses were built to the contemporary Regency design, with ground-floor reception rooms and bedrooms above, and were five bays wide. The lesser officers had the older eighteenth-century design with a first-floor drawing room and were only two or three bays wide. The garden lengths also varied. The senior houses at Dockyard Terrace had two-hundred-foot gardens with a large carriage house, while the inferior officers at Naval Terrace had only one-hundred-foot gardens and a carriage house. It would seem that even then the snobbery was apparent as R. G. Hobbes, an officer at the docks in 1860, remarks on the coveted nature of the inner houses.
An Official Residence within the Yard was now assigned to me, and on the 9th June I took possession of the same. These residences were objects of much jealousy. Mine was certainly a pleasant one, spacious and comfortable. There is no privilege, however, without its drawback, and in this case it was so; for my house was coveted and claimed by another officer, and it cost me a considerable amount of trouble to vindicate and sustain my right to it!

Although designed as inferior houses, Naval Terrace has a setting that many Georgian townhouses lack. Situated outside the curtilage wall it was conceived as a classic Georgian square, with the terrace and church to one side, matching barracks to the other two and high railings to the fourth. In centre, two acres of formal planting frame the entrance to the dockyard. It must have seemed quite alien to the people in the adjoining Bluetown, whose houses were built with scraps pilfered from the Dockyard, with small courtyards, and scant sanitation. These majestic houses gleaming yellow with their neat tuck pointing in their elegant setting proclaimed the might and majesty of the Navy.

As with most public buildings, the houses were intended to last. Rather than the shoddy construction methods employed by London’s speculative builders, the houses were over-engineered, with quality bricks used throughout the whole depth of the walls, and gauged work of the finest quality. Internally each house was provided with a fine staircase, either dogleg in Dockyard Terrace, or in Naval Terrace an open well top-lit by a skylight. They had simple stick balusters, with Cuban mahogany handrails. The design of the open-well staircases at the centre of the houses in Naval Terrace is unique, its only comparison being to Wapping Pier Head in London’s Docklands built a few years earlier, which might suggest that Taylor, as Architect to the Navy Board, knew of them, and incorporated the design into Naval Terrace.

Due to the nature of the site, the early years saw all resources provided for the occupants. Hobbes writes that on acquiring the house you signed for your furniture and had coal provided, as well as servants. Both terraces were built with beautiful fitted furniture, including bookcases and pot cupboards in the reception rooms and linen presses in the bedrooms, all of which survive to this day. This facilitates the house detective in the original function of each room, as its fitted furniture dictated this.

Throughout the past hundred and eighty years the houses have served their original purpose. During wartime both terraces acted as accommodation for the WRNS, and then when the Royal Dockyard closed in 1962 and became a commercial dock, the houses were offered as rented accommodation to the dockyard workers. Since the loss of the Admiralty, the houses have suffered at the hands of commercialism. The garden walls and coach houses of Dockyard Terrace were removed to make way for parking, and recently the church suffered a disastrous fire, leaving it now rather sad and roofless. In 1996 Naval Terrace was sold off, and now fortunately is in private hands. Still in use as houses, their tenanted life has been their saviour, as all retain their original fittings, their internal cupboards, doors, coving and plasterwork, even the original crown window glass. Dockyard Terrace was converted into flats in the 1970s with three horizontal conversions per house, with the ability to easily convert back. At the turn of this century, the maintenance of the buildings inside
the wall became too great, and the dockyard sold the whole site, comprising Dockyard Terrace, the Captain Superintendent’s mansion, a further house and two of the main gate buildings together with all of the land to the rear. Unsympathetic proposals from developers were successfully fought off by a small band of local enthusiasts with a particular contribution from Ms Cresswell and the Naval Dockyards Society, before the Spitalfields Trust became involved. A well-organized group from London, with a history of taking on such difficult projects, quickly mobilized and acquired the site. Now in the process of being restored, these grand historic houses look certain to have a new lease of life.

A similar fate had been proposed with regard to the Dockyard Church. Like all on the site, its Grade II* listing had protected it from demolition, but the application for thirty or more flats in its interior, and another terrace in its grounds, would seem far too many for such a size of building. Once again the Spitalfields Trust became involved with a local group to acquire the building. Subsequently this too is in the process of HLF applications to be restored, and is now owned and managed by Sheerness Dockyard Preservation Trust.

Sheerness is a changing place, with the new bridge enabling access by dual carriageway to the motorways, and both the Continent and London within easy reach. The newer residents of Naval and Dockyard Terraces show that these houses are desired as houses rather than flats, and that new life can be breathed into these wonderful buildings. One of the nation’s favourite paintings is Turner’s *Fighting Temeraire*; not many know that it is from Sheerness that she is being towed by the belching tug. Let us not set the sun on Sheerness, but treat it as another dawn.

Justin Webb – a resident of Naval Terrace and trustee of the Sheerness Dockyard Preservation Trust

Note by editor

I was pleased in April 2017 to visit Justin’s house in Naval Terrace which has been lovingly restored since he acquired it in 2001. Despite being an ‘inferior’ house, as Justin happily details above these are superb properties and as Pevsner notes, one could be in Woburn Square. Most of the fitted furniture is *in situ* and now in excellent condition and there is a lovely view at the back over the garden and the rest of the Georgian quarter. The coach houses for Naval Terrace were added a little time after the houses and did not benefit from the piling noted by Justin so have subsided to a tiny and yet picturesque extent. I was pleased to hear that Justin’s application to convert his coach house for ancillary residential use had been approved by the local authority. It will involve no exterior alteration and what is left (very little) of the original interior will be conserved. A viable use for a dockyard building, essential these days wherever possible.

