Maritime and Coastal Heritage
Introduction

Sir Neil Cossons *Chairman, English Heritage*

New responsibilities for marine archaeology and partnerships across the maritime heritage sector are broadening our understanding of the seamless coastal historic resource.

The archaeology of Europe and the place we now call Britain serves to illustrate our communality with the continent, rather than our separateness, in the millennia before rising sea levels severed us from the mainland, about 10,000 years ago. Since then, being on an island has been central to our identity. One of our most enduring national myths is the idea of the sea-girt fortress protected from invaders by a natural moat, an image that owes much to Shakespeare's John of Gaunt and that has grown stronger with every successful resistance to invasion, from the Spanish Armada to the Battle of Britain. This image is embodied in the landscape by layer upon layer of coastal fortifications – from the Saxon Shore forts of Roman Britain, through Henry VIII's castles and the Martello Towers built as a defence against Napoleon, to Bawdsey and the chain home radar stations of World War II.

Defence, though, is only part of the story. The seas surrounding our coast have served as a highway as well as a barrier for many centuries, and their numerous shallow estuaries have been as much an invitation as an impediment to sea-borne visitors, whether invader, trader or immigrant. These maritime contacts have given England its name and a language and heritage that connect us with places on the other side of the North Sea. It is, for example, no surprise that the vernacular architecture of Great Yarmouth is more like the Netherlands than inland East Anglia. These contacts have also been fundamental to the diversity of our contemporary culture.

The combination of maritime trade and naval power – and they are intimately linked – produced both the Empire and the Industrial Revolution: a chance combination of circumstances that came together in Britain in the 17th and 18th centuries and changed the history of the world. It is also no surprise that many of the potential new World Heritage Sites identified in England in 1999 relate directly to this period of our history. Liverpool – one of the first to be inscribed by UNESCO – is the supreme example of a commercial port developed at the time of Britain's greatest global influence, its distinctive architecture echoing (and in some cases pre-dating) that of the great cities of the American East Coast. Manchester – the first major industrial city in the world – developed as a result of the cotton trade (and hence indirectly on the back of slavery) and led to the creation of Britain's first industrial canal, the first mainline railway and the first industrial quarter dependent on steam power.

Chatham Naval Dockyard is the supreme example of a royal dockyard from the time when Britain's naval power was at its height and dockyards were the largest industrial complexes in the world. In the 18th and 19th centuries, the Cornish mining industry – then

NMR AA002062 © English Heritage.NMR / SW Rawlings

Maunsell Forts, Shivering Sands, somewhere between Southend-on-Sea and Margate. Designed by GA Maunsell, these army forts were erected for defence during 1941–2.

NMR OP00505 © English Heritage.NMR

Fishing boat unloading at Broadstairs Harbour, Kent, 1890–1910. Children play on the tethering ropes while bathers (background) enter the changing booths, which can be moved to the water's edge to allow them to enter straight into the water. Being 'over-dressed' for the beach was not an issue then.

NMR OP00487 © English Heritage.NMR

Victoria Pier, Blackpool, looking west, 1890–1910. The pier opened in 1863 to provide a promenade and entertainment for the increasing number of holiday-makers visiting Blackpool.

the world's greatest producer of tin and copper – developed new technologies of deep mining that were exported throughout the world. Kew Gardens played a pivotal role in the development of the Empire's natural resources, through the introduction of commercial crops in the colonies and the compilation of many of the world's floras. Even Darwin's home and workplace at Downe in Kent owes its world importance to the deductions Darwin made from his observations during his voyage to the Galapagos on *HMS Beagle* (1831–6).

But heritage, like life, is not all war and economics. Our maritime heritage also gave the world a distinctive (and distinctively frivolous) type of place: the seaside resort. Starting with George III at Weymouth, the popularity of sea bathing meant that our resorts soon rivalled and surpassed the inland spas of continental Europe. Their apogee coincided with the new mobility made possible by the railway companies that eagerly promoted them. Attracting every shade of social class, from the raffish to the genteel, the seaside alone could be used to write the social history of England over the last 250 years.

English Heritage and Maritime Archaeology

The first three years

Ian Oxley *Head of Maritime Archaeology*

English Heritage's responsibility for the submerged historic environment of England's Territorial Waters brings new challenges and opportunities.

The expansion of English Heritage's remit to include the seabed off our coast to the 12-nautical mile Territorial Limit, through the passing of the National Heritage Act 2002, represents one of the most significant challenges the organisation has faced since its establishment.

In spatial terms, the increase is approximately three-quarters as much again as the land area of England. More importantly, the seabed contains an immense wealth of archaeological sites and remains, potentially without equal elsewhere in the world in terms of their number and diversity, including extensive inundated prehistoric landscapes as well as evidence of the exploitation of the sea in more recent times.

English Heritage has been given these new responsibilities at a time when the interests of the wider public, and specific stakeholders in the marine and underwater heritage, have risen to unprecedented heights – as seen in the growth of television programmes and other media reports generally. This new role offers a unique opportunity to make a very significant element of the nation's historic and archaeological resource accessible to the wider community of our historically 'maritime' nation.

After the passing of the National Heritage Act 2002, a Head of Maritime Archaeology was appointed, and in the last three years the Maritime Archaeology Team has expanded to include two more archaeologists and an administrative assistant. Paul Roberts and Stephen Trow's *Taking to the Water: English Heritage's Interim Policy on Maritime Archaeology* (2002) and English Heritage's corporate objectives form the framework for the team's work.

New responsibilities

The National Heritage Act 2002 harmonised the roles of the UK heritage agencies by extending English Heritage's remit into the marine zone below the low-water line, modifying the organisation's functions to include:

- securing the preservation of ancient monuments in, on, or under the seabed;
- promoting the public's enjoyment of, and advancing their knowledge of ancient monuments in, on, or under the seabed.

The 2002 Act amended the definition of 'ancient monuments' in the National Heritage Act (1983) and the Ancient Monuments and Archaeological Areas Act (1979) to include sites in, on or under the seabed (including those comprising the remains of vehicles, vessels, aircraft or movable structures) within the seaward limits of the UK territorial waters adjacent to England.

Another significant change allowed administrative responsibilities in support of the Protection of Wrecks Act 1973, on a UK-wide basis, to be transferred from the Department of Culture, Media and Sport (DCMS) to English Heritage. English Heritage now administers the DCMS Advisory Committee on Historic Wreck Sites (ACHWS) and manages the UK Government's contract for archaeological services in support of the 1973 Act, currently held by Wessex Archaeology.

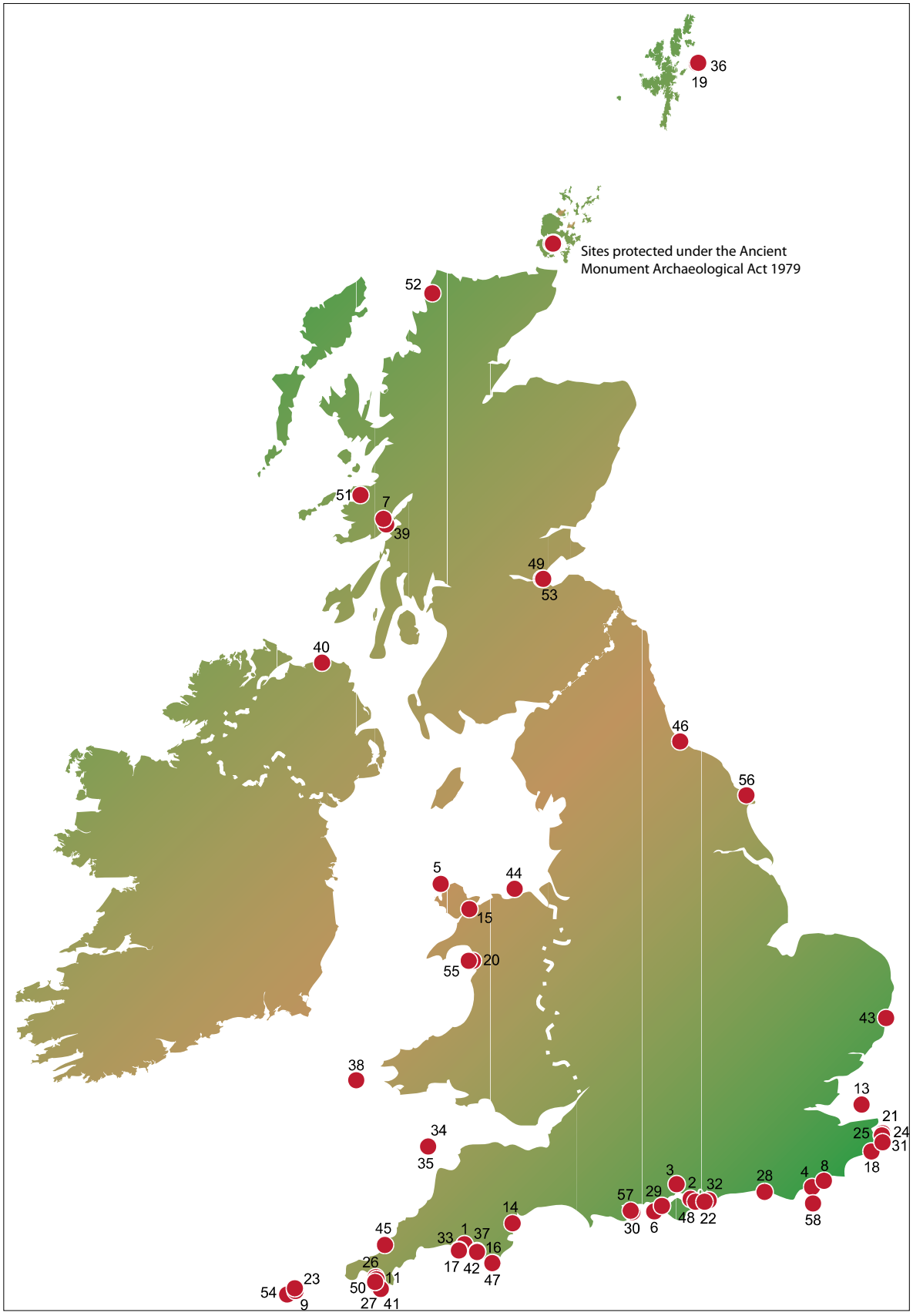
Designated Wreck Sites

English Heritage has assumed responsibilities for the physical management of the 39 historic wreck sites in England's waters, designated under the Protection of Wrecks Act 1973

Designated Wreck Sites of the UK protected under the Protection of Wrecks Act 1973.

prior to the passing of the National Heritage Act 2002.

A staged approach to the investigation, conservation and management of these Designated Wreck Sites is based on the development of management plans for each site, in keeping with well-established practice for designated terrestrial sites and monuments. Day-to-day management issues include extensive liaison with all stakeholders, including



1 Cattewater
2 *Mary Rose*
3 *Grace Dieu*
4 *Amsterdam*
5 *Mary*
6 Needles
7 *Dartmouth*
8 *Anne*
9 Tearing Ledge
10 (revoked)
11 Rill Cove
12 (revoked)
13 South Edinburgh Channel
14 Church Rocks
15 Pwll Fanog
16 Moor Sand
17 *Coronation* Offshore
18 *Langdon Bay*
19 *Kennermerland*
20 Tal-Y-Bont
21 *Stirling Castle*
22 *Invincible*
23 Bartholomew Ledges
24 *Restoration*
25 *Northumberland*
26 *St Anthony*
27 *Shiedam*
28 Brighton Marina
29 Yarmouth Roads
30 Studland Bay
31 *Admiral Gardner*
32 *Hazardous*
33 *Coronation* Inshore
34 *Iona II*
35 Gull Rock
36 *Wrangels Palais*
37 Erme Estuary
38 The Smalls
39 Duart Point
40 *Girona*
41 *Royal Anne*
42 Erme Ingot
43 Dunwich Bank
44 *Resurgam*
45 *Hanover*
46 Seaton Carew
47 Salcombe Cannon Site
48 *HMS/m A1*
49 Burtisland
50 Loe Bar
51 Mingary Castle
52 Kinlochbervie
53 *HMS Campania*
54 *HMS Colossus*
55 *The Diamond*
56 *Bonhomme Richard*
57 Swash Channel
58 *Holland No. 5*

existing licencees, and cooperation with the police in relation to cases of illegal fishing and diving.

Specifically targeted commissioned work has included Desk Based Assessments on two sites with particular problems of erosion – *HMS Colossus* in the Isles of Scilly and *HMS Stirling Castle* on the Goodwin Sands (Dunkley, 28–9) – to clarify the conservation objectives that will inform their future management. In addition, a site stabilisation trial is being carried out on the *Colossus* because it is suffering unexpected lowering of the levels of protective covering sediments. Further proposals for marine environmental studies to help understand the processes causing change on such sites are also being considered.

Other commissioned research includes archive assessment and enhancement to bring together the disparate interests and highly variable standards of work on Designated Historic Wrecks over the past 30 years.

Wider issues

The future protection of the marine historic environment resource must involve central and local government, industry, other stakeholders and the general public, so a considerable amount of time has been invested in building the required frameworks and relationships with other government departments and agencies. Development control and wider consultation duties are steadily increasing in parallel with the Government's promotion of broader Marine Stewardship initiatives. English Heritage now receives, and comments on, approximately 25 consultations per month relating to all areas of the English marine zone: large-scale marine aggregate extraction, offshore wind-farm installations, gas pipelines, electric cables, coastal defence, and port and coast edge constructions.

English Heritage now participates in various local and regional organisations with interests in the marine historic environment, such as the Dorset Coastal Forum, the North East Forum on Maritime Archaeology, and the Hampshire and Wight Trust for Maritime Archaeology.

Commissioned work has been specifically targeted according to strategic priorities to promote under-studied or vulnerable areas. For example, basic site evaluation work has been commissioned on the Bouldnor, off the Isle of Wight, on a submerged prehistoric landscape that includes worked flints dating to approximately 7,000 BP. Similarly, a significant effort is being made to increase the awareness and capacity of all the teams of English Heritage by strengthening links with officers with coastal responsibilities in the regional offices and the centre; providing training, desk instructions, information and a source of specialist advice; and factoring the marine historic environment and maritime heritage generally in major English Heritage strategic and policy initiatives (for example, *State of the Historic Environment Report* 2003 and *Modern Military Framework Strategy* 2004).

Effective and coordinated management of the marine historic environment requires the ability to take a strategic level overview, whether the concern is to plan the future direction of conservation activity and funding, to provide sustainable responses to development and other pressures for change, or to prioritise research funding. The England's Historic Seascapes project (see *Conservation Bulletin* 47, Hooley, 31–3), stimulated by the need for fully contextualised responses to marine aggregates extraction, aims to provide such an overview by GIS-mapping of marine historic character. Wessex Archaeology has been commissioned to trial the project methodology in Liverpool Bay, drawing together a range of marine cultural and natural environment datasets to understand and map the historic dimension of the wider environment, beyond the unevenly distributed and variable data from previous archaeological work. This project's GIS database will enable us to participate fully in partnership with our fellow agencies for the natural environment in the Government's development of an integrated marine spatial planning system.

NMR 23501/15 © English Heritage. NMR / Damian Grady

Wind farm under construction off the Norfolk coast: one of the many growing pressures on the marine environment. By 2010, 10% of the energy used in Britain should be generated by renewable sources, and at least another 17 coastal wind farms are to be built over the next decade.

The natural environment affects the submerged historic environment: lobster burrowing on the Mesolithic site off Bouldnor, Isle of Wight.

