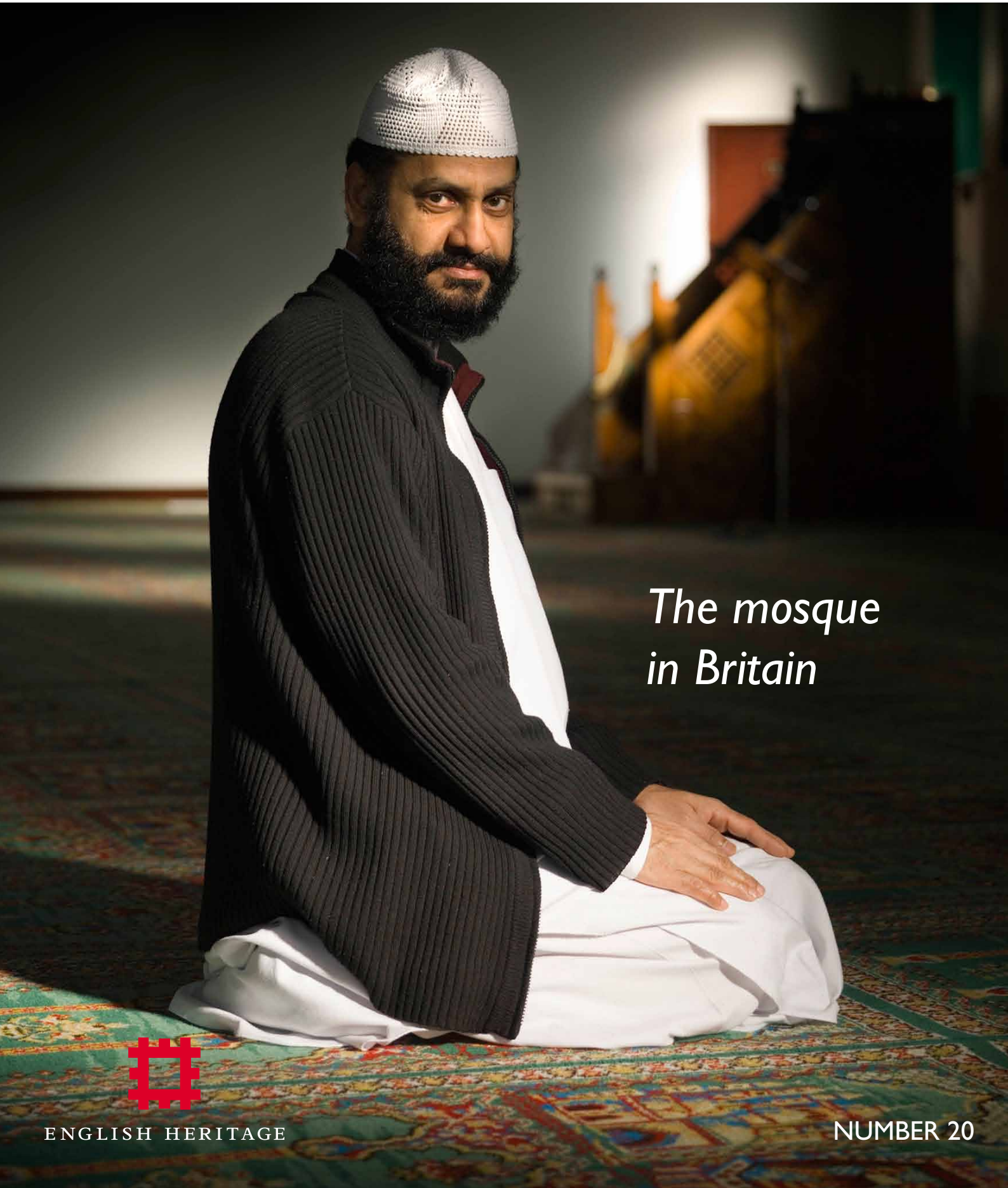
RESEARCHNEWS

CURRENT RESEARCH INTO THE HISTORIC ENVIRONMENT



The mosque in Britain

ENGLISH HERITAGE

NUMBER 20

Welcome to the first digital edition of *Research News*. Like its printed predecessors, this new e-magazine aims to update readers with progress on a wide range of applied research projects being carried out to promote the conservation of England's heritage and its understanding and enjoyment by the public. It reports on projects being undertaken to support the National Heritage Protection Plan, whether commissioned from, or jointly funded with, external partners or undertaken directly by our own expert staff.