**RN Ordnance Depot Chattenden and Lodge Hill**

By the mid-nineteenth century the demand for shells, mines and torpedoes for the expanding Royal Navy’s Chatham Dockyard and its outlying defences had outgrown the existing facilities of the Board of Ordnance Depot on the opposite bank of the Medway at Upnor on the Hoo Peninsula. In 1871 a committee was formed by order of the Inspector General of Fortification to report on a site for a proposed new magazine for the Medway District. The decision was taken to build a new storage compound to hold 40,000 barrels of gunpowder further inland on Hoo at nearby Chattenden. It was proposed to construct five magazines for 8,000 barrels each, and that the barrels would be placed in stacks four barrels wide and nine high, increased to twelve high in emergencies.

The magazines were completed in June 1875 by convict labour and were set into a traversed hillside, which caused slippages during construction. The magazines were connected to the Chattenden Barracks, which had been completed in 1872 to provide accommodation for eight officers and 120 soldiers to guard the compound, by a railway which ran south to Upnor. This was originally a standard-gauge line to transport building materials for the construction of the new magazines and barracks from the wharf at Upnor. By the 1880s the standard-gauge line was abandoned and the tracks lifted to be replaced with a 2ft 6in narrow-gauge line to transport munitions. This line became known as the Chattenden & Upnor Railway. A tramway was also constructed, which ran eastwards to Hoo Creek.
In 1891 the Admiralty took over the responsibility for supplying armaments to the fleet from the War Office. However, the Army retained the magazines at Chattenden, together with the railway line, for its own use and the Navy once again found itself short of accommodation for its own armaments. The Admiralty formed a committee to consider options for alternative magazine sites. Following the submission of several reports, in 1898 the decision was taken to purchase 500 acres of land at Lodge Hill, adjacent to the Chattenden compound, from the War Office for £16,000. Plans were drawn up to build two cordite magazines, each of 40,000 cubic feet, three explosive stores of 40,000 cubic feet, one dry cotton store, two examining rooms and one deposit magazine. By 1904 five cordite magazines had been completed, as had a guncotton store, the deposit magazine for explosives received from ships and three explosive stores.

In 1901 authorization was given to build the Chattenden Naval Tramway to connect the Lodge Hill Magazines to the ‘Hundred of Hoo’ Line at Sharnal Street. In 1903 the Admiralty took over the older Chattenden Magazine Enclosure and in 1906 it also took over control of the Chattenden & Upnor Railway from the Army.

By 1909 a laboratory site had been added to the Lodge Hill Depot. The laboratory workrooms were arranged in three sets, each set comprising one cordite cutting room, three cartridge filling rooms and one packing room (fifteen buildings in all), connected to each other, to a transfer shed at each end of laboratory site and to two expense magazines on the south-west side by a ‘clean’ wooden platform 18in from the ground. A railway of 1ft 6in gauge ran on the platform for carrying work to and from the workrooms and transfer sheds, where it was shifted to powder trucks of 2ft 6in gauge for conveyance to the magazines.

Main West gate and Cartridge Store no. 4.
By 1912 the threat of war with Germany and the probability of raids by Zeppelin airships resulted in the construction of some of Britain's first anti-aircraft gun batteries, to protect the Ordnance Depots at Chattenden and Lodge Hill. The battery sites were comprised of concrete gun emplacements and blockhouses.

During the First World War a new large shell store was constructed at Lodge Hill with an available capacity of 265,299 cubic feet, and a number of extensions were made to the laboratory. In 1915 the Chattenden Naval Tramway was extended from Sharnal Street to Kingsnorth to serve a new munitions factory and airship station there.

After the war new magazines were built underground to counter the threat of attack from the air. The exposed position of Lodge Hill was a worry, and in 1938 at the height of the Munich Crisis large amounts of ammunition were moved from naval armament depots to disused railway sidings in the West Country, Wales and Scotland. This operation was repeated following the eventual outbreak of the Second World War in 1939.

Following the fall of France in the summer of 1940, Chattenden and Lodge Hill came under the defence plans for the Hoo Sector of the GHQ Line of anti-invasion defences. A line of pillboxes and anti-tank obstacles was constructed to defend the depot from an enemy advance across the Hoo Peninsula.

After the Second World War the site continued to be used to store ammunition but in 1961 instructions were given to dispose of it by December 1961 after it was decided to abandon a proposal that it would be retained by the Admiralty and used by NATO forces. At the eleventh hour the War Department decided that it wanted to take it over for training purposes. However, the railway and tramway were not required and all operations ceased on both on 31 December 1961. The tracks were eventually lifted and some of the trackbeds were turned into roadways.

By then the 1872 barracks had also been demolished to be replaced the following year by a new barracks for the use of the Royal School of Military Engineering based at Brompton. The area now became a major training ground for the Royal Engineers. In 1966 new buildings were constructed on a site opposite the Lodge Hill Depot to house offices, stores and workshops for the HQ Bomb Disposal Unit, as well as classrooms, demonstration halls and training areas for the Joint Services Bomb Disposal School. This new site became known as Lodge Hill Camp and later became the Defence Explosive Ordnance Disposal School (DEODS), which included a Naval Training Facility dealing with underwater ordnance.

Chattenden and Lodge Hill Training Areas continued to be used into the twenty-first century, preparing personnel for active service in Iraq and Afghanistan, but Chattenden Barracks were closed and demolished in 2005. In 2007 the MOD designated the Military Land at Chattenden and Lodge Hill suitable for disposal and re-development for residential and light industrial use. In 2013 the DEODS moved to a new facility at Bicester and Lodge Hill Camp was closed.

At the time of writing (22 December 2016) the Chattenden and Lodge Hill sites are still awaiting development.
Malta – Some Interesting News

We were glad to hear from Conrad Thake that currently works are progressing well on converting the former British period and Knights warehouses of Number One dock into the premises of the new American University of Malta. Celia Clark remarked on this interesting conversion in our last issue.