Reforming heritage protection

On 26 March 2004 in Ramsgate Maritime Museum, David Miles, then Chief Archaeologist for English Heritage, launched the DCMS's consultation paper, *Protecting our Marine Historic Environment: Making the System Work Better*. The paper set out the key issues and questions in relation to marine historic environment designation and sought to provide

- a positive approach to managing the marine historic environment, which will be transparent, inclusive, effective and sustainable, and which will be central to social, environmental and economic agendas at both a local and national level;
- a legislative framework that protects the marine historic environment but enables appropriate management techniques to be applied and to evolve.

The consultation period ended on 31 July 2004, and the DCMS is now reviewing the responses prior to issuing its recommendations to Ministers.

The way ahead

The Maritime Archaeology Team has made significant advances against a background of ever-expanding commercial development of the marine zone and a slowly growing understanding of the archaeological potential of what lies within it. However, it is clear that there is a wider range of functions that we are not yet able to carry out, either fully or in part, because of resource limitations. Key omissions include:

- development of appropriate research agendas;
- clarification of what actually comprises the maritime archaeological resource, and its relationship to assets such as historic ships, maritime museums and coastal properties;
- issues of jurisdiction, management and administration (national, regional and local) that cross the environmental divide of the low water mark;
- increasing the capacity of the maritime archaeological sector in academia, contract archaeology and local authorities;
- promoting best practice in the existing maritime archaeology sector;
- increasing our understanding of the maritime historic environment and of relative preservation in different marine burial environments;
- understanding the numbers, potential and nature of threats to existing sites, particularly drowned prehistoric landscapes.

The recent restructuring of the Archaeology and Historic Buildings Departments within English Heritage has offered the opportunity to take a more strategic approach in addressing the marine historic environment and maritime heritage objectives, sharing tasks with teams other than Maritime Archaeology where appropriate, thus making better use of limited resources.

REFERENCES

DCMS 2004 *Protecting our Marine Historic Environment: Making the System Work Better*. London: Department of Culture, Media and Sport

Roberts, P and Trow, S 2002 *Taking to the Water: English Heritage's Initial Policy for the Management of Maritime Archaeology in England*. London: English Heritage (available from www.english-heritage.org.uk)

Roberts, P and Trow, S 2002 *Taking to the Water: English Heritage's Interim Policy on Maritime Archaeology*. London: English Heritage

Coastal Change and the Historic Environment

Building the evidence base

Peter Murphy *Regional Advisor for Archaeological Science (East of England)*
Stephen Trow *Head of Rural and Environmental Policy*

Sea level rise and new approaches to coastal defence pose challenges for conserving our maritime heritage. Enhanced information is the key to informed management.

In the face of rising sea level, increasing coastal erosion and the loss of important inter-tidal habitats, Government policy on coastal defence is changing. On undeveloped coasts, some sea walls are being abandoned and coastlines left to develop more naturally, allowing coastal barriers and saltmarsh to provide defences. This long-term re-assessment of coastal defence is being delivered through the development of Shoreline Management Plans which, through an inclusive consultative process, allow historic environment considerations to be weighed against other concerns.

In May 2003, English Heritage published *Coastal Defence and the Historic Environment: English Heritage Guidance*. This sets out in detail the policies that underpin coastal management and offers guidance on conservation of the historic environment in coastal areas, including the integration of information and advice from local authority Historic Environment Records (HERs) in the shoreline management planning process. However, because little systematic survey has been carried out on our unique coastal heritage, the records held by HERs are very limited, and the sector's ability to take informed decisions and influence the shoreline planning process is impaired. English Heritage has, therefore, commissioned a number of coastal Rapid Coastal Zone Assessment Surveys (RCZAS) to begin to address this information deficit.

Although the most immediate driver of the rapid surveys has been the need to support the shoreline management planning process, the enhancement of local authority HERs will also underpin development control functions, allow strategies for long-term monitoring to be devised, and provide the baseline for future research strategies. In several parts of England, the survey programme has been especially timely, already allowing heritage data to be fed directly into the development of the pilot second generation of Shoreline Management Plans and Estuary Management Plans and Strategies.

Besides this, a better understanding of the coastal historic environment has permitted constructive dialogue with the Environment Agency to develop appropriate archaeological mitigation before specific flood risk management and habitat creation schemes.

The rapid surveys have been focused initially on those areas where coastal change, and hence potential loss of historic assets, is most rapid and pressing – North Kent, Essex, Suffolk and Norfolk. Initial survey has also commenced around the Isles of Scilly, in the Severn Estuary, Yorkshire and the North East.

The surveys comprise two stages: a Stage 1 Desk-Based Survey, drawing on existing HER entries, historic maps and aerial photographs, and forming part of English Heritage's National Mapping Programme (NMP); and a Stage 2 Field Survey, intended to investigate in more detail, through rapid walk-over survey, sites recorded during Stage 1, and to detect other site categories not visible from the air. Up-to-date information on the progress of these surveys, provided by partners in local authorities and field units, is available at www.english-heritage.org.uk>Public Policy>Coastal Policy.

Bronze Age socketed axe on the foreshore at Sutton Hoo, Deben Estuary, Suffolk. Scatters of unstratified artefacts are among the commonest 'site' categories noted during field survey. Finds such as this indicate the proximity of eroding archaeological deposits – and the challenge is then to locate them.

Aerial view of V-shaped fish trap at Holbrook Bay, Stour Estuary, Suffolk. This one has not yet been dated, but similar structures on the Essex coast have been dated by radiocarbon to the Middle Saxon period. These are the largest visible archaeological wooden structures in the UK, and their construction is thought to have involved aristocratic or monastic direction.

Suffolk

The Suffolk project is the furthest advanced, with both stages are virtually completed. The desk-based survey has recorded 1,140 new sites, many of which relate to Suffolk's 1940s military defences. Other site categories detected include oyster pits, fish traps, hulks and jetties, mostly of medieval and post-medieval date. A strip inland from the coast up to 2 km wide was also surveyed, permitting accurate mapping and recording of extensive prehistoric and Roman settlements and field systems, visible as crop marks, including a previously unknown villa.

During the field survey, 484 sites were recorded in the Suffolk estuaries and a further 56 from the open coast. In the estuaries, a diverse range of site types is present, including abundant post-built structures, mostly of unknown date, embankments, sluices, hards, wharves, docks and jetties, hulks, fish-traps and salterns.

Of particular note are Roman red hills (salterns) in the Alde Estuary; a massive V-shaped fish trap and enigmatic circular timber structures at Holbrook Bay on the Stour and Anglo-Saxon hurdle structures in the Deben Estuary at Sutton Hoo, subsequently

The *Tuesday of Rochester* at Orford Ness, Ore Estuary, Suffolk. She was a carvel-built sailing barge, probably of 19th-century date. The significance of hulks of such workaday vessels, as part of the heritage of a maritime trading nation, has only relatively recently been appreciated.

Part of the Late Neolithic submerged forest on a peat shelf at Purfleet, by the Thames Estuary, Essex, being recorded by Ellen Heppell (Essex County Council Archaeological Field Unit). In the distance is the Queen Elizabeth II Bridge, part of the Dartford Crossing. Only in coastal exposures can one walk through woodland more than 4,000 years old.

radiocarbon-dated and investigated in greater detail with funding from the Sutton Hoo Society. Further work is planned.

Essex

A different approach was adopted during the surveying of the predominantly estuarine and island coastline of Essex. Field survey undertaken in the 1980s focused more on detecting prehistoric sites rather than the more recent coastal heritage. It has, however, provided potential for re-surveying areas to provide an assessment of site losses since that time.

During the 1990s, the NMP had focused attention mainly on medieval and post-medieval sites on coastal marshes, and related work had detected six wooden fish-traps, some dated to the Middle Saxon period and covering areas of several square kilometres. The new field survey carried out during 2000–3 could therefore be targeted on areas of coast that had been omitted during previous work, on site categories that had been neglected, and on some especially significant sites known from the earlier work.

Along creeks and channels near Canvey Island, Foulness and Mersea, 264 new sites were recorded, including earthworks, oyster pits, red hills, hulks, wharves and jetties. Re-surveying sites first found in the 1980s, and monitoring them over a three-year period, showed that some had been virtually destroyed, and others were actively eroding. None of the sites examined could be considered stable. At the Neolithic settlement site of The Stumble in the Blackwater Estuary, erosion is currently exposing new areas of the site and littering the

A Late Iron Age / Early Roman 'red hill' – a salt-producing site – at Blackwater Estuary, Essex. The vivid fired red colouring of these sites makes them very conspicuous during survey, but hardly any now survive in an undamaged condition. The high density of these sites shows that this apparently natural landscape was, 2,000 years ago, an industrial

shore with unstratified artefacts. Funding has been obtained from the EU Planarch2 Interreg project for further recording work at this site and others.

Norfolk

The Norfolk survey is also building on an existing knowledge base. The NMP desk-based survey has recorded numerous coastal sites, ranging from an entire 'fossil' medieval landscape, including numerous saltern mounds at North Wootton on the Wash, through to World War II defences all along the coast; field survey has supplemented this information. New records have included a Palaeolithic hand-axe, prehistoric pottery and flints stratified in beach sediment exposures, wooden structures and numerous coastal military defences. The survey has also highlighted areas where coastal management schemes have resulted in sand accretion, so that sites such as the medieval 'lost village' of Eccles, visible on the beach in the 1980s, can now no longer be seen. In contrast, at other locations, such as the area around 'Seahenge' at Holme-next-the-Sea, erosion is rapid and sites are actively being destroyed.

North Kent

In 2004, during the course of the North Kent survey, a prehistoric site was discovered on the Hoo Flats of the River Medway. Features at the site include several pits containing burnt flint, flint-working debris (including an axe-thinning flake) and pottery fragments that date the site to the Mid to Late Neolithic period. Timbers driven into later deposits, in a rough alignment, could represent a trackway. The site is subject to continued coastal erosion. Another inter-tidal Neolithic site has been recorded on the opposite side of the Medway at Lower Halstow. The survey has also identified new inter-tidal Late Iron Age / Romano-British salt working and butchery sites within the Medway, particularly around Burntwick Island, as well as the remains of medieval fish weirs and pottery at Nor Marsh.

Isles of Scilly

Ideally, coastal survey should be seamless, encompassing terrestrial, inter-tidal and sub-tidal sites, all recorded to the same standard – a principle that is incorporated in the proposed new system of designation presented in the recent DCMS consultation document on marine archaeology. In practice, sub-tidal survey in the sediment-laden waters of the North Sea is problematic and impossible at the speed required of the rapid surveys. The Isles of Scilly survey was an experimental project, being the first to be commissioned by English Heritage since the National Heritage Act 2002 extended its remit to include the historic environment out to the 12-nautical mile limit. As well as coastal and inter-tidal sites, the project included the marine resource and assimilated maritime data into the report and the Isles of Scilly Historic Environment Record. The Historic Environment Service of Cornwall County Council carried out the project for English Heritage between May 2003 and April 2004, and was also asked to carry out an appraisal of the implications of extending the survey below the low-water mark.

Shoreline plans

If progress with English Heritage-sponsored survey work has been rapid, so, too, has the development of shoreline management planning. A second generation of plans has commenced with three pilots, two on the south coast and one in East Anglia. Concurrently, Estuary Management Plans and Strategies, covering the Wash and Suffolk and Essex estuaries, are being developed. Informed by Defra's FutureCoast study, these second-generation plans are beginning to illustrate the potentially dramatic changes that will occur at the coast over the next century, the challenges which will be faced by those managing its heritage, and the need for organised partnerships to protect or record threatened sites and buildings.

A current case is at Blakeney Freshes on the North Norfolk coast. Here, a shingle spit is migrating southwards, sometimes blocking the channel of the River Glaven, which results in flooding of the nearby village of Cley and environmental damage to an adjacent nature reserve. The Environment Agency's solution is to cut a new channel to the south, leaving the Blakeney Chapel scheduled monument isolated and vulnerable to destruction by erosion. Following discussions with the Agency, English Heritage accepted the need for the scheme and, together with Norfolk County Council and the National Trust, which owns the site, negotiated a programme of excavation to record the threatened deposits. Excavation and valuation have demonstrated human activity from the Neolithic period to the late Middle Ages.

Other sites will be similarly affected by current and future coastal change, whether wholly natural or the result of planned realignment schemes. The purpose of the rapid

Late-5th- or early-6th-century gold bracteate brooch recovered during evaluation of the Scheduled Ancient Monument of Blakeney Chapel, Norfolk, prior to Managed Realignment.

© English Heritage / Dave Hooley

Prehistoric wall extending towards South Hill, Samson: part of an extensive early field system surviving in the inter-tidal zone of the Samson Flats, Isles of Scilly.

surveys is to establish the scale of the challenge locally, regionally and nationally. In turn, this will allow English Heritage and its partners to identify priorities for enhanced coastal defence measures or programmes of recording in the face of necessary change. Difficult choices will have to be made, but the Government's programme of Shoreline Management Plans provides, for the first time, a robust, long-term framework within which these decisions can be taken and their implications planned for.

ACKNOWLEDGEMENTS
Ian Oxley, Mark Dunkley (Wessex Archaeology), David Robertson (Norfolk Archaeological Unit); for illustrations, Ellen Heppell (Essex County Council Archaeological Field Unit), Jayne Bown (Norfolk Archaeological Unit) and Linzi Everett (Suffolk County Council Archaeological Field Team).

NMR 21836/01 © English Heritage.NMR

Martello tower at Slaughden, Aldeburgh, with beach replenishment work taking place, 2002. This Napoleonic sea defence has already suffered serious erosion of its seaward defensive works, and its long-term survival depends on holding the existing shoreline by retaining adequate sea defences.

The Aggregates Levy Sustainability Fund

The marine environment

Introduced by Ian Oxley *Head of Maritime Archaeology*
and Christopher Scull *Head of Historic Environment Commissions*

English Heritage is a distributor, on behalf of Defra, of a fund that helps address environmental impacts of aggregates extraction.

The first year of the ALSF coincided with English Heritage's new responsibilities for the marine historic environment. We were able to extract additional value from the fund by supporting a number of projects that addressed both the priorities of the ALSF and our strategic agenda for the marine historic environment. Following an initial two-year pilot scheme, the creation in April 2004 of a funding stream dedicated to the marine environment within the ALSF has allowed us to build on those initial successes to develop a programme aimed at ensuring sustainable management of the resource through projects that

- enhance the information and understanding necessary for informed planning;
- develop techniques of prediction and evaluation;
- develop mitigation strategies;
- promote best practice through training, raising awareness and exchanging information.

In developing and delivering our marine ALSF programme, English Heritage works closely with the marine aggregates industry and partners in the public, professional and academic spheres. English Nature, the Office of the Deputy Prime Minister (ODPM), and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) also distribute marine ALSF funds; we are committed with the these partner agencies to developing integrated approaches to the marine environment. The ALSF marine steering group, convened by Defra, provides a forum through which all stakeholders contribute to oversight and coordination of ALSF marine funding. The projects summarised below illustrate the range and quality of work that English Heritage is able to support through the ALSF Programme, and they demonstrate the enormous contribution that the ALSF is making to informed conservation of the marine historic environment.

Further information about the English Heritage ALSF Programme and projects is available from www.english-heritage.org.uk.

Projects

Areas suitable for marine aggregate extraction often contain shipwrecks within their boundaries. Wrecks, in all their forms, are considered in the course of the Environmental Assessment that accompanies applications to dredge marine aggregates. Various existing datasets, secondary sources and geophysical surveys can be used to gauge their likely presence, extent, character and period, but these sources cannot, in themselves, establish the relative or absolute importance of known or potential wrecks, because the 'importance' of a wreck arises from a context far wider than the aggregates area under consideration.