Research News will be published twice a year and will complement the English Heritage *Conservation Bulletin*, which focuses on topical themes in conservation practice, and our *Historic Environment Local Management Newsletter*, which provides brief news updates and information on our training and guidance programmes.

The Department for Culture Media and Sport is currently consulting on a new model for delivering the services currently provided by English Heritage through two distinct organisations. One is planned to be a charity retaining the name English Heritage, with responsibility for conserving, managing and interpreting the National Heritage Collection of sites and monuments: the other, Historic England, a non-departmental public body, responsible for applied research, statutory designation, planning advice, grants and advice to government. Whatever the new arrangements for delivery, it is clear that heritage conservation practice continues to be most effective where it is evidence-based and supported by high quality research with clear practical outcomes. This is the focus of *Research News*.

We believe you will enjoy the additional benefits offered by the new digital format and that it will bring our work to a wider and more diverse audience in an immediate and exciting way. Do please forward the link for the publication to friends and colleagues who you think may be interested.

We are happy to receive any comments on the general content or format of the magazine or questions to the authors of the articles. So please feel free to email us at *ResearchNews@english-heritage.org.uk*.

We hope you find this a stimulating read.

Stephen Trow
Heritage Protection Director

John Cattell
Head, Investigation and Analysis Division, Heritage Protection Department

Inside this issue...

The economic benefit of protected wrecks

Diving trails provide access to historic protected wrecks. Research, funded by English Heritage, into the economic benefits of one such trail reveals that their impact on the local economy, from dive hire companies to bed and breakfasts, is considerable.

The *Coronation* was a 90-gun second-rate ship of the Royal Navy. She was launched in 1685, and wrecked off Penlee Point, the entrance to Plymouth Sound from the Cornwall side, in 1691. Her wreck, which consists of many iron cannon and anchors, was discovered in 1977 and designated for protection the following year.

In 2011, local divers and archaeologists began operating a diver trail for visitors to the site. The trail is one of three currently operating on protected wrecks in England that have been supported by English Heritage: the others are on HMS *Colossus* in the Isles of Scilly (Camidge 2009), and the Norman's Bay Wreck off Pevensey, Sussex (Nautical Archaeology Society 2011).

In 2012 to 2013 the Nautical Archaeology Society undertook a study into the economic impact of the *Coronation* diver trail. The study aimed to determine the number of visitors to the site, and how much and on what each visitor had spent money while in the Plymouth area. The aim was to determine the value of the protected wreck to the local economy.

A diver exploring the *Coronation* diver trail.

Year	*Coronation* (trail opened 2011)	HMS *Colossus* (opened 2009)	Norman's Bay Wreck (opened 2011)	Total
2008	0	166	0	166
2009	22	257	20	299
2010	197	204	0	401
2011	672	218	65	955
2012	264	320	81	665
Total	**1155**	**999**	**166**	**2320**

Table 1: Number of named divers on licences issued for three protected wreck diver trails, 2008 to 2012

The research data was obtained through an online survey of people who had visited the *Coronation* in 2011 and 2012. The questions chosen aimed not only to understand visitors' economic spend, but also to assess the success factors of a diver trail of this nature.

Due to current licensing procedures, both the numbers of individual visitors and the number of overall visits undertaken were hard to calculate. Nevertheless, by comparing the figures for the three diver trails currently running, it was possible to demonstrate that the opening of a visitor trail had an immediate impact on the numbers of people interested in diving these sites (Table 1). On the HMS *Colossus* site the number of named visitors rose from 166 to 257 (154 per cent increase); on the Norman's Bay Wreck named visitors rose from zero to 65 and on the *Coronation*, the named visitors rose from 197 to 672 (341 per cent increase).