Conrad has also kindly sent in some historical information about the Somerset Dock, inaugurated in 1871, a plan from his personal collection showing the location of the dock, an engraving in the Illustrated London News and an albumen photograph of the commemoration of the completion of the Somerset Dock in 1871. Somerset Dock is still in use as part of a privatized shipyard run by Palumbo.
Dredging for the Supercarriers

Royal Navy presentation

I was glad to attend a very interesting talk by Captain Bill Oliphant, Captain of HM Naval Base Portsmouth, on 14 December 2016 in Cathedral House, Old Portsmouth. The genesis of the Royal Navy’s two huge supercarriers was in 1997, eight days after Tony Blair’s new government published the Defence Review. As ‘Assets of Strategic Value’ at 65,000 tons (compared with the biggest: USS Nimitz: 90,000 tons), they are longer than the Houses of Parliament and taller than Niagara Falls, with eight acres of deck with forty assault craft. They are being constructed on a modular basis – including Portsmouth-built sections – and assembled in Rosyth by the Aircraft Carrier Alliance (www.aircraftcarrieralliance.co.uk), which embraces the MOD and a number of commercial firms. The ship’s company for HMS Queen Elizabeth moved in in January 2017 and set sail in March for sea trials and to test equipment: the ‘System of Systems’.

Ten to twelve years ago two major naval bases were considered, the Clyde where the nuclear submarines are based and Plymouth, while Portsmouth would cease to be an operating base. A further study led to the decision that the ships would be based at Portsmouth. MOD investment in resources at Portsmouth base makes it secure for fifty years, and possibly more. The preparation includes new jetties, last constructed for 1920s battleships, which have to be strengthened because when the ships’ huge sides catch the wind they push onto the jetty. The North Corner of the naval base is a centre of excellence for the Queen Elizabeth class of carriers, Queen Elizabeth (expected to arrive in Portsmouth in September 2017) and Prince of Wales. For security, they will be moored at a restricted berth, for which passes will be required with logistics support.

The width of the current channel is being doubled to provide a turning arc. Spoil removed and surveyed revealed 3,000 objects of interest! It started on 15 November 2016 and two days later a huge German mine was found, the largest object, but not in the survey (see below). Work stopped on the new contract dredgers. They have already cleared 7,000 items so far . . . Tudor cannons, old cannon balls, lengths of cables, coils of wire, shopping trolleys, bicycles . . . gun batteries along the front which were used for training. Portsmouth was a major target for the German air force in the Second World War. On 6 December 1940 there was a heavy raid on the naval base that sank a ship. This raid was the subject of discussion with the old German pilots, who dropped their bombs over Portsmouth, which was a secondary target to get rid of the bombs they couldn’t drop on the dockyard. The channel and harbour are being dredged and extra fendering put in. Most objects were inert but 250 high explosives were found, including a torpedo which has been donated to the naval museum. The warhead was towed to the Solent to be disposed of. Tiger Tiger party venue customers didn’t really like the closure!

UXBs

The talk was very interesting and informative and reminded us that physical reminders of Portsmouth Harbour’s strategic past are not always benign. Its military and naval history suddenly came into sharp focus on 16 November 2016 when a dredging barge preparing the deep channel required for the carriers uncovered an unexploded 500lb German Second World War bomb. A 500-metre cordon was thrown around it, which meant that the Historic Dockyard, the most popular tourist attraction on the south coast, had to be completely evacuated, along with the shoppers in Gunwharf Quays – as well as the residents of Gunwharf and Old Portsmouth – while the bomb was taken out to sea twelve hours after it was found for a controlled detonation off the Isle of Wight. On Christmas Day 2016 the historic district of the city of Augsburg was also evacuated – on discovery of a 1.8 ton unexploded Allied bomb. More German bombs have been found in Portsmouth Harbour. On 22 February 2017, another 500-pounder was found. Rail, ferry and bus services were all suspended, while divers from the Royal Navy’s Portsmouth based Southern Diving Unit 2 towed the bomb away from the harbour, lowered it to the seabed, and planted explosive charges for a controlled detonation of the device. Shortly after 11am, it was destroyed in a plume of smoke and spray. The entrance to Portsmouth Harbour was closed stopping cross-Channel ferry services until around 7:30am as
a precaution while the bomb disposal team assessed the swiftest and safest way of removing the
device. Some transport services were temporarily suspended, including Gosport Ferry and WightLink
services, and Gunwharf Quays was momentarily closed. (http://teamlocals.co.uk/royal-navy-detone-wwii-bomb-found-portsmouth-harbour/ accessed 24 February 2017)

Celia Clark

Work continues at Rosyth

The Society was really glad to visit Rosyth in 2015 and see HMS Queen Elizabeth fitting out and
HMS Prince of Wales still under construction. Dockyards November 2015 covered this memorable
visit and the modifications to the docks that have been necessary to accommodate these huge ships.
Their sheer size and breadth can be noted in the photos below taken in July 2014 of Queen Eliza-
beth in Number 1 Dock with HMS Illustrious then the Navy's biggest aircraft carrier in the next dock.
We are grateful to the Aircraft Carrier Alliance for both allowing us into Rosyth on that day and to
reproduce the excellent photos below.
Potential for Chemical Contamination in Dockyards

Current and former naval dockyards are potential sources of chemical contamination of land and water. Land affected by contamination (LAC) is regulated in England and Wales by the planning laws when land is to be re-developed under the terms of a Planning Permission. Where there is no planned re-development, Part 2A of the Environmental Protection Act 1990 is used to ensure that Significant Harm is not occurring, nor is there Significant Possibility of Significant Harm (SPOSH) occurring in the future. In addition to land quality regulation, other laws govern other aspects chemicals of potential concern (CoPC); examples being health and safety of workers and nuisance.