The Importance of Shipwrecks project seeks to develop and trial a framework for gauging the importance of shipwrecks that will draw on schema for managing and researching ships and shipwrecks. This project is based on the current non-statutory designation criteria adopted by the Advisory Committee on the Historic Wreck Sites for gauging the importance of shipwrecks in the context of their statutory protection under the Protection of Wrecks Act 1973. The project will also review other statutory and non-statutory heritage initiatives – for example, the Monuments Protection Programme and the criteria for determining structures to be listed under the Planning

(Listed Buildings and Conservation Areas) Act 1990 – in order to align elements of the marine historic environment with existing terrestrial designation practices.

The loss of a vessel at sea (in peacetime) generally occurs as a result of navigational errors or adverse weather conditions. Predictive modelling can be used to determine potential concentrations of shipping losses by mapping navigational hazards through the UK's extensive hydrographical archives (consisting of historical charts, sailing directions and pilotage notes). However, the Mapping Navigational Hazards as Areas of Maritime Archaeological Potential project goes further, by correlating such hazards with offshore geological cartography in order to identify areas where high potential shipwreck losses and high seabed preservation potential coincide within offshore mineral deposits. Such information will assist industry, regulators and curators in giving guidance on the possible impact on the marine historic environment through the regulation of dredging for sand and gravel.

The Innovative Approaches to Rapid Archaeological Site Surveying and Evaluation in the Marine Environment and Transitional Zones project will investigate the potential of geophysical, remote survey equipment to allow rapid, detailed investigation of submerged archaeological sites and their immediate surroundings, for enhanced understanding of the environmental settings in which the sites are located. Through the use of rapid mapping techniques, it is anticipated that quantifiable environmental changes over time can be cost-effectively monitored on sites in order that the potential impact of anthropogenic activity such as aggregate extraction and natural cycles of change can be assessed more accurately. A secondary aim is to establish the optimum configuration of acoustic instruments, using a combination of backscatter and bathymetry information to provide the best data for informed management decision-making. This project will use a number of innovative techniques to investigate maritime archaeological sites.

Discharging 5,000 tonnes of marine aggregate at Greenwich Wharf, London. In the background, the Millennium Dome on the south bank and, beyond a curve of the River Thames, the Canary Wharf tower to the north.

The Lincshore Beach Replenishment scheme, Lincolnshire. Large-scale beach nourishment is possible only from marine sources, where large volumes landed directly from dredgers avoid the need for fleets of heavy lorries. Here, a dredger, coupled to a floating pipeline, discharges marine sand directly onto the beach.

Where archaeological sites (principally wreck material) are identified within licensed aggregate extraction areas, dredging exclusion zones are constructed around them in order to afford *in situ* preservation. Both the marine aggregate and the maritime archaeological communities acknowledge that neither the definition of these exclusion zones nor the potential direct or indirect impacts of dredging on marine or coastal archaeology are well understood. This mirrors the academic paucity of knowledge of the physical controls on underwater site formation in general. The Modelling Exclusion Zones for Marine Aggregate Dredging project will bring together experience and expertise from a variety of different disciplines – archaeological site formation studies; sediment and fluid dynamics (both in the field and in the laboratory); numerical modelling of dredge plume and coastal zone impacts; and direct experiential knowledge from the dredging industry – to study these issues and provide accurate, appropriate and cost-effective recommendations for defining exclusion zones in the future.

Turning to coastal archaeology, English Heritage has commissioned an investigation into the relationship between beach replenishment schemes and extraneous archaeological material derived from offshore aggregate contexts. Large-scale beach replenishment is possible only from marine aggregate sources, where large volumes landed direct from dredgers avoids the need for the overland transport of material. While the historic environment has been considered during the course of beach replenishment schemes, investigations have largely been associated with impacts on submerged material within the offshore area from which aggregate is extracted or the burial of archaeological material in the inter-tidal zone of the area being recharged. Little attention has been given to archaeological material from an offshore context that could be deposited on recharged beaches. Such extraneous material, traditionally labelled 'contamination' in an archaeological context, can (if discovered and reported) serve to misinform Historic Environment Records. The Beach Replenishment and Derived Archaeological Material Evaluation Study comprises a desk-based assessment to examine the relationship between beach replenishment schemes and the historic environment, through the examination of archaeological material deposited on replenished beaches in relation to its former offshore context.

The requirement for coordination and dissemination of the Marine ALSF projects has prompted English Heritage to organise a series of Technical Meetings to bring together internal and external specialists to discuss topics such as wrecks and shipping, and submerged prehistory. Further meetings are anticipated throughout 2005–6, including a seminar on access and education relating to the marine historic environment.

Mark Dunkley, Maritime Archaeologist
Kath Buxton, ALSF Programme Manager

Naval Heritage

Managing change in the Royal dockyards

John Schofield *Head of Military Programmes*
Rebecca Child *Historic Buildings Architect, South West Region*
Peter Kendall *Team Leader, South East Region*

Historic Royal dockyards continue to serve a military function or offer potential for redevelopment.

The Royal dockyards of Plymouth, Portsmouth, Sheerness and Chatham are significant historic and archaeological sites, currently protected through a combination of scheduling, listing and conservation area designations. They are also subject to a diversity of uses: some (Devonport and major parts of Portsmouth) continue to function as naval bases; one is in commercial use (Sheerness); and areas at Portsmouth and much of Chatham are primarily museums. Other yards, such as the Royal William Victualling Yard at Plymouth and Gunwharf in Portsmouth, have seen regeneration for retail or domestic use.

Much of this change has occurred in the past few years, informed by national studies of the form, fabric and historical development of these yards (Coad 1983,1989, Douet and Listing Team 1998, Listing Team 2003, Evans 2003, 2004). A characterisation of the Portsmouth and Plymouth yards has also been completed (see *Conservation Bulletin* 44, Firth, 36). Recent developments at Chatham, Sheerness and Royal William Yard are summarised here.

Dockyard archaeology

At Chatham, there is steady progress in finding new and appropriate uses for the dockyard buildings by the Trust responsible for the site. There have been no major new discoveries recently, but work continues to identify the ship that was broken up and used to floor the Wheelwrights Shop. The finding of these ship's timbers in the 1990s has been described as the most significant ship discovery in northern Europe since the salvaging of the Mary Rose. Unlike underwater wrecks, many of these timbers preserve their paintwork. How best to conserve and display these presents a daunting challenge to the Chatham Trust.

Recent work at Chatham has focused on the site of the former Gunwharf that lies to

NMR BB94/20961 / Peter Williams © Crown copyright. NMR

NMR BB94/10321 / M Hesketh-Roberts © Crown copyright. NMR

Priddy's Hard, Gosport, near Portsmouth, one of the major naval centres in the region. Acquired for the Royal Navy in the 1750s to store military equipment, and in military use until 1989, much of the site is now a museum.

This former Royal naval dockyard at Sheerness is now a commercial port.

the north of the Georgian dockyard. The gunwharf was originally the site of the Tudor Chatham Dockyard, founded here in 1547. The heyday of the gunwharf was in the 18th and 19th centuries, but it continued in use until after World War II. Following closure, most of its buildings were demolished. The site and surviving buildings are affected by regeneration-led proposals by their owner, Medway Council.

English Heritage expressed concern for the impacts on buried archaeology and surviving Ordnance buildings and fortifications, and invited the owners to join in commissioning a desk-based study from Oxford Archaeology. This study has clarified the high heritage significance of the site, resulting in new schedulings and listings. Medway Council has moved from possibly wanting to demolish buildings to repairing one of these as a new library.

For the Chatham Lines that defended the dockyard, there are major development threats arising from plans by Ministry of Defence and their PFI partners to raise capital for residential and other development. This has prompted documentary research on the development of the Lines, currently at draft stage. The MOD plans extend over the Medway to take in Upnor and Chattenden ordnance depots.

Both the Gunwharf and the Chatham Lines lie within the area proposed for the Chatham World Heritage Site. Great care will be needed to ensure that any new developments do not have an adverse impact here.

At Sheerness, a study in progress will examine the heritage significance of the dockyard and fortifications, and its interface with the economic importance of the commercial docks' operation. The aim is to find an agreed way forward with the Port Company, which avoids major conflict and yields a future for some of the significant at-risk structures presently landlocked within the active docks.

Change and development

The Royal William Yard at Plymouth, designed and built between 1824 and 1834, was one of the three major victualling yards that also processed food for onward distribution both to the fleet and other victualling depots. (The other two yards were the Royal Clarence at Gosport and the largely-vanished Royal Victoria at Deptford.) The Royal William Yard served the Royal Navy in the west of England. It was designed by Sir John Rennie (1794–1874) as a food factory for the Navy, in a robust neo-classical style in granite and Plymouth limestone. The Yard is the most complete victualling yard in the world and of international and national importance: most of the buildings are now listed Grade I and II*.

Two of the five major buildings on the site, Clarence Store and Brewhouse, are currently being redeveloped as apartments by the developers Urban Splash, who are also preparing a Masterplan for the rest of the Yard. The owner of the site, the South West Regional Development Agency, is carrying out external and structural repairs in advance of the conversion work, principally re-roofing in Welsh slates and carrying out masonry repairs to the degraded Plymouth limestone and granite walling.

This major redevelopment has already involved the preparation of a Conservation Plan for the site and measured drawings of the buildings. The work to individual buildings includes recording by drawing and photography, together with analysis of the processes once carried out within them.

Informed conservation

What underpins work at all the yards is the need to understand their heritage values prior to any redevelopment scheme or significant alteration taking place. A Conservation Plan and Masterplan are in place for the Royal William Yard. Similar studies are being updated at Chatham dockyard, and research is underway at Sheerness and the Chatham Lines. Character-based studies have been completed for the yards at Portsmouth and Devonport. We cannot expect these important sites to remain unchanged, but we can expect change and development to occur within the context of informed conservation. Alongside the major national studies, such as those by Coad and Evans, current work at England's Royal Dockyards is an example of how this can be best achieved.

REFERENCES

Coad, J 1983 *Historic Architecture of the Royal Navy*. London: Victor Gollancz

_____ 1989 *The Royal Dockyards 1690–1850: Architecture and Engineering Works of the Sailing Navy*. Aldershot: Scolar Press

Douet, J and Listing Team 1998 *Thematic Survey of the Naval Dockyards: Summary Report* (Thematic Listing Programme). Internal English Heritage report

Evans, D 2003 *The Ordnance Yards: Reports on Medway, Portsmouth and Plymouth Areas*. Internal English Heritage report

_____ 2004 *Building The Steam Navy*. London: Conway Maritime Press

Listing Team 2003 *Thematic Survey of the Ordnance Yards and Magazine Depots: Summary Report* (Thematic Listing Programme). Internal English Heritage report

Sheds at Chatham Naval Dockyard, Kent. Used for building ships from its first phase in 1547 until its closure in the early 1980s, this historic Royal dockyard is now a museum.

Working with the Marine Industry

Marine aggregates and the historic environment

Mark Russell *Development Manager, British Marine Aggregate Producers Association*

A partnership between the marine aggregate industry and English Heritage has produced a world-leading guidance document.

The origins of sand and gravel extraction from the sea can be traced back to the 1700s, when material was removed from sand banks at low water to be used as ballast in un-laden sailing ships. Today, the UK marine aggregate industry produces over 22 million tonnes a year from 70 production licence areas located around the coastline of England and Wales.

The contribution of land-based quarrying to our understanding of the historic environment is well documented, and in recent years some of the most important finds have been associated with sand and gravel extraction. As the marine aggregate industry targets similar deposits of sand and gravel, located in over 20 metres of water, there exists the potential for items of archaeological significance to be present. This has brought some unique challenges to industry, regulators and curators.

Through the extraction of sand and gravel, dredging activity inevitably disturbs the seabed. The potential therefore exists for features of archaeological interest that may be present (drowned landscapes, shipwrecks and artefacts) to be similarly disturbed. Acknowledging this fact, the industry has worked to address these issues by becoming an integral part of the solution rather than part of the problem: by developing an archaeological guidance note in partnership with English Heritage. *Marine Aggregate Dredging and the Historic Environment: Guidance Note*[1] contains a comprehensive review of the issues; it provides advice and procedures to ensure that marine archaeology can be considered at every stage throughout the offshore development process – from accessing new licence areas, to mitigating and monitoring sensitive sites and evaluating finds recovered during production.

Furthermore, the broad guiding principles that have been established could equally be applied to other marine sectors, as the marine aggregate industry is far from unique in its potential to disturb the marine historic environment. In recognition of the groundbreaking nature of this work, the guidance note was awarded a certificate of commendation in the 2004 British Archaeology Awards as a project that demonstrated a commitment to professional standards and ethics in archaeology.

From a marine developer's perspective, a greater level of understanding, knowledge and context allows a more confident assessment of significance to be made. This in turn allows us to manage, mitigate and monitor our operations more effectively, and therefore to minimise the potential for adverse effects. In this respect, the partnership between the marine aggregate industry and English Heritage represents an excellent example of sustainable development in practice.

1 BMAPA and English Heritage 2003 *Marine Aggregate Dredging and the Historic Environment: Guidance Note*. London: British Marine Aggregate Producers Association and English Heritage (available from www.english-heritage.org.uk and www.bmapa.org)

Submerged Archaeological Landscapes

Evidence of human migrations

Nic Flemming *Southampton Oceanography Centre*

Studying the prehistory of the UK continental shelf and North Sea basin is the key to understanding how advanced cultures evolved.

During the last million years, there have been six to eight major glaciations, during which ice several kilometres thick covered Scandinavia, most of the British Isles, the whole of Canada and part of the USA, and mountain glaciers expanded on high ranges around the globe. Each glaciation lasted for about 120,000 years, and the ice accumulated in a series of growth phases (stadials), interspersed with partial meltings (interstadials). The final maximum ice sheet then melted more or less continuously and completely over a period of about 20,000 years to the present time, where large ice sheets remain only on Greenland and Antarctica.

In addition to the big climatic swings of tens of thousands of years, there were shorter bursts of activity, such as the melting phases or 'Heinrich Events', which released masses of icebergs and fresh water into the Atlantic over periods of about 250–500 years (Roche *et al* 2004), and the 'Dansgaard/Oscheger (D/O)' oscillations during the middle of the last glaciation (60–20ka BP), when the temperature swung through a range of 7°C or more about 15–20 times. The impact of this variability on the prehistoric archaeology of Europe is described by Van Andel and Davies (2003).

Early flora and fauna

The snow which precipitated to build up the ice sheets was extracted as vapour from the sea by evaporation, and the volume of the ice was so great that the global sea level at the peak of each glaciation dropped about 120–150m lower than at present. At the times of lowest sea level, the continental shelf of the world was exposed to the atmosphere and covered in vegetation and fauna adapted to the local climate. During the last half million years, Britain was an island for only a few tens of thousands. When northern Europe was covered by ice, the climate on the exposed UK continental shelf was periglacial tundra, but in the interstadials such as Oxygen Isotope Stage 3, and after the melting of the last ice sheet, the shelf around the UK was colonised by grasses, forests, an extensive fauna of reindeer, bears, ox, mammoths and wolves, and scattered bands of people. Lambeck (1995) provides a useful set of maps of the coastline at different dates during the last 22,000 years.