Seventy-four respondents took part in the online survey. Of these, 69 people undertook 105 visits to the *Coronation* as part of the diver trail in 2012. These 69 individuals spent a total of £8,085, an average spend of £117.17 per person and of £77 per visit. In addition to the visits to the diver trail undertaken in 2012, the 69 respondents undertook a total of 49 visits to the site as part of the *Coronation* Wreck Project, which is researching the site, and which maintains the visitor scheme. Such respondents spent a total of £1,388, or an average of £28.32 per visit (Table 2).

Question	Combined responses
In 2012, how many times did you visit the *Coronation* as part of the wreck diver trail? (If none please add a zero value)	105
For your visit(s) to the *Coronation* diver trail in 2012, how much (in total if more than one night) do you think you spent on your accommodation? (If none, please add a zero value)	£1 952
For your visit(s) to the *Coronation* diver trail in 2012, how much (in total) do you think you spent on your travel to Plymouth? (If none, please add a zero value)	£1 666
For your visit(s) to the *Coronation* diver trail in 2012, how much (in total) do you think you spent on your subsistence (food and drink, including alcohol) in the Plymouth area? (If none, please add a zero value)	£2 136
For your visit(s) to the *Coronation* diver trail in 2012, how much (in total) do you think you spent on charter boat costs (as a single diver – not the entire charter cost)? (If none, please add a zero value)	£2 331
For your visit(s) to the *Coronation* diver trail in 2012, how much (in total) do you think you spent at a dive shop (eg for equipment hire, air fills, miscellaneous purchases)? (If none, please add a zero value)	£609
In addition to the *Coronation* diver trail, how many times in 2012 did you visit the *Coronation* as part of the *Coronation* Wreck Project? (If none, please add a zero value)	49
If you have visited the *Coronation* in 2012 as part of the *Coronation* Wreck Project how much do you think you spent in the local area per visit? (If none, please add a zero value)	£1 388

Table 2: Combined responses to eight of the online survey questions

In summary, the study found that in 2012 alone over 700 visits were made to the wreck, generating £42 000-worth of benefits to Plymouth: over £60 per visitor to the city.

The impetus for the study came from a meeting in Paris in April 2012 of the Scientific and Technical Advisory Body to UNESCO's Convention on the Protection of the Underwater Cultural Heritage. Here the development of 'models for managing underwater cultural heritage in a way that brings benefits for the sustainable economic development of regions' was proposed, in order to 'increase the positive image of underwater archaeology and the involvement of the public in the awareness, the protection and enjoyment of the underwater cultural heritage.' Recent studies by the Heritage Lottery Fund (for example, Oxford Economics 2010: 3) have aimed to make comparable quantitative assessments of the economic benefits of heritage-related tourism, so that comparisons could be made to other sectors of the UK economy.

The study was funded by English Heritage, which, under its National Heritage Protection Plan, recommends 'Ensuring that the public understand and agree that looking after our heritage is important both in terms of the economy of the country and the well-being of its people.' English Heritage has had responsibility for the management of the 47 designated historic wreck sites since 2002, and it is a criminal offence for a person to dive on or interfere with these sites without a licence.

Alison James, English Heritage Project Assurance Officer for the study said that '*the Coronation diver trail is an outstanding example of how heritage can really contribute to the local economy and it is thanks to the passing of the Protection of Wrecks Act forty years ago that we are able to protect it along with 46 other important wreck sites that bear witness to the country's remarkable maritime heritage. It is fantastic to be able to demonstrate that underwater heritage and tourism is a contributory factor to the growth agenda – a fact recognised by all UK Governments in the UK Marine Policy Statement.*'

Mark Pearce the local licensee of the *Coronation* wreck stated that 'Although it's underwater, and for most, out of sight means out of mind, the value of the protected wrecks around our coastline should not be underestimated. The local wider economic benefits can clearly be seen by this study. Wherever wrecks like this exist, and where possible due to the local infrastructure and location, these sites should be made more accessible. In many ways, a duty of the licensees to see how this could and should be achieved. The *Coronation* has proved a valuable example of how possible it is, using the past to enthuse the future generations of archaeologists.'