The underlying concept of risk-based assessment of LAC is that of source-pathway-receptor contaminant linkages (S-P-R). A source is anything that can cause harm, a receptor is anything that can be harmed by the source and the pathway is the means by which the source gets to the receptor to cause the harm. A simple example would be asbestos fibres in the ground which become airborne and then are inhaled by a person, who then develops lung cancer or mesothelioma. The absence of one of the components in the linkage means there is zero risk of harm. Normally, however, there will be multiple S-P-R linkages in any naval dockyard and the job of the risk assessor is to determine the level of risk and whether this is acceptable under the laws that apply.

The first stage of a risk assessment is a thorough desk study and reconnaissance walk-over survey to look for evidence of S-P-R linkages. This is followed by ground investigation (drilling and laboratory analysis) and assessment of the findings. Gathering information about current uses/activities is fairly straightforward, but historic information is far more challenging to come by. A consultant undertaking a desk study would no doubt be interested in the publications of the Naval Dockyards Society and the personal knowledge of its members.

The Department of the Environment (now Defra) produced two Industry Profiles outlining the potentially contaminating land uses of dockyards (DoE 1995a & 1995b) and the Environment Agency issued guidance on MoD land (Bulloch et al. 2001), all of which remain valid today and have been added to by further guidance.

The secret of a successful desk study is to work out what went on, and where, within a dockyard site. Bearing in mind the first Royal Dockyard (Portsmouth) dates from c.1492 and historic working practices were far from ‘environmentally friendly’, there can be several centuries of accumulated chemical sources below ground. The old adage ‘out of sight, out of mind’ held true for a long time and it is only comparatively recently that the MoD lost its Crown Immunity from prosecution in environmental matters. Modern dockyards are run by commercial organizations and now even the MoD has to abide by the same laws, but this was not always the case. The norm was that if you had something you did not want or like the look of, you either dumped it at sea or dug a hole and buried it. Although not a dockyard, the schedule of works (by Captain G. Eades et al. 2 February 1923) I have seen for the closure of the mustard chemical agent factory in Avonmouth stated: ‘the whole of the contaminated materials at present lying on the site, resulting from the previous demolition operations [is] to be dumped at sea, or otherwise suitably disposed of’. It is possible this directive was not entirely executed, and it serves as a warning in relation to other military sites where no such documentation survives.

Until the 1990s or so the general practice on MoD sites was to retain and dispose of all wastes on site wherever possible. Sites may often contain areas where wastes were tipped. Unwanted materials were commonly disposed of by burning in specified areas known as ‘burning grounds’ (Bulloch et al. 2001). The types of material that are likely to be encountered in these areas include: unburnt explosives; unexploded munitions; excess unburnt fuels from the burning process; packaging and partially burnt packaging potentially contaminated with explosives; radioactive contaminants; wastes from workshops; asbestos and metal residues from pyrotechnic devices; metal plating wastes; paint stripings and paint waste (possibly including radium paint residues).

The DoE (1995a) profile summarizes the development and activities at shipyard sites. Steam power was developed in the nineteenth century and there was a change from wood to iron and steel for ship construction. New technology was required and the range and the range of equipment, instrumentation and fittings built into ships increased dramatically. The fuel supply for steam
engines changed from coal to oil; and later diesel and gas-turbine engines and nuclear reactors took over. Activities associated with shipbuilding and repairing include the manufacture of marine engines and a wide range of fixtures, fittings, instrumentation and surface coatings. The fixtures, fittings and instrumentation include propellers, winches, deck cranes, chain, steering gear, gauges, valves, pumps, fire equipment, electronic controls, radar and radio. The surface anti-corrosive and toxic antifouling coatings prevent the growth of barnacles, marine grasses, algae and other marine organisms on ships. Historically, treatments used contained metals such as lead, copper, tin, arsenic and mercury. The only active ingredients permitted in modern treatments are approved for use under the Control of Pesticides Regulations. Historically, some of these materials, for example marine coatings, might have been manufactured on site, although this is generally not the modern practice.

In the days of wooden ships, tar was used for caulking seams and simple paints may have been produced on site by grinding coloured pigments into natural resins and linseed oil. From the 1760s, the underwater areas of outer hulls were copper-bottomed to protect against marine-borer damage. New steel for the construction of more modern vessels invariably has a surface layer of mixed iron oxides which must be removed. This used to be done by chemical cleaning which involved ‘pickling’ in hot sulphuric acid (containing corrosion-inhibiting agents) and hot phosphoric acid, rinsing with hot water. Steel may also be treated with cyanides in hardening operations. Painting took place at various stages during the construction process. It is common practice to do as much painting as possible on the various prefabricated units prior to final erection. Internal spaces may be painted during fitting out, then the vessel generally undergoes a final dry docking when the final outer hull coatings are applied.

In the past, many wastes were buried on site, or stored temporarily on site prior to off-site disposal. Liquid effluents, such as spent pickling liquors, may have been discharged directly into adjacent surface waters and a variety of materials sluiced out of the dry dock. Chemical wastes may include a number of used products and/or their residues, for example fuel and engineering oils, transformer fluids, tank and bilge sludges, paints, blasting grit contaminated with paint residues, thinners and cleaning solvents. These wastes may have been drummed for off-site disposal or even poured on to the ground. Metallic wastes may include quantities of copper and its alloys such as copper/nickel, copper/zinc (brass) and copper/tin (bronze), used in condensers and heat exchangers, pumps, valves and other fittings where good resistance to seawater corrosion was required. Heavy metals and their oxides can be present from welding, cutting, grinding and shot-blasting operations. Other wastes are likely to include discarded equipment, for example welding and paint-spraying equipment, transformers, dials and gauges (containing alcohols or mercury), cables, batteries, scrap metals, pockets of finely divided metals and metal fastenings.