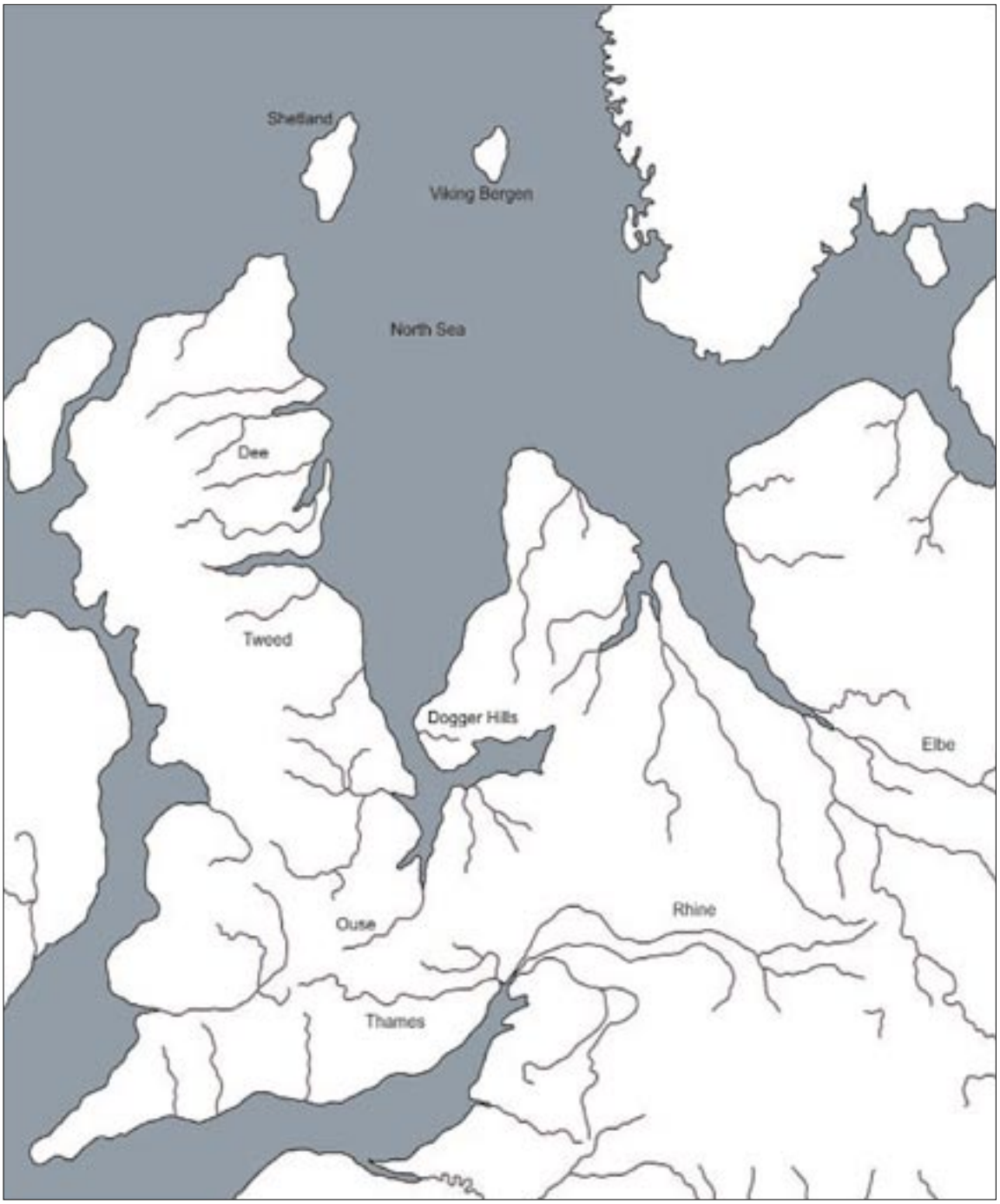
Earliest hominids

The earliest hominid occupation in the UK is at Boxgrove (Pitts and Roberts 1997), dating from about 700,000 years ago, and sites in East Anglia are almost as old, whereas Pontnewydd Cave near the coast of North Wales has Neanderthal remains from 225,000 years ago. From these and other data, we can see that people occupied the British Isles most of the time between ice ages, when climate was mild, and were driven out again when the ice extended southwards. The Ancient Human Occupation of Britain project, led by Chris Stringer, has clearly identified the periods when hominids and modern humans could have easily occupied the British Isles. Although boats may have been used for crossings during the Mesolithic period, and just possibly as early as 50ka BP, any earlier access to Britain must have been by walking across the dry shelf. Since there would have been little attraction in trying to live on the present land-mass of Britain at the time of maximum ice extent, the phases of migration into or out of Britain would generally have taken place at intermediate stages, when

large parts of the shelf were dry, and the ice cap did not extend too far south.

Submerged evidence

There is much debate as to how close to the ice people chose to live. Pitulko *et al* (2004) have shown that people were living in the Arctic, north of what is now Russia, before the peak of the last glaciation. Thus it is possible that throughout the glaciation there were some people who had been forced away from ice caps but chose to exploit sea mammals and live close to the sea ice, rather than retreating as far as southern Europe. Evidence for this would inevitably be below sea level now. The excavation of the Paviland cave in southern Wales shows that people were living there very close to the ice edge at the time of the glacial maximum (Lynch *et al* 2000, 19). Findings of worked mammal bones in the central North Sea (Louwe Kooijmans 1970/71; Verhart 2004) show that people were living and hunting there during periods of low sea level. The submerged Palaeolithic site at Fermanville, near Cherbourg, shows that people were living 20m below the present sea level 45ka BP (Scuvée and Verague 1978). Momber (2001) shows that Mesolithic people were occupying sites on the bed of the Solent at a depth of 11m.



For thousands of years following the last ice age, Britain was a peninsula of the European continent. Extensive lowlands existed beyond most of today's shores, and much of the English Channel and Southern North Sea were land. It is likely that our predecessors, re-inhabiting Britain as the climate improved, made extensive use of these areas, possibly concentrating on the river valleys that once traversed these lands. Source: *Marine Aggregate Dredging and the Historic Envirionment: Guidance Note* (Russell, 19).

The continental shelf – the floor of the North Sea, the English Channel, Irish Sea, Celtic Sea, and the northern shelf around Scotland and the Western Isles – was thus much more than a land-bridge to Europe. When not actually covered by ice, it was probably a reservoir or refuge where tribes lived and hunted the megafauna and marine mammals at the ice edge. As the ice was melting between 20,000 and 10,000 years ago, people who had been living on the continental shelf, and in northern France and western Europe, moved northwards, and by 12,000 BP they had moved across the North Sea basin into what is now Denmark, Norway and Britain. The Danish data (Pedersen *et al* 1997; Fischer 1995; Lubke 2002) show the rapid Mesolithic growth settlement in the Baltic by people who combined coastal living, seafaring and hunting excursions inland. The general implications of these processes are discussed in the conference volume on the North Sea edited by Flemming (2004).

Importance of the prehistory of the seabed

The study of the prehistory of the seabed is thus an integral part of understanding how humans occupied Britain and northern Europe, how they responded to each expansion and contraction of the ice sheets, and how these islands were finally occupied in the late Palaeolithic period. Ignorance of the detailed prehistoric archaeology of the British continental shelf is an obstacle to understanding how advanced cultures developed in northern Europe. The transition to the Mesolithic period with boats, fishing, fish traps and constructed huts, and then to the Neolithic period with the domestication of animals and agriculture, took place before the sea reached its present level, and much of the evidence is still below the sea.

REFERENCES

Fischer, A 1995 *Man and the Sea in the Mesolithic* (Oxbow Monographs number 53). Oxford: Oxbow Books

Flemming, N C (ed) 2004 *Submarine Prehistoric Archaeology of the North Sea*. York: Council for British Archaeology and English Heritage

Lambeck, K 1995 'Late Devensian and Holocene shorelines of the British Isles and North Sea from models of glacio-hydro-isostatic rebound'. *Journal of the Geological Society, London* **152**, 437–48

Louwe Kooijmans, L P 1970–71 'Mesolithic bone and antler implements from the North Sea and from the Netherlands'. *Ber. Rijksdienst oudheidk. bodemonderz* **20–21**, 27–73

Lubke, H 2002 'Steinzeit in der Wismarbucht: ein Uberblick'. *Nachrichtenblatt Arbeitskreis Unterwasserarchaologie* **9**, 75–87

Lynch, F, Aldhouse-Green, S, and Davies, J L 2000 *Prehistoric Wales*. Stroud: Sutton Publishing

Momber, G 2001 'Six fathoms down off Bouldnor Cliff: a Mesolithic site' in Sparks, B, Momber, G, and Satchell, J (eds) A *Decade of Diving, Delving and Disseminating: Hampshire and Wight Trust for Maritime Archaeology, 1991–2001*. Southampton: Southampton Oceanography Centre, 65–9

Pedersen, L D, Fischer, A, and Aaby, B 1997 *The Danish Storaebaelt since the Ice Age: Man, Sea and Forest*. Copenhagen: Storaebaelt Fixed Link and the National Museum of Denmark Publications

Pitts, M and Roberts, M 1997 *Fairweather Eden*. London: Century

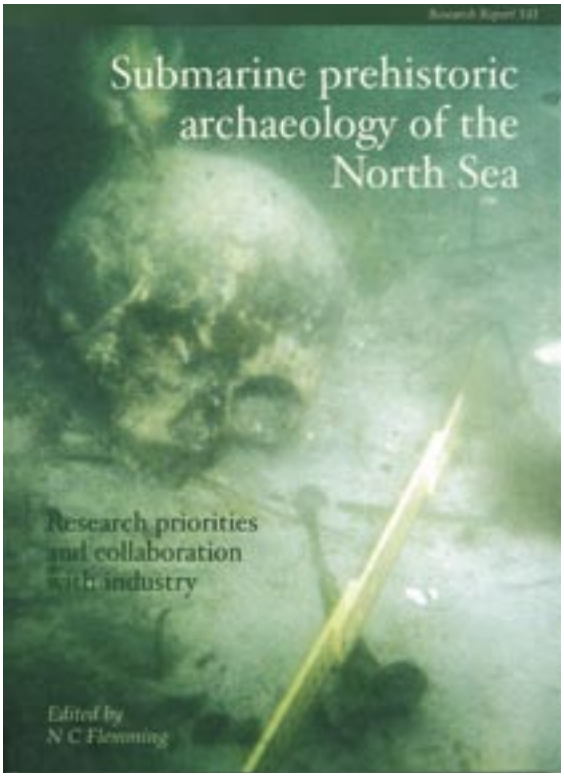
Pitulko, V V *et al* 2004 'The Yana RHS Site: Humans in the Arctic before the Last Glacial Maximum'. *Science* **303**, No. 5654, 52–6

Roche, D, Paillard, D, and Cortijo, E 2004 'Constraints on the duration of freshwater release of Heinrich Event 4 through isotope modelling'. *Nature* **432**, 379–82

Scuvee, F and Verague, J 1988 *Le gisement sous-marine du Paléolithique Moyen de l'anse de la Mondrée à Fermanville (Manche)*. Cherbourg: Ministère des Affaires Culturelles

Van Andel, T H, and Davies, W (eds) 2003 *Neanderthals and Modern Humans in the European Landscape During the Last Glaciation: Archaeological Results of the Stage 3 Project* (McDonald Institute Monographs). Oxford: Oxbow Books

Verhart, L 2004 'The implications of prehistoric finds on and off the Dutch coast' in Flemming, N C (ed) *Submarine Prehistoric Archaeology of the North Sea*. York: Council for British Archaeology and English Heritage, 57–61



The cranium of a young woman at the Tybrind Vig submerged Mesolithic site, Denmark. This volume – a collection of papers presented at an English Heritage workshop on the subject of North Sea submarine prehistory and relations with industry – recommends ways to cooperate on future research and protection of prehistoric sites on the sea floor.

The West Pier, Brighton
Disrepair and destruction

Richard Morrice *Historic Buildings Inspector, South East Region*

The loss of this Grade I pier highlights the importance of a national strategy for buildings at risk.

That the West Pier is the greatest pier ever built is without question. That it should not now be possible to fund its repair is one of the great post-war defeats for architectural conservation. The issues involved are many, and the history of the pier will show what mistakes were made in trying to give it a future. What is almost certainly true is that, had the current regime for arresting the decay of listed buildings – English Heritage's Buildings at Risk Strategy – been in place in the mid 1970s, the pier would still be with us. Time, and the assault of the weather, eventually made the costs so high that repair became impossible. The pier did, however, have the benefit of underlining how important it is to stake out significance in detail when making decisions about a site. The case underlines, therefore, the general approach to conservation that is most usefully set out in the Burra Charter.

Significance

The West Pier has significance of several kinds and on several levels. Built from 1863 to 1866, the West Pier was a highlight, if not the climax, of seaside pleasure pier development. Eugenius Birch, the most important of the Victorian pier engineers, here built the most elegant pier structure then possible in iron and timber, with a lightness derived from using the smallest number of columns possible (none of which were raking), and did it at a scale commensurate to its setting. Prior to the West Pier, only Birch's Blackpool North Pier of a couple of years previous was of similar size, and this was built with a less elegant substructure. In that sense, the West Pier is the culmination of a development that Birch had himself begun at Margate Pier (1853–7, where he first used screw piles) and at Blackpool North Pier (1862–3). At the West Pier he perfected screw piles, using two sorts, one like those used at Margate and Blackpool, appropriate for anchoring into sand; but these proved not to be sufficient for chalk and were superseded during building.

The West Pier, in its use of larger kiosks than earlier piers, was also the essential precursor to Hastings Pier (1869–72), the first to have been built with an integral pier-head pavilion. It also introduced festive architecture to the seaside. It was not the first building to be built by the sea that took this line, but it was the leisure building that made it obligatory to build in 'fun' styles at the seaside.

The scale of the pier was matched by the quality of aspiration of the architecture. It was designed much more with monumentality in mind than earlier piers, and it is one of the very few that were consciously laid out as part of a grand ensemble. First, instead of making the transition to the lower level of the pier from the seafront by a ramp alone, it used spacious flights of steps (although side ramps were provided for bath chairs – a very early example of disabled access). Second, the pier is one of the few that were consciously placed so as to be part of a greater whole. The building is arranged symmetrically along the centre line of Regency Square, so that the pier reads as part of a much larger, monumental piece of town-planning than was usual for piers that were generally sited for commercial rather than architectural impact. Third, it was constructed of cast iron of the highest quality, the quality of the moulding being very high. Birch modelled its buildings (the various kiosks) and its architectural features on styles that were not only locally available but were also of the greatest celebrity – largely and freely from the Royal Pavilion.

The building of the West Pier during the mid 1860s was a mark of the local concern that was felt over the possible loss by Brighton of its social cachet as a fashionable resort. However, changes in the market for leisure in seaside resorts, cheaper travel, the introduction of education and particularly of Bank Holidays

The West Pier, Brighton (Grade I), built in the mid 1860s, shown here in May 1970, with its historic promenade and pavilion.

during the 1870s and 1880s meant that Brighton generally – and the West Pier in particular – later needed to change its approach to visitors. As at all piers, facilities were added, especially under competition from the Palace (now Brighton) Pier, which replaced the Chain Pier from 1891. It is no surprise to find that the Pavilion was built at the same time as the new pier. The Concert Hall followed during World War I.