The study demonstrates that underwater historic wrecks do not have to be a burden on the taxpayer and insists that with proper visitor access they can actually be a great benefit to local economies. Indeed, two new visitor trails are currently in development, one on the HMS *m/A1 submarine*, off Selsey (Sussex) and one on the wreck of the *Iona II*, off Lundy Island. Both are due to open in 2014. Clearly, being under the sea does not have to mean being undervalued.

Mark Beattie-Edwards MIfA has worked for the Nautical Archaeology Society since 2001 and is now its Programme Director. Prior to 2001 he worked for Wessex Archaeology. A graduate of the University of Southampton, Mark has worked on both underwater and foreshore sites in the UK and abroad and is currently the licensee of two English protected wrecks, the Holland No. 5 submarine and the Norman's Bay Wreck.

The author would like to thank the following individuals and organisations for kindly providing the supporting information used in the study: Alison James (English Heritage), Mark Pearce and Roger 'Ginge' Crook (*Coronation* Wreck Project).

FURTHER READING

Camidge, K 2009 *HMS* Colossus *Dive Trail Project Report* (Cornwall: Cornwall and Isles of Scilly Maritime Archaeology Society), available at: http://www.cismas.org.uk/downloads.php

Nautical Archaeology Society 2011 *The Norman's Bay Designated Wreck Diver Trail: Final Report* (Portsmouth: Nautical Archaeology Society). English Heritage Project Number 5946, Nautical Archaeology Society Project Number 2009_003.

Nautical Archaeology Society 2013 *The Local Economic Value of a Protected Wreck* (Portsmouth: Nautical Archaeology Society), available at: http://www.nauticalarchaeologysociety.org/content/local-economic-benefit-protected-wreck

Oxford Economics 2010 *Economic Impact of the UK Heritage Tourism Economy* (Oxford: Oxford Economics), available at: http://www.hlf.org.uk/aboutus/howwework/Pages/Thevalueofheritage.aspx#.UW6Vmsoz9hs

Front cover of the waterproof guide book that visitors can take with them when diving the protected wreck.

Immersed in technology: a strategy for marine science

In the context of the management of the marine historic environment, English Heritage is developing new research strategies in marine science, focused on developing a better understanding of the possible physical, chemical and biological effects of climate change.

In September 2011, the Government published the UK Marine Policy Statement, which provides the framework for decision-making related to the marine environment. The statement is intended to promote sustainable economic development, enable the UK to move towards a low-carbon economy and ensure a sustainable marine environment.

The collection of scientific evidence about our marine environment underpins effective management and policy development. On 3 July 2013 the Government therefore welcomed the report *Marine Science* (House of Commons Science and Technology Committee 2013). This addressed the need to advance our understanding of the marine environment and improve our capability in marine science. It emphasised that a fully-fledged strategy, supported by a ten-year implementation plan, was now required.

At the same time, *Our Vision and Strategy for Heritage Science* was published (National Heritage Science Stragegy 2010). Developed from the 2006 House of Lords Science and Technology Committee inquiry into science and heritage, this provided an opportunity for English Heritage to contribute to strategies for both heritage science and the marine environment.

This in turn has led to the development of English Heritage's own science strategy (English Heritage 2013). The aim of this new strategy is to direct the detailed planning of support for heritage science. It identifies the essential role of marine science in tackling the broad challenges posed by 'marine attrition'.