Fuel oils, lubricating oils and hydraulic fluids may contaminate the ground through leakage or spillage, particularly around former fuel-storage tanks and drum-storage areas. Also, leakage along the lines of drains, sewers, pipes, or from on-site disposal locations for oil-tank sludges may have caused contamination.

Solvents used in paints or for degreasing, thinning or cleaning may have caused contamination through spillage or leakage around bulk-storage tanks and drum-storage areas. On-site disposal locations such as soakaways, waste-storage tanks and former production areas could also have been affected.

Asbestos was used extensively as an insulation material and may have been released during application or the stripping of lagging on pipes and tanks. It is most likely to be found in the waste storage and on-site disposal areas in shipbreaking yards but it may be distributed generally across the site. Residual quantities may also be found in shipbuilding and ship-repair yards.

Methane and carbon-dioxide gas emissions may also arise from infilled dock basins as a result of the anaerobic degradation of any putrescible fill material or from highly organic silts left in the docks prior to infilling.

Remnants of coal stores and waste ash may still be found on very old sites. Some low-level radio-active wastes from luminous paints and/or scrapped military instruments may be found on some sites, especially warship yards. In the past, electrical transformers may have used polychlorinated biphenyls (PCBs) as dielectric fluid. PCBs may be associated with scrapped instrumentation on some sites.
Large quantities of pesticides and herbicides are or have been commonly used as part of the maintenance for MoD sites. Key points to look for are the storage areas where local spillages may have occurred.

Radioactive material may be present at sites associated with nuclear weapons/reactors or as a result of the use of specialist military equipment, but generally these are well managed and controlled.

Many MoD sites were closed and decommissioned to the standards of the day, which may not be compliant with current standards. Historically surveys were conducted which concentrated on live munitions on the surface, but such surveys may not have addressed fully the potential risks from residual raw materials or from buried munitions. Since naval dockyards have been targets for enemy bombing, there is a significant probability of undiscovered unexploded bombs (and possibly also unused Allied munitions).

I have given a brief summary of a naval dockyard through the eyes of a geo-environmental consultant. Next time you visit such a site I hope you will think about what process have been undertaken and what might be their legacy in terms of land (and water) quality. Some of the types of CoPC anticipated are summarized in the table below.

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References

Potential Contaminant Sources at Naval Dockyards (after DoE 1995a)

**Metals and metal compounds** – finely divided metal wastes – steel, copper alloys and solders; pigments – aluminium, chlorinated zinc, zinc, titanium dioxide, lead oxide, copper oxide, ferrous oxides, zinc lead oxide, zinc chromate; scrapped instruments – mercury.

**Fuels/oils/oily sludges** – diesel and lubricating oils; hydraulic fluids.

**Shop primers** – aluminium, zinc epoxy, iron oxide epoxy, zinc silicate.

**Anti-corrosives** – coal tar vinyl and coal tar epoxy, zinc silicate (these paints may contain lead, zinc and chromium (as chromate)).

**Antifouling treatments** – carriers; active ingredients – historically lead, copper, tin, mercury and arsenic compounds; modern treatments contain copper, zinc and organotin compounds.

**Thinners/solvents** – ketones e.g. methyl ethyl ketone (MEK), methyl iso-butyl ketone (MBK); glycol ethers e.g. glycol ether acetates, glycol ether alcohols; aromatic hydrocarbons e.g. benzene, toluene, xylenes; white spirit; alkanes; halogenated hydrocarbons; alcohols e.g. butanol.

**Pickling acids** – sulphuric, phosphoric.

**Cyanides**

**Coal and boiler ash**

**Polychlorinated biphenyls (PCBs)**

**Asbestos**

**Radioactive materials** – typically Ra-226.

**Methane** – from decaying organic matter in site infill.

**Explosives and explosives residues**
The initial development of Palermo's shipyard is closely linked to changing economic and social conditions following the unification of Italy in 1860 and, on a more local scale, to the emergence of the Florio family's industrial empire.

After unification, the new national government had to face various regional challenges. One has to keep in mind that Italy was less developed in its economy and level of industrialization than the north European countries. By the end of the nineteenth century, state policy promoted the allocation of funds, grants and different forms of financial supports to improve the industrial development of the country. Maritime and shipbuilding fields were identified as crucial sectors for the growth of the national economy.

Specifically in Sicily, until the 1830s, there were no regular shipping links with the rest of Italy. This together with the increasing trading activities rendered the maritime field a potentially lucrative sector. In 1840, Benjamin Ingham* and Vincenzo Florio, together with other members of the local noble-bourgeoisie, gave birth to the Società dei battelli a vapore siciliani, a Sicilian steamer company. Subsequently, the activity of Vincenzo Florio as a ship owner flourished and culminated in 1881 with the establishment of the Navigazione Generale Italiana, born from the amalgamation of his own maritime company, I. & V. Florio, and that of Rubattino from Genoa. It became the largest Italian commercial fleet, financed by the state for covering the major maritime shipping lines both within and without the Mediterranean Sea. Florio's time still represents for the city its belle époque moment, when the industrial dream was supported by a network that was operated by some of the most prestigious members of the political and economic class. Three generations of Florio's family