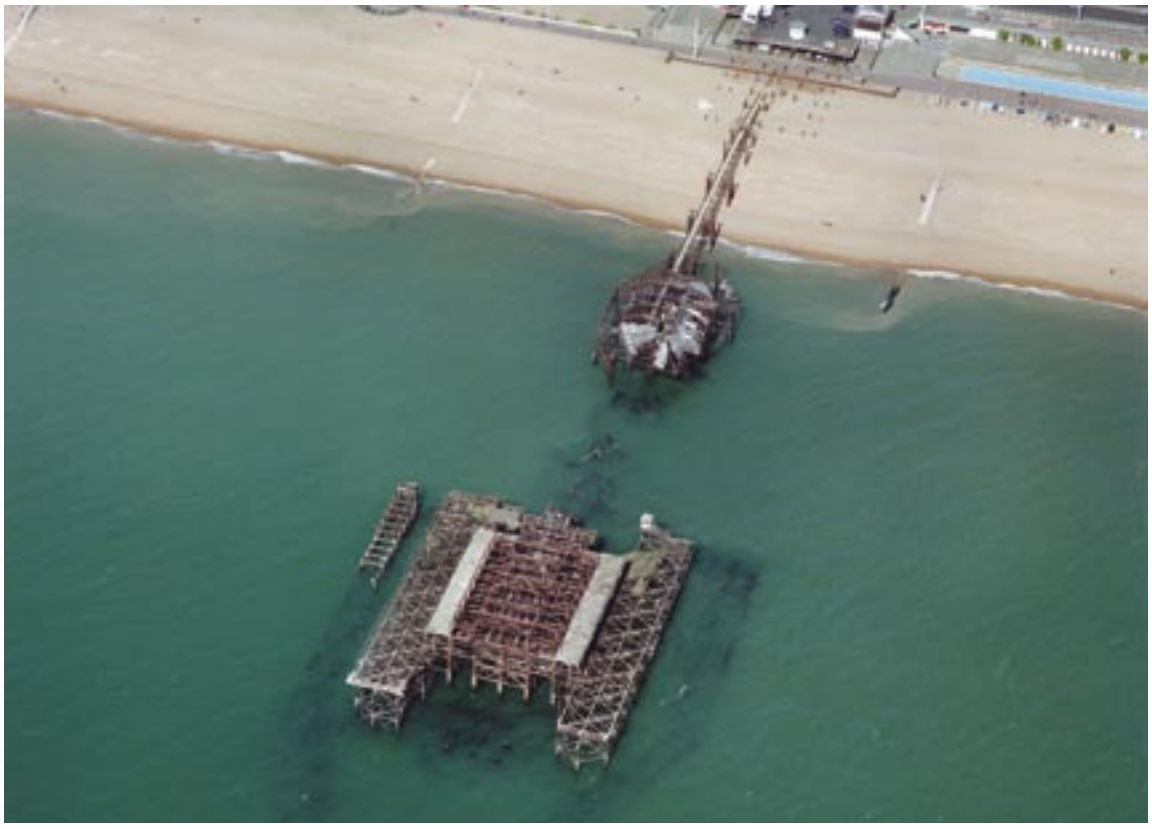
Spiral of decline

Why has it proved impossible to save the acme of pleasure piers? All piers are essentially fugitive structures, but those along the Sussex coast are peculiarly vulnerable due to sea conditions that lead to the largest swell in UK waters. Piers – being buildings of cast-iron (proof against rust but without bending strength), wrought-iron (not much better against rust than mild steel, but with some bending strength), steel (only after about 1900, not good against rust but with some bending strength) and timber (subject to rot) – need to be repaired continually. Their susceptibility to storm damage is also well known, especially along this stretch of coast. Piers therefore need to be maintained continually if they are not to begin a spiral of decline.

Unfortunately, the history of the West Pier was not one of regular maintenance. Following the last war, when it had been partially dismembered to save it from use as a landing stage for invasion forces, it suffered from a general lack of maintenance, which resulted first in the closure of the pier-head in 1970 and then in full closure in 1975. That there had been so little maintenance is perhaps understandable, given its problematic location at the western end of Brighton seafront, away from the tourist heart of Brighton. The intention of its original backers – to provide Brighton with a more exclusive attraction – was always problematic; had it been built at the end of West Street, it would have been more profitable and may have survived more readily.

During the later 1970s, the pier had been taken over by the Brighton West Pier Trust, the intention being to repair the structure and put it back to use as a pleasure pier. Consideration of the relative importance of English pleasure piers by the Historic Buildings Council, following on from earlier research jointly sponsored by the Industrial Archaeology Panel of the Council for British Archaeology and the Victorian Society, underlined the importance of the West Pier. Grant funding was sought from the Historic Buildings Council, unsuccessfully at first; but then between 1986 and 1989, English Heritage and the National Heritage Memorial Fund combined to assist a scheme of repair. Only a small section was repaired, however, before the offers were withdrawn during discussions concerning a scheme for commercial redevelopment which, it was then felt, would effectively have denatured the pier. All at that time seemed lost, until the setting up of the National Lottery in 1994 offered the promise of sufficient funding for the repair of the pier.

Unfortunately, in any repair case, there is a point where the escalating cost meets the reducing amount of historic fabric, and this point was eventually reached during the storms of 2002–3.



The decline of the West Pier: March 2003, after the final storm of the New Year (above), and March 2004, after fires at the concert hall in March 2003 and the pavilion in May 2003 (below).

Some lessons learned

Is it possible, so close to the events, to suggest some lessons? When the remains of the pier head are demolished, as demolished they must now be, it will be the first total removal – if not demolition – of a Grade I listed building in England since 1975 (itself an inauspicious date in the history of the pier).

First, action to save a building at risk must be timely. The continuing decay of the pier led to an increase in repair costs and increasing risk of loss of historic fabric. If a comprehensive scheme had been developed even as late as a decade after the closure of the pier, there would not have arisen the time lag that has allowed the growth of a profound and self-fulfilling scepticism about the project. Any re-use of the pier would have had to fulfil commercial objectives, and those objectives would have conflicted with private and public interests in Brighton and Hove. Taken early, these interests would have been easier to argue with.

This suggests, second, the need for a strategy to deal with the problem. In the 1970s and early 1980s, not only did this not exist, in the sense of a strategy for dealing with buildings at risk, but also there was no national body capable of formulating such a strategy. By the late 1990s, English Heritage had developed its building at risk strategy and was able to formulate a response. Unfortunately, it was then too late.

If we are to profit from the loss of the West Pier, it must be in realising the promise that a comprehensive approach to buildings at risk offers. By not allowing buildings to fall into disrepair, we reduce the risk to historic buildings and sites. We should never again allow the loss of such a significant building.

Liverpool WHS
Key themes of a successful World Heritage Site bid

Malcolm Cooper *Planning and Development Director, North*

The historic environment of this newly inscribed WHS will serve as a foundation for regeneration.

On 2 July 2004, the UK's bid for world heritage status for Liverpool was accepted by UNESCO. This exciting outcome was the culmination of three years' intensive work on the city's historic environment, led by Liverpool City Council with the close support of English Heritage and the Department of Culture, Media and Sport. A wide range of other organisations gave their wider support to the bid, but it is the city's World Heritage Site Officer, John Hinchliffe, who must take the lion's share of the credit for this great success.

The city has had a long history, with its first charter granted in 1207. The World Heritage Site bid, however, focused on the 18th century through to the early 20th century, when Liverpool became a major maritime mercantile city, with international renown and influence. The city is now recognised as the supreme example of a commercial port at the time of Britain's greatest global influence.

Four main themes were drawn out in the bid. The first of these was the city's role in world history, focusing on world trade and the development of the British Empire. The city also had a crucial role in the Industrial Revolution, when increasingly large volumes of raw materials and finished goods passed through its port. The import of raw cotton for the Lancashire textile industry, for example, increased 50 times between 1700 and 1790. The city's role in the movement of people, both to Europe and in particular to the New World, was also of particular significance.

The second theme was the city's tradition of innovative development. Perhaps most well known was the development of its dock technology. The city boasted the world's first commercial enclosed wet dock, opened in 1715. Of the subsequent massive developments in dock infrastructure, the work of Dock Engineer Jesse Hartley in the mid 19th century is of particular importance. The surviving Albert Dock, begun by Hartley in 1841 and opened in 1846, is of particular importance, with its secure warehouses of fireproof construction. The city's innovative development also included the wider transport infrastructure – canals, railways and a spectacular late-19th-century overhead railway.

The third theme for the bid was Liverpool's historical and cultural collections. The city's rapid growth led to the wider development of its cultural activities, with benefactors creating and then donating materials to a series of cultural institutions. Of these, the Walker Art Gallery and the Liverpool Museum were founded in the late 19th century, and the Merseyside Maritime Museum in the early 20th century. The city also boasts a wide range of public sculpture, both freestanding and as architectural embellishments.

The fourth theme was the city's remarkable surviving urban historic landscape, which informed the boundaries of the world heritage site itself. The first element is a north-south strip of the waterfront based around Stanley Dock to the north, the Pier Head in the centre and the Albert Dock to the south. The historic dock infrastructure survives particularly well here, together with significant waterfront commercial buildings including the 'three graces' (the Port of Liverpool Building, the Cunard Building and the Royal Liver Building).

As the bid process developed, it became clear that the boundaries of the proposed world heritage site should be expanded eastwards to take in other elements of the city. Two further areas were eventually included. The Ropewalks area of the city, based around Lower Duke Street, lies close to the site of the Old Dock and contains a range of historic buildings and a notable historic urban grain. The second

NMR 17777/16 © English Heritage.NMR

Aerial view of the Pier Head with the 'three graces' (the Port of Liverpool Building, the Cunard Building and the Royal Liver Building).

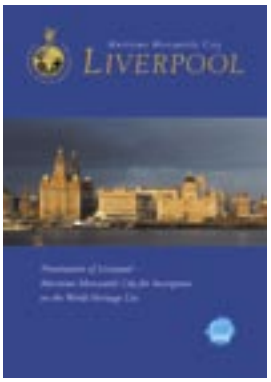
additional area runs eastwards from the Pier Head along Dale Street and contains a wide range of the city's historic commercial buildings. It terminates with the cultural buildings on William Brown Street, with St George's Hall – one of the finest neo-classical buildings in Europe – at its centre.

In addition to the detailed nomination document, which set out the case for the city's outstanding universal significance, a management plan was produced for the bid by Chris Blandford Associates. This was funded by the North West Development Agency, clearly indicating a wider perception that the bid was important for the regeneration not just of the city but also of the wider region.

In parallel with the World Heritage Site bid, Liverpool City Council and English Heritage have been working closely with other partners, including the North West Development Agency, in the Historic Environment of Liverpool Project. This highly successful project was designed to identify how regeneration and the historic environment might be brought together in a creative way. The project has enabled a range of initiatives to be taken forward to better understand the city's historic environment, help ensure its long-term management and open it to a wider audience.

In 2007, the city celebrates the 800th anniversary of its charter. The following year, Liverpool will be the European Capital of Culture. However, Liverpool's Chief Executive, Sir David Henshaw, has gone on record to say that it is its World Heritage status especially that will ensure the city's long-term success. Such commitment and strong belief is particularly good news for the wider role of our historic environment in regeneration.

For further information about the Liverpool World Heritage Site, please contact the WHS Project Officer, John Hinchliffe (john.hinchliffe@liverpool.gov.uk); for more information on the Historic Environment of Liverpool Project, see www.historic-liverpool.co.uk.



© Liverpool City Council

The WHS Nomination Document.

A Shipwreck on the Goodwin Sands

Local maritime archaeological stewardship

Mark Dunkley *Maritime Archaeologist*

Local stewardship has widened the public appreciation of the marine historic environment off the Kent coast.

In November 1703, a squadron of the Restoration Navy returning from duties in the Mediterranean anchored in The Downs off Deal, Kent, during a worsening south-westerly storm. At about one o'clock on the morning of 27 November, several ships, including the 3rd Rate *Stirling Castle*, dragged their anchors during this 'Great Storm' and were blown towards the Goodwin Sands. The *Stirling Castle* was wrecked along with two other 3rd Rates (*Restoration* and *Northumberland*), the 4th Rate *Mary* and many other vessels.

The Goodwin Sands – north-east of Deal and consisting of *c* 25m of fine sand resting on an Upper Chalk platform – have been a known navigational hazard since 1570. According to the National Monuments Record, there have been about 627 wrecks and documented losses among the Sands.

Discovery

In 1979, during a survey of wrecks off Ramsgate, Kent, local divers discovered the remains of a large wooden ship towards the north-west side of the Goodwin Sands. Later identified as the *Stirling Castle*, this wreck comprises a substantially intact hull with a considerable range of associated material, much of it in an exceptional state of preservation. In June 1980, an area of seabed in the Goodwin Sands surrounding the *Stirling Castle* was designated under the Protection of Wrecks Act 1973 (PWA). In the same year, the *Stirling Castle* was purchased outright by the (then) Isle of Thanet Archaeological Unit from the Ministry of Defence. Following identification, the *Restoration* and *Northumberland* were also designated under the PWA.

Key to the preservation of these sites has been burial within the shifting sands of the Goodwins, although the dynamics of the environment are a cause for concern in respect of the future survival of site components. The Goodwins are known to change morphology on a seasonal and anti-clockwise rotational basis, and, as such, the Admiralty advises mariners to navigate with caution, as depths may differ from those published. In addition, the Goodwins are recognised as an unstable area of the seabed and are routinely surveyed by the UK Hydrographic Office.

The *Stirling Castle* itself lies within a shallow gulley in an area that had once been a level plateau of sand. Therefore, exposure of the wreck may be attributable to the morphological trend of the Goodwins. Investigations of this trend had been carried out by the Goodwins Archaeological Survey in 1983 and 1988–9.

Local partnership

Recently, a considerable amount of work on the Goodwin Sands has been undertaken by local partnerships supported by English Heritage, including both documentary research and field investigation, latterly under licence under the PWA, and recovery of many artefacts. The site licencee of recent years is a local diver, supported by a small team and advised by a nominated archaeologist. This team maintains links with the Trust for Thanet Archaeology, and the Goodwin Gallery in the Ramsgate Maritime Museum displays many artefacts recovered from the Goodwin Sands area.

Clearly, the Goodwin Sands are of local importance on many levels. Both local and national newspapers have reported on the

wrecks of the area since at least 1980, and local divers have spent considerable time recording, investigating and publishing work on the site. In addition, a desk-based assessment of the *Stirling Castle*, commissioned by English Heritage in 2003, will inform the development of a management plan for the site.

Local stewardship

As well as nationally funded work, innovative stewardship of the submerged heritage has been largely locally driven. In 1983, the East Kent Maritime Trust (EKMT) was formed as a Registered Charity following an initiative of Thanet District Council. The Trust aims to raise awareness of the 'unparalleled maritime and associated heritage of East Kent' through local museums and a wide range of educational activities. Project Seahorse, for example, comprised the raising and preservation of a unique gun and carriage from the wreck *Stirling Castle* in purpose-built tanks in a new conservation building at Ramsgate. Additionally, events marking the 300th anniversary of the 'Great Storm' in 2003 included a major international conference at Sandwich and a service of commemoration held on Deal Pier for the seamen lost during the storm.

In February 2004, the Goodwins Joint Action Group (G/JAG) held its initial meeting in Ramsgate. This Group, supported by the EKMT, seeks to operate a coordinated management model to deal with local maritime heritage interests associated with the Goodwins through activities and heritage champions. The Group also seeks to raise awareness of the local maritime heritage value through membership, including representatives of both county and district local authorities, archaeological contractors, divers, boatmen's associations and English Heritage.

Such stewardship is widely promoted by the Government, underpinned by the principles of integrated management and stakeholder involvement. Public awareness of the wealth of maritime heritage lying off our coasts, and the creation of groups such as G/JAG working within local authority heritage initiatives, should be encouraged to foster local stewardship for the marine historic environment.