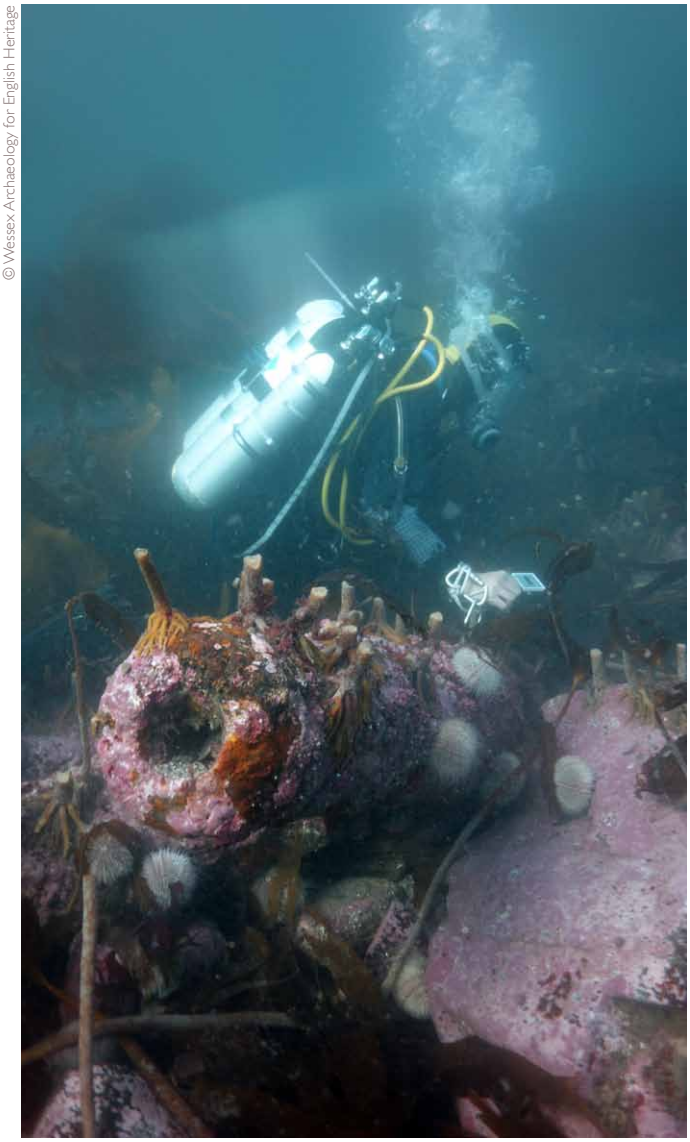
Attrition means the gradual deterioration that all archaeological sites and monuments undergo as a result of the environment in which they are set. It is a particularly crucial factor for underwater sites, which face physical, chemical and biological threats, including changes in ocean temperature, increasing ocean acidification, and the damaging effects of invasive marine species. The identification of such environmental threats to the cultural heritage is, it should be noted, one of the core strands of English Heritage's National Heritage Protection Plan.

In order to understand the physical environmental characteristics of archaeological sites underwater, therefore, we implemented a series of marine environmental assessments, based at two protected wreck sites in south-west England. The aim was to contribute to a trial of stabilisation methodologies. At one of these sites, a sub-sea data logger was deployed over a three-month period. This recorded dissolved oxygen, water chemistry, pH and temperature. This work was coupled with sediment level monitoring and sampling.

The threat posed by attrition may be increased by climate change, which in the UK may bring with it relative rises in sea level, increases in water temperatures and acidification, and significant changes in ocean circulation. In order to address such changes, we have also commenced a programme of mapping invasive species. Here, the blacktip shipworm *Lyrodus pedicellatus* is of particular interest as it is active all year and has begun to invade the UK from more southerly latitudes as a result of the increase in sea temperatures. It has been recorded off Cornwall, at Langstone Harbour in Hampshire and on the *Mary Rose* protected wreck

Cornwall and Isles of Scilly Maritime Archaeology Society

A sub-sea data logger ready to be installed on the protected site of HMS *Colossus*, Isles of Scilly, so as to remotely collect environmental data.