* Ingham left the city of Leeds in 1806 following the British navy that were coming to occupy Sicily. He was a wool trader but he lost his merchandise with the sinking of the ship while coming to Sicily. He became one of the most powerful entrepreneurs of the island. Vincenzo Florio was capable of learning from his attitude, giving birth to the most famous Sicilian dynasty.
made substantial investments in various productive sectors: from foundry workshops to wine production and trading, tuna-fish processing and sulphur mines and the production of artistic pottery. Nevertheless, the maritime field remained the primary activity of Casa Florio, certainly being one of the major reasons for the shipbuilding initiatives. However, beside the necessity to create a local industry for repairing and building boats of the Florio's company, historians detect other reasons that led to the building of a shipyard. The idea of a shipbuilding facility in Palermo was proposed by Ignazio Florio junior in 1896 together with the construction of a dry dock. Indeed, the request for improvements of the existing harbour facilities and the construction of a new dry dock had been proposed to the national authority some time earlier. Florio's proposal historically addressed the issues by reference to social instability arising from the very high unemployment rate of the Sicilian population, a major concern to the national government. On the other hand the financial empire of Casa Florio was in danger. Since the Italian government was now permitting new financial support to the maritime companies and shipyards, Ignazio Florio Jr. got the opportunity to solve his own economic troubles with banks. Lobbying with both local and national authorities, on the possibility of alleviating the unemployment social issues, the agreement proposed by Florio to the municipality of Palermo and the government was accepted. Florio established a new company referred to as the Società Anonima Cantieri Navali, Bacini e Stabilimenti Meccanici Siciliani.* The sum of 3m Italian lira was assigned for the construction of a new dry dock together with the allocation of some 9,000 square metres of land. The shipyard was established on the northern side of the harbour bay, where the harbour had moved following the construction of a new wharf and, subsequently, the Royal Arsenal in the seventeenth century. Initially, the major impact on the area was the destruction of a small fourteenth-century fortification built on an existing structure for tuna fishing.

The designer of the dry dock, Cesare Verdinois,** reported in a paper published in Rome in 1909 that the shipbuilding site had been planned over a total superficial area of 14,000 square metres covered by workshops and an open area of 49,000 square metres. Of the total area of 63,000 square metres, some 43,000 was established through reclamation works. There were five masonry slipways built on the rock through a concrete casting measuring 100, 125, 150, 125, and 170 metres in length respectively. In the book Dock Engineering by Brysson Cunningham (1922), Palermo is quoted as an example in which the precipitous configuration of the ground had led to the construction of so-called sliding slipways, ‘a distinct system of slipway . . . in which a sledge takes the place of a cradle’. In Palermo’s case it is stated that ‘the space available was enough to admit of a slide, but not of a line of rails, the incline of which would have to be far less steep and therefore proportionately longer. The way is formed of a large number of cross sleepers in which four strong beams

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are placed longitudinally. Above the water level these are fixed, but the lower part is connected by hinges, and floats as soon as the weight is taken off.'

The dry dock designer Cesare Verdinois, an eminent naval designer working in Sicily, was engaged by the Civil Engineering Authority of Palermo. Florio sought permission to engage him in this project. In his report Verdinois describes the details and the timing of every construction phase of the dry dock while he provides an overview on the rest of shipyard. He explains all the criteria, local conditions and challenges that he had to face. He also reports on the examples, models and best references he looked for. Despite its public property, the management of the dry dock was also granted to the Florio's company for seventy years. However, while most of the workshops and slipways were completed by 1901 and officially completed in 1903, the dry dock was not inaugurated until 1907.

The overall delays led to the loss of 80m lira of orders for the construction of warships from the state. However, following protests, in 1904 the shipyard started its ship production with two orders. Between 1901 and 1909 nine steamers with an average of 3600 tons, from 107.33 to 7,870 tons, were built at Palermo's shipyard.

Growing economic troubles led Florio to sell the company. In 1907 the ownership of Palermo's shipbuilding facilities was transferred from local entrepreneurs to Northern Italian ones. A new company by the name of Cantieri Navali Riuniti was founded by Attilio Odero and Luigi Orlando, shipbuilding entrepreneurs from Genoa and Livorno. The aim was to create a vertical industrial system that could link the steel industry of Terni with the naval industrial sites of Palermo and Ancona. However, once again this ownership ended after six years and the property passed to Erasmo Piaggio in 1912. Like Vincenzo Florio, the founder of the Florio dynasty, Erasmo Piaggio was the founder of an industrial empire run by his family over three generations and whose main activity, among many others, was linked to maritime industry.

Under the direction of the Piaggio family, the Palermo and Ancona shipyards grew well up to the 1960s, focusing more specifically on the repair and maintenance sector. Further expansions of the site over the years involved a radical modification of the surrounding urban area which entailed the redesign of the zone between the urban core of the city and the coast line area. In 1920, a new wharf for the new machinery shop was built in front the old Arsenal, heavily modifying the northern water front. In 1939, auxiliary buildings were built just outside the site boundary wall, on the opposite side of the street. This was an important development as it consolidated the importance of the shipyard within the port area of the city of Palermo. During the 1950s, part of a public road as well as private areas had been included within the industrial boundary, causing the demolition of a whole city block saving only part of the ancient Arsenal.

Beside the first graving dock, two floating docks and one dry dock of 400,000 tons have been built at Palermo's shipyard. With the end of the Piaggios' leadership, the shipyard became part of the Fincantieri group in 1984. What is peculiar about the history of Palermo's shipyard is that under the Piaggio family's direction it was able to survive even in the context of the unfair competition arising from the acquisition by the state of the 90 per cent of Italian naval industry (from 1933 with
the creation of the Institution of the Industrial Reconstruction – IRI). Indeed, Palermo, Ancona and a few other shipyards have retained their activity within the private sector, thanks to their ability to be flexible and also given their strategic central position on the Mediterranean sea.

In spite of the turbulent economic time since its inception, Palermo’s shipyard has retained its prestigious role in repairing and remodelling of ships. In this respect this is the only historic industrial activity that has survived over the years from within the urban area of Palermo.