REFERENCES

British Geological Survey, *Thames Estuary Sheet 51°N-00°, 1:250 000 Series*

Wessex Archaeology 2003, *Stirling Castle Historic Wreck Site: Archaeological Desk-based Assessment*. Unpublished report for English Heritage

Deal Castle, Kent, overlooking the Goodwin Sands, near the shipwreck.

Historic Seaside Resorts
Prospects for the future

Jenny Carlile *Team Leader (Cambridgeshire & Norfolk), Historic Areas Adviser*

Heritage-based projects that celebrate local identity can reinvigorate our run-down traditional seaside resorts.

With the decline of the traditional seaside holiday, England's resorts are seeking new ways to attract visitors and investment. The English seaside contains a huge variety of historic architecture, ranging from purely functional lighthouses and sea defences to outrageously fanciful Venetian water gardens and Moorish 'fun' palaces. Some of our resorts, such as Cromer and Great Yarmouth, are proving that historic buildings can offer up-to-date entertainment facilities. Projects that reinforce the pride of local communities – celebrating local identity and encouraging people to share their heritage with visitors – are injecting vitality into tired seaside towns.

Cromer

The end-of-the-pier show in Cromer's Pavilion Theatre has added sparkle to seaside holidays for generations of families. This historic theatre was re-opened for the 2004 summer season by the actor Stephen Fry, after a refurbishment that provided better facilities for performers and audiences alike. At a recent conference held in the theatre – England's Seaside Architecture: a Foundation for Future Prosperity – visiting delegates were treated to a Victorian lantern show accompanied by the under-floor booming of the incoming tide.

The pier itself now has vastly improved refreshment facilities and public lavatories, all constructed during the closed season in the worst of the winter weather. The pier is hugely popular with holiday-makers, and the 2004 summer show was one of its best seasons ever. Together with the Hotel de Paris at its landward end, the pier also makes a superb conference venue.

Local pride in Cromer is focused on its lifeboat and its crews. A Lifeboat Museum to celebrate Cromer's local heroes is being erected on the promenade. This 21st-century newly designed building is an example of the principle set out in *Shifting Sands*, published jointly by English Heritage and CABE, of the pivotal part played by high quality design in seaside regeneration. The museum's new lift will provide easy access from the cliff-top to the beach. Enhancements to a re-surfaced promenade and a variety of public art, funded by the Cromer Regeneration Project, will complement the new works on Cromer's seafront.

Great Yarmouth

Some of the most deprived communities in the region live in Great Yarmouth's historic seafront and quayside areas. Great Yarmouth, however, is a lively holiday destination with a fine beach, two piers, historic amusement arcades, theatres and cinema, and a world-class circus act in its historic Hippodrome. Moreover, if holiday-makers want a change from the excitement of the Golden Mile, then exploring the town's narrow lanes and merchants' houses is a rewarding experience.

Using the historic environment to strengthen local identity, expand opportunities for visitors and celebrate the town's unique

© English Heritage/Jenny Carlile

Cromer's recently re-opened pier and Pavilion Theatre.

Sails in the yard of the former kipper factory that is now Great Yarmouth's Time & Tide Museum.

character are the aims of the town's Heritage Strategy. Initially delivered through the Single Regeneration Budget, and now primarily through the Integreat (Objective 2) project, the Heritage Strategy was produced by the Great Yarmouth Heritage Partnership, a group of historic attraction providers (including English Heritage and the National Trust) working with the local council, the building preservation trust and the county's museums service.

Great Yarmouth's heritage quarter is centred on South Quay. Encouraging holiday-makers to leave the beach, by entering the walled town and passing down the narrow Rows to reach the quays, is central to the Heritage Strategy. This has been achieved partly by re-displaying existing historic properties, including English Heritage's own merchant houses in the Rows, the National Trust's Elizabethan House on the quayside and the county-owned museum in the old Tolhouse. Key to the success of this heritage quarter was the identification by local focus groups of the aspects that were special for them and that they wanted to share with visitors.

The creation of the Middlegate Garden, a community garden on a former bomb site between two English Heritage historic houses on the South Quay, has highlighted the importance of active community participation. A transformation has taken place here. Once heavily vandalised, with broken glass, discarded sofas and general mess, this site used to be a no-go area. Children from the nearby housing estate have now designed and planted a new garden. They will continue to look after it, joining together to form a club run by English Heritage's custodian. Artworks in the garden include public seating in the form of a sofa, an ironic reflection on the former use of this space as a general dump.

Also on South Quay is the new Norfolk Nelson Museum. The Ben Burgess collection of Nelson memorabilia is now housed in what was a neglected but still elegant merchant's town house. Owned by the Great Yarmouth Preservation Trust and opened by the Duke of Edinburgh, this new museum will be the region's focus for the Battle of Trafalgar bi-centenary celebrations in 2005.

Linking all the Great Yarmouth heritage projects together is the Time & Tide Museum, opened in 2004. Located in a historic kipper factory that stands at the foot of the town wall (and still smells of kippers), this museum celebrates the heritage of local people and offers a new experience for tourists. The museum celebrates the local seafaring way of life and is a symbol of the town's pride and prosperity.

The imaginative conversion of this formally redundant and fire-damaged group of historic buildings is testament to the energy and tenacity of its owners, the Great Yarmouth Preservation Trust. Local, regional, European and lottery funding combined to make this project happen, with regional partners working together to ensure delivery.

Heritage regeneration funding

The Cromer and Great Yarmouth projects have relied heavily on public investment, with huge financial support form the regional development agency (EEDA) and the respective local authorities (North Norfolk District and Great Yarmouth Borough Councils).

Two heritage funding streams, in particular, show how investment in our seaside heritage can be the key to successful regeneration. Heritage Economic Regeneration Schemes (HERS), launched by English Heritage in 1999, have funded work in more than 30 seaside towns.

Delegated to local authorities, HERS offer grants towards the cost of repairing buildings, reinstating architectural details and features, and enhancing the public realm. In addition, according to an English Heritage report of 21 HERS across England (*The Heritage Dividend* 2002), on average, £10,000 of heritage investment levers in £46,000 match funding from private and public sources.

A second funding stream is the Heritage Lottery Fund's Townscape Heritage Initiative (THI), grants of which tend to be larger than HERS, both in terms of finance (Great Yarmouth's THI funding from the HLF is £2 million) and size of town. An added advantage of THIs is that they can also help to fund the alterations necessary to bring historic buildings back into use.

Conservation of Historic Ships
National strategies

John Paton *Secretary, National Historic Ships Committee*

A Partnership Project now supports the national database of historic vessels.

We have a large historic fleet in the UK: at least 1,200 vessels over 12m in length and possibly as many as 500 smaller vessels. Many local and national trusts and societies support these vessels, including the widely known Heritage Afloat. There is some government aid for vessels in the care of museums, and some Heritage Lottery Fund grants for other vessels, but overall it remains an uncoordinated area of our heritage.

The National Historic Ships Committee was formed by the National Maritime Museum at Greenwich in 1992. A project to set up a national database, begun in 1995, has recently been supported by a Partnership Project with English Heritage. The original project was seen as the foundation of a properly funded and organised national policy. Completed in 2000, the database was officially set up at the Maritime Museum as the National Register of Historic Ships, maintained by two members of the museum staff. The NHSC is made up of members chosen for their knowledge, experience and standing in historic ship preservation, and they serve ad hominem and in an honorary capacity. I act as Secretary, and have led the Partnership Project. A small group of committee members helps run the Register and provides specialist skills and knowledge.

The historic vessels

The vessels are under a diverse ownership, some in the care of museums but many not. Individual trusts own many, some still remain in private hands, and just two – the light cruiser *Caroline* and the 1st Rate *Victory* – are owned by the Ministry of Defence. The vessels represent the broadest spectrum of maritime activity, from large ships such as *HMS Belfast* and *Victory* to much smaller sailing craft.

The Register

The Register, a relational database with over ten fields, can store information on function, builder, dimensions, construction, propulsion, history and location. It is built round a basic functional/type thesaurus, and it can also store images (see www.nhsc.org.uk). There are strict entry criteria for vessels: built before 1955; British built; length greater than 12m; and substantially intact.

Vessels appear on the Register in one of three levels of importance: A Core Collection of 58 historically pre-eminent vessels; a Designated Vessels List that currently holds 162 vessels of considerable merit; and a third list of vessels, which are least significant but nonetheless historically important. To determine the level, we score the vessels on innovation, exemplary status, aesthetic quality, historical association, originality, age, condition and rarity.

When we score historical significance, we also monitor the vessel's project itself – its feasibility, conservation practice, business approach and educational outreach – so that we can maintain an overall view of its sustainability. As the Committee is composed both of museum and sailing ship specialists, the Register covers the whole of our maritime heritage. It helps to guide funding priorities and establish specific needs for vessels at risk. However, the Register offers no legal protection, has no enforcing conditions and does not hold any purse strings.

English Heritage's support

English Heritage has helped keep the Register alive. Working in partnership with the National Maritime Museum, we have been able to update entries over the last two years. We have visited every vessel on the Core Collection

Above: *Corrie*, an Edwardian racing yacht built in 1908, based at Gosport, Hampshire. Below: *Challenge*, the last steam tug to operate in the Port of London. At the time of Dunkirk, she towed other ships across the channel and also rescued troops. She now operates from Shoreham-by-Sea, West Sussex, and works between Southampton and Bristol.

© National Maritime Museum

© National Maritime Museum

list, and have also carried out research on all the vessels on the Designated List. We now know a great deal more about how the vessels are sustained and how much outreach they generate – and, more importantly, how much more could be achieved.

Why register?

The Register provides useful data about the whole fleet of historic ships – for politicians, enthusiasts, visitors and owners. In recording maintenance and repair priorities, it can be used to put people with the same problem in touch with each other and to disseminate details of funding opportunities. It allows us to encourage better standards – teaching the sailor about conservation and the museum curator about sailing. As many readers will appreciate, taking the ship to sea, and later saving it, draws upon practical as well as academic expertise.

Challenging times

The condition of our historic fleet is deteriorating, and the numbers diminishing. Resources are scarce. Maintaining the Register is not cheap; unless entries are kept up to date, it soon becomes a useless tool. The Register cannot work without the support of the ship owners themselves, and they need incentives. Perhaps cheaper taxes, mooring fees and other small incentives given to ships on the Register can eventually be achieved – particularly if we can encourage ship owners to be good conservationists, to increase outreach programmes for the public, and to help attract investment into areas in need of development.

We have recently gained government recognition for what we do. In February 2005, the Heritage Minister, Andrew Mcintosh, announced the creation of a National Historic Ships Unit, which will advise the Government on policy and funding priorities, coordinate work within the sector and maintain the Register. This positive step forward will, we hope, encourage a better understanding of the costs of restoring and maintaining historic vessels and will help promote historic ships to a wider audience. We also hope it will help us save our historic ships, carry out more research, improve our guidance and develop new partnerships. We see new partnerships as the golden key: museums and sailing ships, shipwrights, sailors and curators working together to increase the general public's interest in and enjoyment of the wonderful heritage of historic ships. It is a rich combination for the 21st century and deserves a bright future.

England's Coastline
Listed buildings and structures

Lynda Feeley *former Communications Manager, Images of England*

An increasing number of coastline photographs are now available on the website.

England's rich heritage of listed coastal buildings and structures is being recorded for the *Images of England* project by an extensive network of volunteer photographers along the English coastline.

When completed, their photographs, along with photographs of every listed building in England, will be available on www.imagesofengland.org.uk. A search under the building heading 'maritime' returns almost 1,500 list descriptions with more than 750 accompanying photographs. Anyone wishing to carry out this search will need to register as an advanced user and then follow the instructions and options.

Lighthouses

There are records for over 100 lighthouses on the *Images of England* website, with over half currently illustrated by photographs. One of the oldest, the early 14th-century Tower of St Catherine's Oratory at Chale on the Isle of Wight, is associated with a local legend. The Tower was supposedly built as a penance by the local landowner, Walter De Godeton, for stealing the cargo of church wine belonging to a monastery when the *Saint Marie* of Bayonee was wrecked on Atherfield Ledge in the Parish of Shorwell in 1314.

Built as a lighthouse to prevent further wrecks, St Catherine's Tower was also originally home to an oratory chapel inhabited by a monk who was responsible for trimming the light and saying mass for those lost at sea. The 35.5-foot Tower, with its pyramidal stone roof, stands 750 feet above sea level; its buttress fins were added later to keep it standing as a seamark. It is a rare example of a surviving medieval lighthouse and is known locally as the 'pepper pot' in recognition of its shape and its conjunction with the remains of the lighthouse in the adjoining parish, known as the 'salt cellar' or 'salt shaker'.

Souter Point Lighthouse on Lizard Point in Bolden, South Tyneside, is built in a more traditional style. To avoid confusion with the Cornish Lizard Lighthouse, it was given the name 'Souter Point', which means 'next point south'. Built in 1871 by Sir James N Douglas for Trinity House, London, it was the most technologically advanced lighthouse of its day, constructed specifically for electric illumination using carbon arc lamps, which flashed for 5 seconds every 30 seconds. The lighthouse also features its original bi-focal lens. In addition to the electric light, Souter Point also had foghorns that were used when visibility was below two miles. The tapered red and white painted tower is 75 feet tall; it stands three

IoE number: 392680, © Rev. Robert Rudd

Tower of St Catherine's Oratory, Chale, Isle of Wight (Grade II).

IoE number: 303715, photograph © Mr David E Sandersfield

Souter Point Lighthouse (above), Boldon, South Tyneside (Grade II*).

kilometres south of South Shields overlooking the cliffs of Marsden Bay, above the rocks and notorious currents of Whitburn Steel. The light was built to prevent lives being lost when ships ran aground either through natural causes or when locals lit lights to deliberately attract ships on to the rocks for their cargos. In addition to the tower, the complex includes an engine and boiler house, workshops and houses.

Coastal structures

In addition to lighthouses, the *Images of England* website includes a wide range of coastal listed structures such as pavilions, beach huts, piers and quay walls. Examples include a set of six early 19th-century mooring bollards at Feock in Cornwall. They consist of granite monoliths that were used to moor boats waiting to load copper ore from the ore hutches, to be taken to Wales for smelting. The hutches were linked to the mines by the Redruth and Chasewater railway, making Devoran a major industrial port in the heyday of mining. Today, the mooring bollards are a reminder of Cornwall's historic past and of an industry that has now vanished.

The *Images of England* website features many quays and ports, the most historically important of which is the West Pier at Sutton Harbour, Plymouth. This Grade II listed pier dates back to the 17th century, although it was much rebuilt between 1791 and 1799. The pier has been the scene of many important departures and arrivals, several of which are documented in plaques erected on the site.

Sutton Harbour was the place from which the Pilgrim Fathers sailed on the *Mayflower* on 6 September 1620 with 102 passengers and 48 seamen for the crossing to Cape Cod. In 1838, four of the Tolpuddle Martyrs returned to the West Pier, following their exile to Australia for daring to form a trade union. (They received pardons from their seven-year sentences after a lengthy legal battle and a great deal of public protest.) *The Tory* also sailed from here on her voyage as the pioneer ship to colonise New Zealand in 1839. In addition, the harbour was the location for the arrival of the first transatlantic flight in 1919 by the American seaplane NC4, which left Long Island on 8 May and reached Plymouth Sound 23 days later, on 31 May 1919.