Archaeological divers recording the deterioration of iron cannons off the Farne Islands.

site in the Solent, and in 2005 it was recorded on the coast at Sandwich, Kent. Considered to be a major threat to wooden structures (including wrecks), the GB Non-native Species Secretariat does not yet identify *Lyrodus p.* as an invasive species to the UK, but its presence is an issue for the marine heritage. We plan to map the northward migration of *Lyrodus p.* in order to help compile geographical baseline information on marine attritional threats to the historic environment.

Dissolved atmospheric CO_2 within the surface waters of the ocean, meanwhile, is changing the ocean's chemistry by increasing its acidity. The direct effects of acidification upon exposed wooden structures and iron and steel shipwrecks are not well understood, though decreases in ocean pH have the potential to accelerate rates of metal corrosion, with obvious consequences for historic wreck sites.

Although methodologies to measure the effects of changes of pH on, and corrosion potential of, historic iron shipwrecks already exist. These have been developed overseas, and do not allow for the wider risks posed by chemical attrition in UK waters. English Heritage plans to work with the UK Ocean Acidification Research Programme on research that will enable a better understanding of the impact of such changes on underwater archaeological remains. As a first step, we will create a baseline picture by recording pH levels and sea temperature at specific coastal locations during our annual diving programme.

Coupled with this research on ocean acidification we have commenced a programme of ultrasonic thickness testing on metal-hulled shipwrecks. This work is intended to identify whether corrosion is being accelerated by decreases in ocean pH.

English Heritage is thus undertaking work that will enable us to understand the physical, chemical and biological changes within our seas, threats that are not presently well understood. We are thus contributing to the wider science strategy for the UK. The *English Heritage Science Strategy* will help ensure archaeological remains underwater can continue to be enjoyed by this and future generations.

Mark Dunkley MIfA FSA is a Maritime Designation Adviser within English Heritage's Designation department. He has developed expertise in the strategic investigation and management of England's protected wreck sites.

FURTHER READING

English Heritage 2013 *English Heritage Science Strategy* (Swindon: English Heritage). Available at: http://www.english-heritage.org.uk/publications/ehss/

House of Commons Science and Technology Committee 2013 *Marine Science* (London: The Stationery Office). Available at: http://www.publications.parliament.uk/pa/cm201213/cmselect/cmsctech/727/727.pdf

National Heritage Science Strategy Steering Group 2010 *Our Vision and Strategy for Heritage Science* (UK: National Heritage Science Strategy). Available at: http://nhss.english-heritage.org.uk/upload/pdf/nhss_vision_strategy_web.pdf?1386590311

The Gosport Submarine Escape Training Tank

English Heritage research on the Gosport Submarine Escape Training Tank reveals it to be an internationally significant structure, unique in the United Kingdom and one of the most influential of its type in the world. As a result of this research, the structure has been designated a Grade II listed building.