(photos courtesy of the author)

Valeria Megna

Bermuda Crests – End of the Line!

In a rather sad and seemingly unnecessary development the crests painted by naval ships’ crews on visits between 1951 and 1995 have been painted over in preparation for the Americas Cup. At least they were photographed before this but it seems an extraordinary development since these crests were a colourful and poignant reminder of the dockyard’s past.


Here are some images of the crests taken by Ann Coats in 2007.

Gregory Ashworth – A Naval Dockyards Perspective

Gregory Ashworth, Professor of Heritage Management and Urban Tourism (formally retired) at the University of Groningen in The Netherlands, died on 6 November 2016 at the age of seventy-five. His relation to the Naval Dockyards Society was tangential, but he was well known to a number of its members and deserves to be better known to all – a goal which this article may hopefully achieve. His indirect relationship to the society could be defined under three interrelated headings: his Portsmouth affiliation, the Ashworth–Tunbridge partnership and his pre-eminence in the field of heritage tourism, each of which I consider below. But this is simply my vision: he was a man of many parts and others might add NDS links that I have missed.

Greg was a prolific author, with some twenty books, one hundred chapters and three hundred academic papers to his credit. I would sometimes tease him that he just rearranged the words a bit, to achieve this much; but no, many others would testify that, if he ever did so, it was to very good academic purpose. As to how many conference papers and other items of intellectual creativity he produced, I dare say he himself had lost count. Suffice to say that I will never match him, and very few others do.

Greg’s career progressed from St John’s College, Cambridge, via the Universities of Reading, London and Wales; and before he migrated to spend the second half of his life in Groningen, he advanced much of his early career in the Geography Department of what was then Portsmouth Polytechnic. There he made an enduring mark and many friends, and it is in this context that some of
our long-standing members will chiefly remember him. In my blurred recollection of our last meeting at a Brighton symposium just before he died, I recall his nostalgic reference to long-ago gatherings with Portsmouth friends in the ‘Still and West’, by the harbour entrance. While he seldom engaged with specifically naval or dockyard matters, except in response to me, he was partly a product of the Portsmouth environment and his general interest in military strategy was no doubt in part Portsmouth’s legacy.

It was in Portsmouth that I first met him in 1979, on an exchange from my home university in Canada; and no academic exchange has ever been more fruitful in its aftermath. We identified convergent interests, mine in heritage and his in tourism, and collaborated during my stay. Several years later, a paper of mine caught his interest, and by 1986 we had begun what became a continuous academic partnership until his death thirty years later. Among some fifty tangible collaborations, I co-authored some of his books (only five, I confess) and a great many chapters and papers beyond, to say nothing of conference collaborations and a steady stream of information and insight by letter, fax, later email and many a meeting in Ottawa, Groningen and innumerable other places. At geographical conferences, we met again in Portsmouth, and later in Plymouth, where the dockyard issues provided the backdrop to other proceedings. Furthermore, my own interests within our field became increasingly concerned with naval dockyards – hence my membership of NDS – and Greg was thereby drawn more directly into dockyard matters through his co-authorship with me. In this he never lacked pertinent anecdotes; one I treasure is a poignant poem he found on HMS Warspite’s farewell protest, running aground at Marazion and thereby cheating the ‘shameful breaker’s yard’.

Our dockyard engagement climaxed with respect to Malta. Following a chance conference invitation in 2002, we were invited to visit Malta to advise on its historic tourism; after several separate visits, with joint papers resulting, we finally returned together in the summer of 2014. As we contemplated Grand Harbour from Upper Barrakka Gardens, it was he who recalled that fateful day in 1942 when the Ohio had limped into harbour, the last of the survivors of the Pedestal convoy that proverbially saved Malta. This visit resulted not only in my subsequent article in Dockyards* but also a further joint paper and chapter published elsewhere. Sensing then that Greg’s health was failing, it was bittersweet to watch him sailing on the ferry into Dockyard Creek from my eyrie in the Phoenicia Hotel, as he went with Angela and my wife Elaine to review the naval and related heritage tourism initiatives in the waterfront revitalization progressing there.

Greg’s stellar contribution to the study of heritage tourism (along with urban planning and management more broadly) far exceeds our joint work on the role of naval dockyards in this field, but he understood very well their heritage tourism potential – as now realized in Portsmouth, Bermuda and increasingly in Malta. Since we wrote much about heritage tourism in urban waterfront locations, the naval dimension could hardly be overlooked. As members of the NDS know very well, naval dockyards are icons of industrial innovation and national pride, and although our membership’s specific interests in them are very diverse, we should not lose sight of their actual or potential role in heritage tourism (albeit sometimes in tension with security concerns). If we choose to pursue this theme we will find the writings of Sir Gregory Ashworth to be of much more than passing interest.

Among numerous other recognitions, Greg received in effect a Dutch knighthood in 2011, when he was appointed to the actually superior status of Officer of the Order of Oranje-Nassau. While the Dutch do not use the prefix of knighthood, thereby causing some confusion in British circles, few would deny him the title that he richly deserved but in fact only diffidently used.

We discussed many things, at many conferences and in countless pubs and other venues during those thirty years. Though naval dockyard matters were only one element, they were a continuous thread that ran from Portsmouth days through to our last publication, which is on Malta and is currently in press. It seems to me by no means inappropriate that our final parting in October 2016, if it had to be, should have fallen by chance upon Trafalgar Day.

Rest in peace, Greg.

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* Dockyards, November 2014, vol. 20 no. 2.
Freddie Emery-Wallis, 1927–2017

A great outstanding champion of Hampshire’s heritage including notable public buildings, restored defence heritage, museums, documents and gardens, Freddie Emery-Wallis has died at the age of eighty-nine. His achievement lives – all around us – in the county and in Portsmouth, his home town. It was due to his vision matched by political skill that the National Museum of the Royal Navy is in Portsmouth, and also HMS Warrior 1860 and the Mary Rose.