Images of England is an on-going project that aims to create a 'point in time' record of England's listed buildings. When completed in 2008, it will offer a unique and comprehensive photographic record of England's architectural heritage for anyone interested in the historic environment. There are currently over 140,000 images online, and more are being added. For more information please email ioeenquiry@english-heritage.org.uk.

IoE number: 063348, photograph © Mr John E Crowe

Bollards (above) by Narabo Ore Hutches, Feock, Cornwall (Grade II).

IoE number: 473809, photograph © Mr Derek Hiscock

Sutton Harbour, Plymouth, Devon (Grade II, below).

The National Monuments Record
News and events

ENGLISH HERITAGE
NATIONAL MONUMENTS RECORD

The NMR is the public archive of English Heritage. It includes over 7 million archive items (photographs, drawings, reports and digital data) relating to England's historic environment. The following information gives details of web resources, new collections (catalogues are available in the NMR search room in Swindon) and outreach programmes.

NMR Maritime Record

Since 1990, the NMR has been creating, developing and enhancing a record of England's marine cultural heritage, which now forms part of the NMR's national record.

While initially concentrating on shipwrecks, the scope of the record encompasses all sites of archaeological, historical and architectural interest, including crashed aircraft, fishermen's fastenings and isolated finds, as well as the interpretation of drowned landscapes. Currently, there are over 45,000 sites on the database, which is being continually enlarged and enhanced in line with English Heritage's responsibilities under the National Heritage Act 2002. These records are held on a fully searchable in-house database. They include 39 wreck sites currently protected under the 1973 Protection of Wrecks Act, and a number of wrecks and crashed military aircraft protected under the 1986 Military Remains Act.

The maritime inventory is distinctive in that it is fully integrated with information about the archaeological and architectural heritage within the NMR. The record is a highly regarded source of maritime cultural information that forms an essential element in the planning, management and interpretation of the marine cultural resource for coastal and off-shore developments.

The NMR, therefore, provides access to maritime cultural data out to the 12-mile limit – England's Territorial Sea – up to 1945. However, sites of significance are recorded outside these parameters to help English Heritage carry out its new role, and a seamless approach is advocated out to the continental shelf. To consult this record, please contact NMR Enquiry & Research Services, National Monuments Record Centre, Kemble Drive, Swindon, SN2 2GZ; Tel 01793 414600; Fax 01793 414606; email nmrinfo@english-heritage.org.uk.

Photographs of Stonehenge: MPBW Albums

Over 1,800 photographs of Stonehenge, depicting some of the momentous events over the last 150 years, have been catalogued and made publicly available. Assembled into 11 albums and 5 files, these stunning images were taken by and for government bodies responsible for the care and protection of the monument, and they record the condition of the stones and essential works to consolidate and preserve the site.

Included in the collection are rare glimpses of work in 1919–20 to straighten stones 6 and 7 and their lintel; the re-erection of trilithon 57/58 and stones 22 and 60, together with archaeological excavation by Professor

A wrecked cargo vessel in the Bristol Channel south of Clevedon, 19 February 2000.

NMR 18713/20 © English Heritage. NMR

FL01496/03/003 © Crown copyright.NMR

Work undertaken by the Office of Works in May 1919 to straighten and reset the stones of the outer circle of Stonehenge. One of the lintels is being lowered by a wooden crane. Wooden shuttering has been placed around an upright prior to the replacement of the lintel.

Atkinson in 1958–9; and the straightening and resetting of trilithon 53/54 in 1964, also under the direction of Professor Atkinson. Sadder moments, such as the four occasions on which the stones were vandalised by painted graffiti, are also recorded. Perhaps the most fascinating insight afforded by these stunning images is of the ever-changing character of Stonehenge, from the atmospheric monument of the Victorian period and basic visitor facilities (a simple hut) of the first quarter of the 20th century, to the site where the public roamed among the stones and today's World Heritage Site, visited by millions.

A selection of images from this collection appears in Julian Richards' *Stonehenge: A History in Photographs* (English Heritage 2003).

Delamotte's photographs of the Crystal Palace

A rare set of early photographs of one of the most important buildings of the 19th century was acquired by the NMR in 2004. Philip Henry Delamotte recorded the construction of the Crystal Palace when it was moved from Hyde Park to its new home at Sydenham, south London, in 1853–4. The recently acquired set

was taken by Delamotte about five years later and shows the building in full use; it includes views of many of the Fine Arts Courts. The full set of images may be viewed online at www.english-heritage.org.uk/viewfinder.

English Heritage wishes gratefully to acknowledge that this set was purchased with the aid of the Crystal Palace Foundation and the London Development Agency.

The ELS Project

The Department for Farming and Rural Affairs (Defra) has announced the introduction of new environmental protection schemes. The NMR, in consultation with local Historic Environment Records, is leading a project to provide information on archaeological sites that may be eligible for the Defra Entry Level Scheme (ELS). For this project, both the spatial and textual elements of a subset of monuments from the NMR's in-house database have been upgraded. For further details, please contact Louise Goldie: Tel 01793 414725; louise.goldie@english-heritage.org.uk.

Barrows and an Iron Age farmstead preserved as a mixture of crop marks and earth mounds on North Down, Bishops Canning, Wiltshire, 13 April 1988.

NMR 4221/22 © Crown copyright. NMR

Fountains playing in the courtyard of the Alhambra Court at the Crystal Palace in Sydenham, south London, were photographed by Philip Delamotte around 1859. The court was modelled on the Court of the Lions in the Alhambra Palace in Granada, Spain.

DP004626 © English Heritage. NMR

Cataloguing our Historic Plans

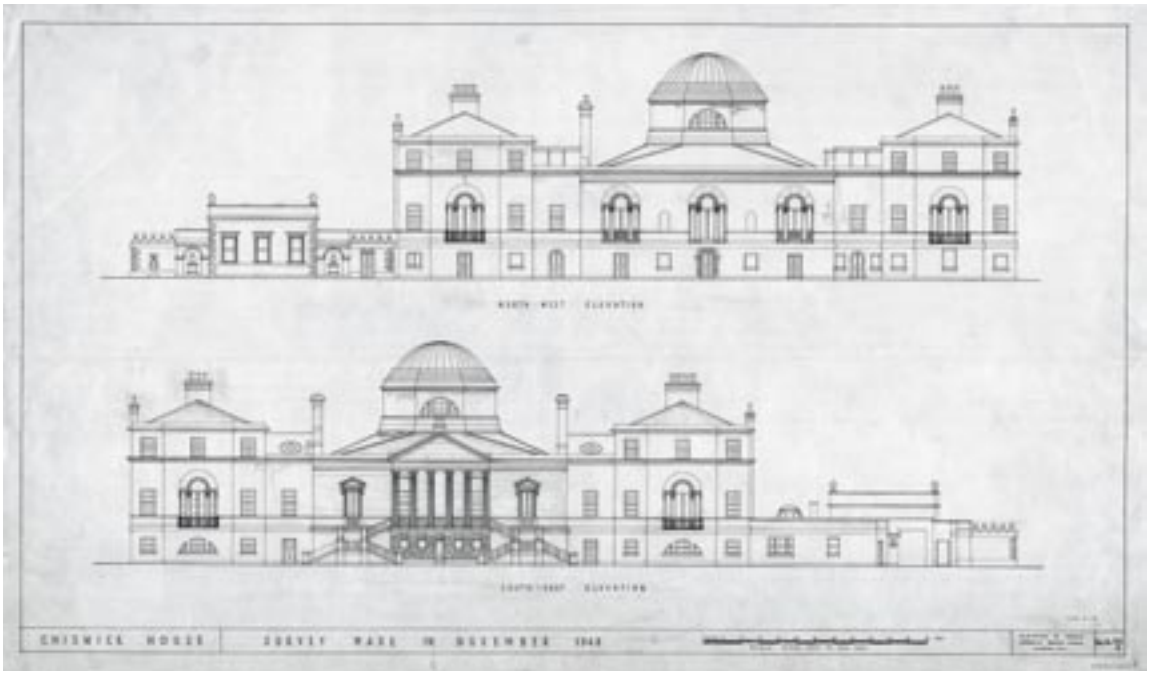
As part of the NMR's programme to catalogue its historic plans (*Conservation Bulletin* **45**, **47**), the drawings for two more sites have now been catalogued. The catalogue of historic plans for Chiswick House and Fountains Abbey can be viewed online at www.english-heritage.org.uk/nmr.

CHISWICK HOUSE, CHISWICK, GREATER LONDON: Almost 1,500 drawings dating from the late 1930s to 2004, though mostly from the 1960s and 1970s, show the villa and its sumptuous rooms, its restoration and extensions, decorative schemes (particularly the frieze in the Blue Velvet Room) and the gardens and ornaments, with coverage of the restoration of the Cascade, Ionian Temple and Inigo Jones gateway.

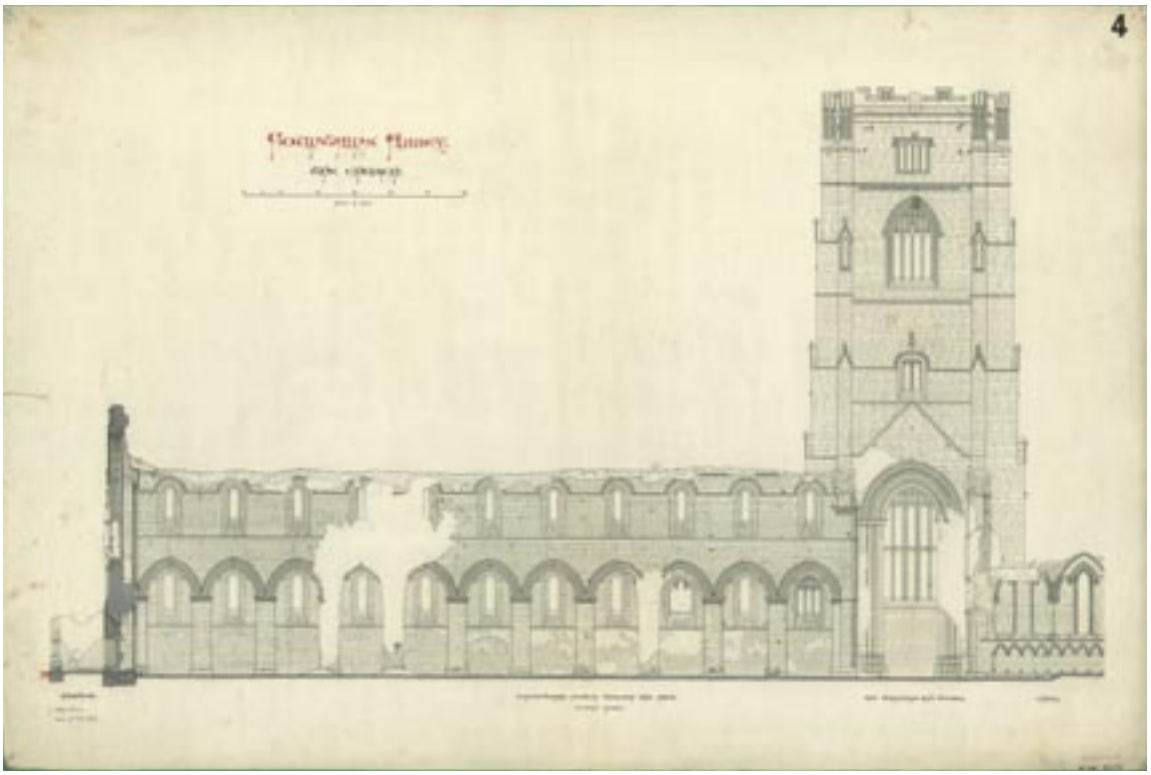
FOUNTAINS ABBEY, NORTH YORKSHIRE: Founded in 1132, this Cistercian abbey was robbed of much of its stone following its suppression in 1539. It now stands as a spectacular ruin, the largest of its type in Europe. Its architectural importance can be fully appreciated in the collection of over 500 plans covering more than 100 years. The collection begins with a series of drawings from the 1870s depicting the church and conventual buildings, including insets revealing the original glory of the abbey. A number of 1980s drawings of sculptures from the Chapel of the Nine Altars focus on architectural detail while a number of photogrammetric surveys from 1995 to 2001 give a more comprehensive view of the site, exploring the fabric of many parts of the abbey.

Outreach

A varied programme of workshops, tours, lectures, weekly classes and events is designed to help participants make the best use of NMR resources for work, research or personal



North-west and south-east elevations of Chiswick House from a survey made by the Ministry of Works, November 1948. The drawing is dated 4 January 1949.



A longitudinal section through the largely 12th-century monastic church at Fountains Abbey with its 15th/16th-century tower. It is signed by J Arthur Reeve and dated 1876.

interest. Short introductory tours of the NMR Centre are available, and for those wishing to explore the resources in more detail, study days are organised on a number of different themes.

Living Story Project

The outreach programme at the NMR seeks to extend services to audiences not currently benefiting from mainstream provision. Work within the local community of Rodbourne in Swindon has formed the first phase of this programme, enabling the NMR Outreach Team to pilot an approach that will be developed with other community groups.

The Living Story Project enabled a community to explore the history of its locality by linking buildings, streets and landscapes to the people who formed, lived and worked in them. Flexible learning activities were developed that took account of individual needs and preferred learning styles. Participants (none of whom had used an archive before) shared memories, created a community photographic collection, undertook archival research and studied local buildings. They produced a number of exhibitions and two short films, immensely popular with Rodbourne residents.

For further information about the Living Story Project and NMR Outreach, please contact Jane Golding: Tel 01793 414735; Fax 01793 414606; jane.golding@english-heritage.org.uk.

News
from English Heritage

Delivering Sustainable Communities Summit

The Deputy Prime Minister held a second three-day urban summit in Manchester in February 2005, attended by more than 2,000 delegates, and addressed by the Prime Minister, Deputy Prime Minister, Chancellor and prominent regeneration and planning practitioners. Two English Heritage Commissioners participated in the proceedings: Bill Bryson emphasised the importance of the historic environment at a plenary session, 'Design, Excellence and Building Places that People Want to Live In: What Does a Successful Sustainable Community Look Like'; and Gilly Drummond chaired a workshop, 'Cleaner, Safer, Greener Communities for All'. Both events highlighted the message in the Government's Planning Policy Statement 1: Delivering Sustainable Development (ODPM.gov.uk/planning) that the historic environment brings social and economic designations. The importance of the historic environment was also noted by a wide range of speakers.

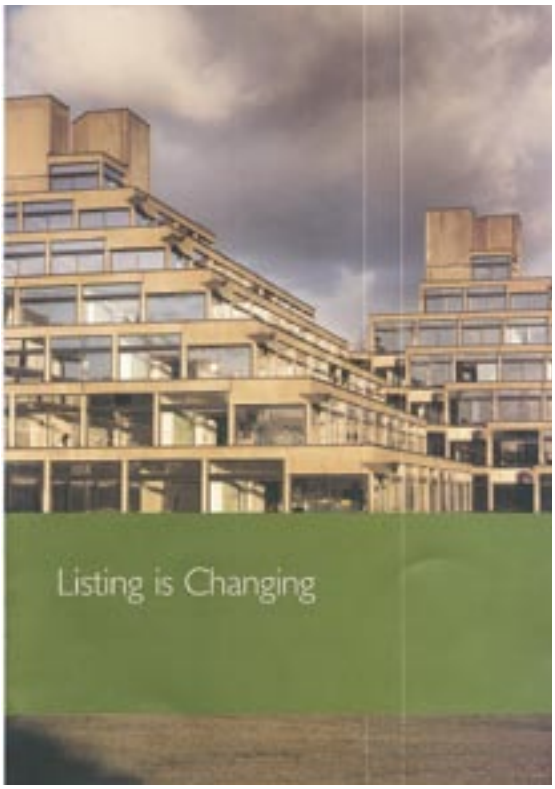
At English Heritage's stand in the exhibition hall, staff spoke to a variety of stakeholders, agencies, government departments and other bodies about the importance of the historic environment in the planning system. The following new leaflets and publications were widely distributed, copies of which may be ordered from customers@english-heritage.org.uk: *Regeneration and the Historic Environment* (Product Code 51029), *Low Demand Housing and the Historic Environment* (PC 50977), *Streets for All* (PC 50993) and *Conservation Bulletin* 47 (PC 51004) featuring Characterisation.