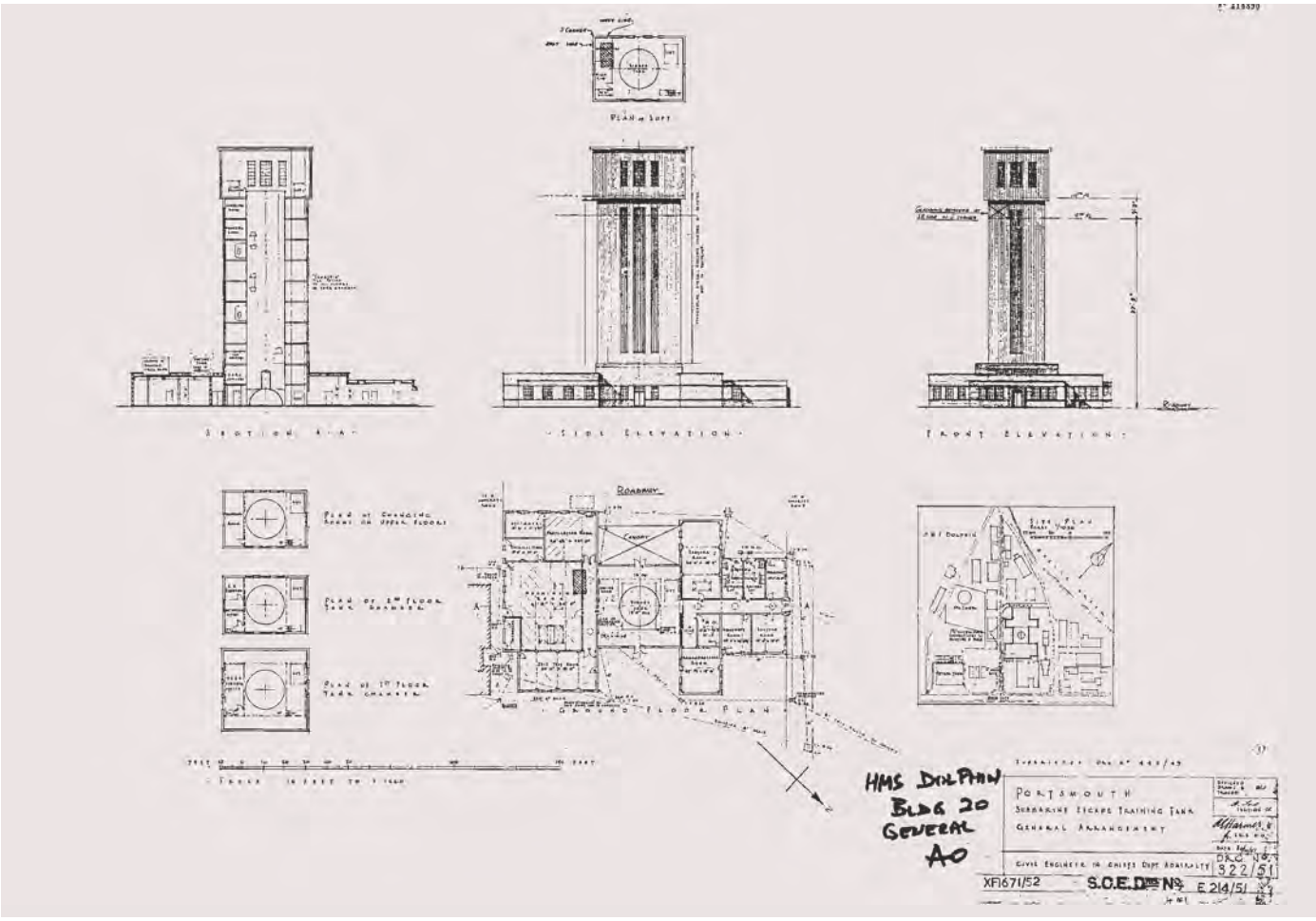
The Gosport Submarine Escape Training Tank (SETT), designed in the early 1950s, was operational from 1954: it allowed training in the safe escape from a pressurised environment, so as to simulate escape from a submarine.

Recent research, carried out by English Heritage in 2012–13 so as to assess its suitability for designation, has revealed that this building is nationally unique and was also influential internationally, acting as a model for other countries' facilities and being used for the training of foreign naval personnel. It is now a Grade II listed building. There is no public access to the structure, which lies within Fort Blockhouse, an active Ministry of Defence site.

A submarine depot had been based at Fort Blockhouse, which lies on the Haslar Peninsula, Gosport, Hampshire, since the early years of the twentieth century. From inception it was the national submarine headquarters. The fort is located in a highly strategic position on the west side of the entrance to Portsmouth Harbour, and the SETT tower is prominent on Gosport's skyline, sitting near the harbour mouth opposite the Spinnaker Tower on the Portsmouth shore. Originally named the Haslar Submarine Depot, and shortly afterwards HMS *Dolphin*, it developed rapidly from its establishment in 1905 with facilities for submarine docking and refuelling (such as the well-named 'petrol' pier) and accommodation for submariners.