In the 1950s the City of Portsmouth planned to close the military Cumberland House, its only museum. A group of local people met there, very concerned at the vulnerability of the city’s built and natural heritage, and they persuaded Emery-Wallis to stand for the council to speak up for them. So it was to save this that Emery-Wallis first waded into local politics – the start of his journey to preserve the distinctive defence structures of Portsmouth and Hampshire. In the late 1960s the General Manager of the Dockyard issued an order for demolition of its eighteenth-century storehouses. The Ministry of Defence had no further naval use for them, because they were not in keeping with modern storehouse design; and there was a plan to push a road to the harbour edge across the site. Councillor Emery-Wallis was then Chairman of Portsmouth Corporation Development and Estates Committee and Lord Mayor in 1968. Although government-owned buildings were exempt from normal planning procedures (until 2006), the proposed demolition was picked up as a result of the courtesy consultation of local planning authorities imposed on government departments. Emery-Wallis contacted the Port Admiral and set up links between the Navy and the city, which provided a stay of execution until the appointment of Admiral Sir Terence Frewin, Commander in Chief, Naval Home Command, who was instrumental in ensuring their preservation. He was succeeded by Admiral Sir Horace Law, who was equally supportive of the development of the museum. With the American collector Lily Lambert McCarthy, Emery-Wallis was instrumental in persuading the dockyard management not to demolish the storehouses, which became home to the Royal Naval Museum and her collection of Nelson memorabilia.

But soon afterwards, the Ministry of Defence planned to move the museum's contents to Greenwich. He found himself up against Dr Basil Greenhill, who was the Director of the National Maritime Museum, Greenwich (1967–1983). Freddie said he argued for the collection to stay in Portsmouth, with the support of the city council. Another battle was fought, and the collection stayed where it was, becoming a key element in the whole revival of the Historic Dockyard as one of the most successful maritime museum complexes in the world, now including HMS Victory, Mary Rose, HMS Warrior and M33. Emery-Wallis also played a role in securing HMS Warrior for Portsmouth. The city council acquired the site just inside the Victory Gate where she is moored and spent around £8m constructing her berth. Early on he also arranged a small grant to the chair of fundraising of the Mary Rose Trust, as he saw the potential of its raising from the seabed for the city. The first plans were for the ship to be housed in a new museum on the beach at Eastney, but he persuaded the Joint Planning Team in the dockyard to fund her home in a dry dock off Basin No. 1 inside the dockyard. Following this success he became one of the founders of Southsea Tourism and was able to create the role of Defence Co-ordinator. In 1979 Hampshire County Council commissioned a report by the Dartington Amenity Research Trust entitled Defence of the Realm an interpretive strategy for Portsmouth and the surrounding region (City of Portsmouth Southern Tourist Board DART publication No. 59). It identified tourism as a key activity for the surviving defence heritage resources in south Hampshire.

His regular perambulations around the city often led to decisive action. The prominent clock on Eastney Barracks dating from 1782 came from Woolwich Dockyard, which closed down as Eastney Barracks was being built. He was happy to see the mechanism transferred to the Naval Base Heritage area since another flat would be created in the water tower, provided that the move was done by reputable experts. The barracks clock is now powered by a small electronic mechanism.

During his time as a city councillor Portsmouth was an early adopter of the new conservation powers given to local authorities in the Civic Amenities Act 1967 and the Planning Policy Guidelines that followed. Two historic buildings architects, Brian Young and Deane Clark, were appointed in 1970. During his time as Chairman of the Development and Estates Committee he ensured that
good budgets were available for conservation work including purchase of conservation material and artefacts and ongoing maintenance. Nineteen conservation areas were soon designated. The conversion of Clarence Barracks to the Portsmouth City Museum designed by Deane Clark in 1973 was followed by restoration of Southsea Castle, opened as a museum, as well as the seafront walkway along the walls of Old Portsmouth. Forts Purbrook and Widley were acquired from the MoD and opened for leisure activities.

Celia Clark

The Oldest Surviving Tricolour Flag?

The Times featured in February a feature on a fascinating exhibition, *Nelson and Norfolk*, to be held from 29 July to 1 October, featuring the ensign of the French ship captured by Captain Berry in 1800 and donated by him and Nelson to the city of Norwich, where it has been ever since.

Sadly it has not been on regular public display since 1897 but will now be the centrepiece of the exhibition and possibly on permanent display. Measuring 16 by 8.3 metres, it is the size of a large swimming pool and it is this very size that has prevented it being exhibited.

Launched in 1785, *Le Généreux* was one of only two ships to escape Nelson at the Battle of the Nile and was captured eighteen months later by Berry in HMS *Foudroyant*. The tricolour was packed up, sent to Norwich and displayed in the medieval splendour of St Andrews Hall till 1897.

The flag has survived its hundred-plus years in storage well with the red, white and blue colours still showing up. The tricolour was officially adopted in February 1794 so this could be the oldest one in existence.

Textile Conservator Lindsay Blackmore comments:

Everything we do in conservation must not damage the textile. It must keep hold of anything of historic interest and any cleaning is done with careful testing. We weigh up whether it would be an advantage to get rid of the dirt or leave it in. In this case we will keep all the dust that comes off, which has gunpowder and all sorts of interesting things in. So we can piece together what’s happened to the object in its long history.
Funds are needed to assist with conservation of the flag and its permanent display and details of how to donate can be found here: https://www.justgiving.com/campaigns/charity/costumetextile-association/ensignoflegenereux?utm_campaign=20170303_93602&utm_medium=email&utm_source=ExactTarget