Changes to the Listing System in April 2005

As part of the Heritage Protection Review, the Department of Culture, Media and

NMR AA030908 / Peter Williams © English Heritage.NMR

One of the images framing English Heritage's stand at the Government's Delivering Sustainable Communities Summit: Tobacco Warehouse (Grade II), Stanley Dock, Liverpool, built between 1897 and 1901 by AG Lyster, Mersey Docks and Harbour Board Engineer. At 13 storeys and a total floor area of 36 acres (1.4 hectares), it was when opened the largest brick building in the world. Though demolition was proposed after closure in 1980, it is now part of the Liverpool World Heritage Site, and its future is supported by local groups.



© English Heritage

Changes to the current listing system from April 2005 are set out in this new leaflet. The front cover image features the student halls of residence (Grade II*), University of East Anglia, designed by Denys Lasdun in the mid 1960s.

Sport (DCMS) and English Heritage (EH) are currently taking forward proposals for the comprehensive reform of the heritage protection system in England and Wales. These reforms are designed to make the heritage protection system simpler, more open and more flexible, while maintaining the current levels of protection for our rich heritage of historic buildings, monuments, battlefields and gardens.

The main element of these reforms will be the unification of the current systems of listing, scheduling and registering for historic sites into a single designation regime, complemented by a new, unified 'heritage consent' and including the scope for statutory management agreements for complex sites. We will be publishing a White Paper on these changes later in 2005.

In the meantime, we are making a number of immediate changes designed to improve the current listing system. From April 2005, the major changes will be:

- transfer of the administration of the listing system from the DCMS to EH;
- new notification arrangements for the owners in listing cases;
- new consultation arrangements for owners and local planning authorities;
- better information for the owners of listed buildings;
- the introduction of a new formal review process for listing decisions.

In addition to these changes, the DCMS will also be publicly consulting on new criteria for listing that will eventually replace those currently set out in Planning Policy Guidance 15. A leaflet, *Listing is Changing* (Product Code 51031), explaining the forthcoming changes in more detail, is available from EH Customer Services: Tel 0870 333 1181; customers@english-heritage.org.uk; www.english-heritage.org.uk and www.culture.gov.uk. For more information about the Government's proposals for heritage protection reform, the DCMS report, *Review of Heritage Protection: The Way Forward*, is available on the DCMS website.

Chairman's lecture

Sir Neil Cossons will give a public lecture, 'Building Communities through Heritage', at the Getty Conservation Institute, Los Angeles, California, on 19 May, one of a series of lectures on international conservation issues. In considering how a neighbourhood's historic environment can lead to economic viability, he will highlight recent work in England, undertaken as part of a wide-ranging review of protection and management of the historic environment, to demonstrate that support for heritage protection is widespread and increasingly seen as an important key to sustainable communities.

Professional training courses

- Building Conservation Masterclasses. A development of the English Heritage Masterclass programme, which transferred to West Dean in 1997. A programme of 15 Masterclasses taking place throughout the year. For details, please contact Liz Campbell, West Dean College, West Dean, Chichester, PO18 0QZ; Tel 01243 818219; bcm@westdean.org.uk.
- Professional Conservators in Practice. West Dean College, near Chichester, West Sussex. For details of these specialist training courses, please contact West Dean College, West Dean, Chichester PO18 0QZ; Tel 01243 818319; isabel.thurston@westdean.org.uk; www.westdean.org.uk.
- Professional training in the historic environment 2004/5. A wide-ranging programme of one- and two-day courses at the Oxford University Department for Continuing Education, in association with the AFT, the IHBC and the IFA. For details, please contact Dr Alison MacDonald, OUDCE, 1 Wellington Square, Oxford OX1 2JA; Tel 01865 270366; alison.macdonald@conted.ox.ac.uk.

Legal Developments
The extent of listing

When is an unlisted building listed? When it's in the curtilage of a listed building.

Section 1(5) of the Planning (Listed Buildings and Conservation Areas) Act 1990 provides that:

(a) any object or structure fixed to the building, and
(b) any object or structure within the curtilage of the building which, although not fixed to the building, forms part of the land and has done so since before 1 July 1948

are to be treated as part of the listed building and enjoy listed building protection.

In the last issue, I dealt with objects fixed to the building. Here, I deal with objects and structures in the curtilage. This involves answering two questions:

- When does an object or structure 'form part of the land'?
- What is the 'curtilage' of a building?

When does an object or structure 'form part of the land'?

As before, this is derived from cases concerning land law. In order to form part of the land, an object or structure must be fixed to the land. Broadly, the same tests apply as apply to whether an object is fixed to the building: method and degree of annexation, and object and purpose of annexation.

Thus, for example, a building, such as a barn on a farm or stables in the grounds of a house, will clearly be very firmly fixed to the land via its foundations and will almost certainly be there for the better enjoyment of the land. In the former case, the barn facilitates the agricultural use and, in the latter case, the stables have a clear association (historically at least) with the use of a building as a house.

It is interesting that the framers of the legislation used the term 'object or structure' rather than 'building'. This is a more general term that would appear to cover things such as sundials and garden statuary as well as buildings (provided of course they pass the purpose of annexation test and are not there simply for their enjoyment as objects). The choice of wording also produces interesting, and apparently anomalous, results when applied to plant or machinery. 'Building' is defined in the 1990 Act to exclude 'plant or machinery comprised in a building'. Thus, in the case of a listed watermill, for example, any surviving machinery would be excluded from the listing. However, a watermill in the curtilage of a listed building, but not listed in its own right, would include the machinery because it is part of the 'structure'.

What is the curtilage of a building?

In *Attorney-General ex rel Sutcliffe and Hughes v Calderdale Council (1983) 46 P&CR 399*, the Court of Appeal held that the following issues are relevant to a consideration of whether a building is in the curtilage of another:

(a) their physical layout,
(b) their past and present ownership, and
(c) their past and present function and use.

The primary focus of the inquiry, however, should be at the date of listing, not its earlier history (*Morris v National Assembly for Wales* – unreported). The important features to consider are the proximity and accessibility of the buildings and whether one is ancillary to the other in terms of function and ownership and occupation at the date of listing. However, case law offers little guidance beyond setting out the factors to be taken into account, and each case will need to be considered on its own merits.

Planning Policy Guidance 15: Planning and the Historic Environment offers, at paragraphs 3.34 and 3.35, an overview of the case law and this helpful nugget: 'Where a self-contained building was fenced or walled off from the remainder of the site at the date of listing, regardless of the purpose for which it was erected and is occupied, it is likely to be regarded as having a separate curtilage.'

Thus, one building will be in the curtilage of another if, at the date of listing, there was a clear relationship between the buildings: specifically, that one was ancillary to the use of the other, the buildings had common ownership or occupation and were not physically fenced off from each other.

Nigel Hewitson
Legal Director
nigel.hewitson@english-heritage.org.uk

New Publications
from English Heritage

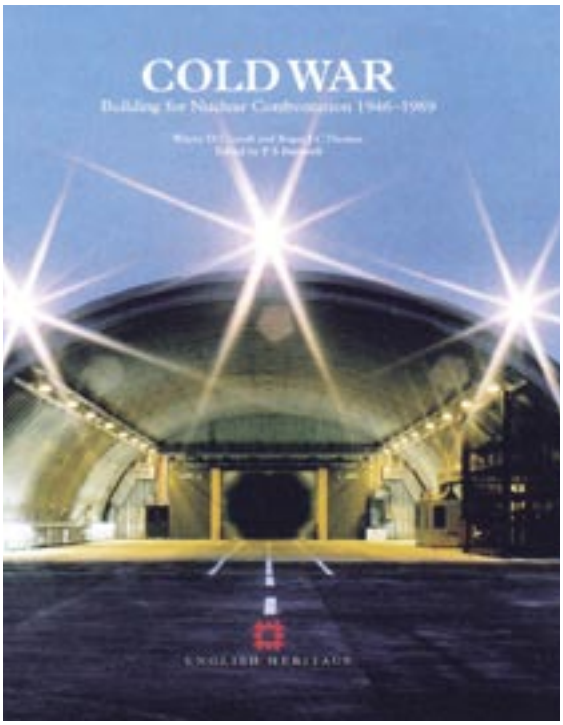
Cold War: Building for Nuclear Confrontation 1946–89

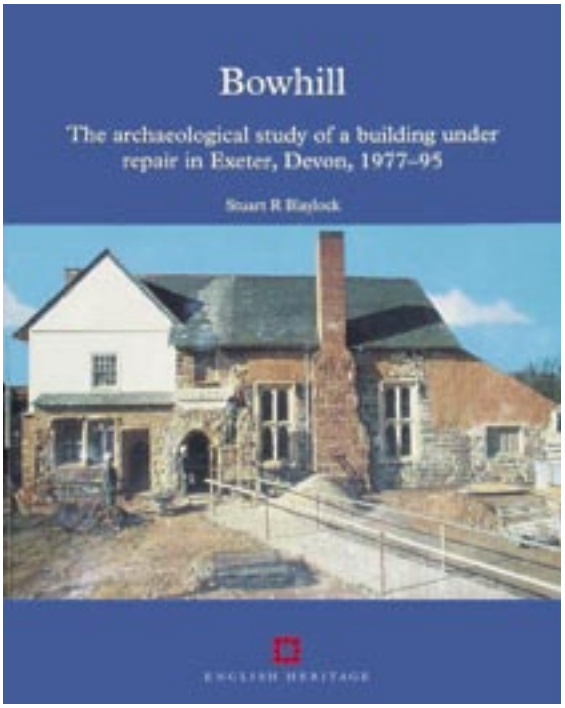
by Wayne D Cocroft and Roger C J Thomas

Though the historical and cultural aspects of the Cold War have been much studied, its physical manifestations in England – its buildings and structures – have remained largely unknown. The great landscape historian WG Hoskins, writing in the 1950s in his pioneering work, *The Making of the English Landscape*, lamented what he saw as the devastation of the countryside: 'England of the …electric fence, of the high barbed wire around some unmentionable devilment ... Barbaric England of the scientists, the military men and the politicians'.

A generation later, this highly illustrated book reveals what lay behind the fence, and how these sites are now, in dereliction, a new aspect of the complex landscape history of Britain. This is the new paperback edition of the critically acclaimed 2003 publication.

PRICE £14.99 + £2.50 P&P
ISBN 1 873592 817 / PRODUCT CODE 50944
Paperback, 288 pages





Bowhill: The Archaeological Study of a Building under Repair in Exeter, Devon, 1977–95

by Stuart R Blaylock

Bowhill is an important late medieval house near Exeter owned by the Holland and Carew families. This book, a detailed report on the excavation of the standing building that relates the archaeological results to the standing architectural elements, is an architectural history of the house up to the mid 20th century. It is an important methodological model and case study for late medieval to early modern houses in England.

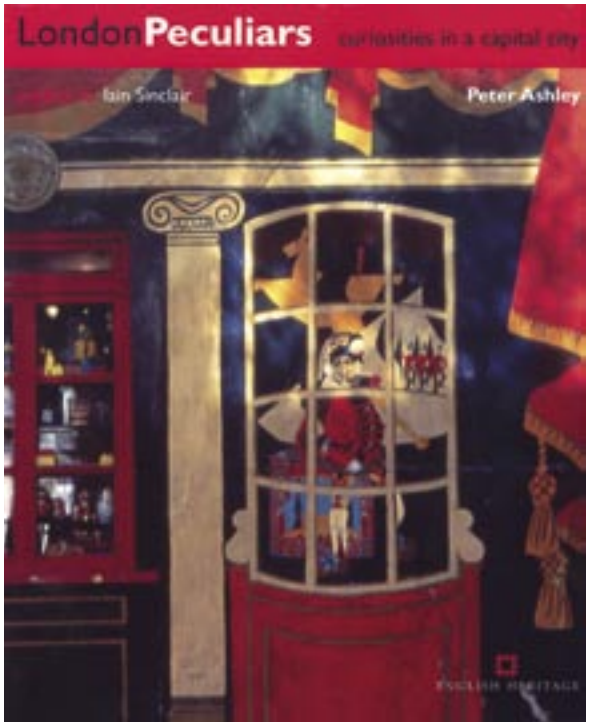
PRICE £65.00 + £5.00 P&P
ISBN 1 873592 60 4 / PRODUCT CODE 50095
Paperback, i–xvi + 392 pages

Engineering Archie: Archibald Leitch – Football Ground Designer

by Simon Inglis

In the second book of the Played in Britain series, stadium expert Simon Inglis recalls the life and work of Archibald Leitch, the Scottish

engineer whose designs were to football what Frank Matcham was to theatre. Millions of spectators have sat or stood in Leitch's structures, built for such clubs as Arsenal, Manchester United, Everton, Tottenham, Chelsea, Aston Villa and Glasgow Rangers. Though his pedimented gables and criss-cross steelwork balconies formed a recognisable and much-admired style, Leitch remained virtually unknown during his lifetime. Moreover, following the modernisation of stadiums brought on by the Hillsborough disaster, only a handful of his buildings survive, the listed stand and pavilion at Fulham's Craven Cottage in London being perhaps the best known.



This study of Leitch's major works is a fascinating account of the man who defined the distinctive look of British football grounds during the first half of the 20th century.
PRICE £14.99 + £2.50 P&P
ISBN 1 85074 9183 / PRODUCT CODE 50958
Hardback, 206 pages

London Peculiars: Curiosities in a Capital City

by Peter Ashley

London is a city in continual change: a backdrop to what has survived from over the centuries. This book is about the smaller details, rather than the iconic buildings, that remind us of the past: dinosaurs in Sydenham, stage-set housefronts in Bayswater, a funeral railway in Waterloo, the mysterious and preposterous beyond the immediate and obvious. Illustrated by a succession of atmospheric photographs, this book charts a journey of discovery through London's alternative histories.
PRICE £14.99 + £2.50 P&P
ISBN 1 85074 890X / PRODUCT CODE 50937
Paperback, 206 pages

Publications may be ordered from English Heritage Postal Sales, c/o Gillards, Trident Works, March Lane, Temple Cloud, Bristol BS39 5AZ;
Tel 01761 452 966;
Fax 01761 453 408;
ehsales@gillards.com.
Please make all cheques payable in sterling to English Heritage.
Publications may also be ordered from www.english-heritage.org.uk.

ISSN 0753-8674
Product Code 51005
Conservation Bulletin
Appears three times a year
Tel 020 7973 3253
Editor: Karen Dorn
kd@academyprojects.com
Editorial Address:
English Heritage, 23 Savile Row, London W1S 2ET
Design: Boag Associates Ltd
Production: JW Offset Ltd
Project management and layout: Academy Projects LLP
Mailing List:
mailinglist@english-heritage.org.uk
Additional copies:
customers@english-heritage.org.uk
Web version:
www.english-heritage.org.uk

English Heritage is the Government's lead body for the historic environment.