Veronica Fiorato, © English Heritage

The SETT tower overlooks HMS *Dolphin* and Fort Blockhouse.



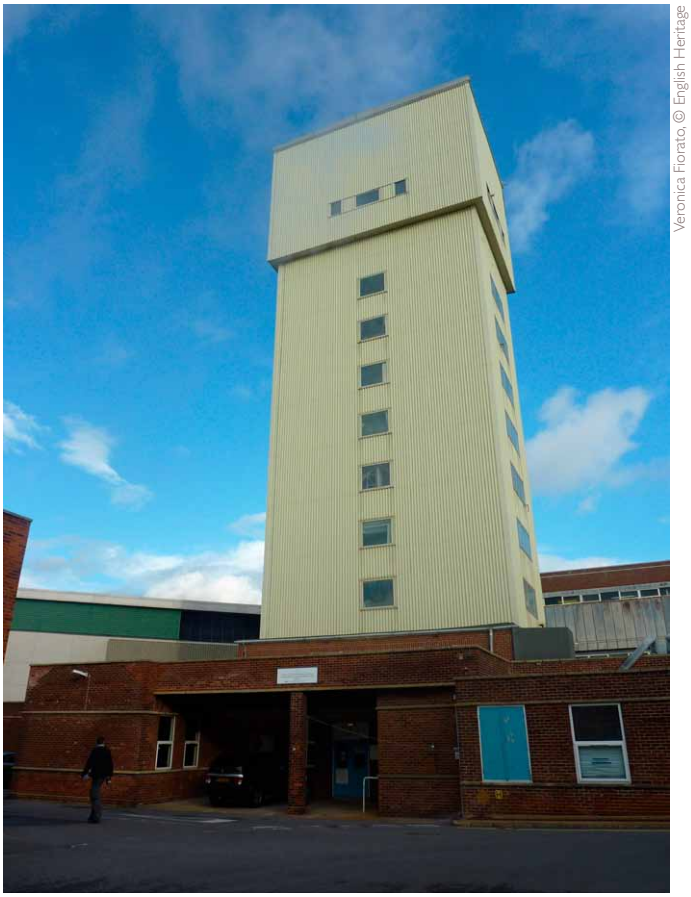
An original early 1950s design drawing.

Before the SETT was built, submarine escape training was conducted in a 15-foot (4.6m) tank at HMS *Dolphin*, but not all submariners received such training. Following a number of accidents, a committee was established to examine escape arrangements for Royal Navy submarines, and following the report in 1946 of its chairman, Captain Ruck Keene, the Board of Admiralty decided to give safety training to all submariners. The SETT was constructed as part of these facilities. Design drawings survive dated variously 1950 and early 1951; the first training session took place in July 1954.

The SETT comprises a vertical escape training tank encased in a rectangular ten-storey tower which is surrounded at ground floor level by offices, accommodation and plant. It includes classrooms, medical facilities, space for the storage of diving suits, a laundry, and a store for submarine escape immersion equipment. Design drawings and work-in-progress photographs indicate that the SETT is of piled construction, with a concrete base slab and a steel-framed superstructure. This is best seen on the 10th floor of the tower, where the steelwork is exposed with cross-bracing to the walls and a high ceiling of large steel girders. The tower has always been clad in corrugated sheet (the current cladding dates from the late twentieth century) and the tank, which is both physically and functionally at the heart of the complex, is made of welded steel panels.

The SETT is a training facility designed to teach submariners how to escape from the pressurised environment of a submarine in a safe manner known as 'compartment rush escape'. Students would be sealed in a watertight compartment at the base of the tank. The compartment would then be flooded and the student would make their escape. It was vital to their safety that

The tower as depicted on the SETT training unit badge.



Veronica Fiorato, © English Heritage

The steel-framed tower and brick ancillary structure.

ascent was carried out correctly, and the training enabled submariners to build up tolerance to what was naturally a stressful situation, repress any instinct to panic, and respond to commands without question. Observation ports allowed instructors to monitor the students, and escape compartments were located at nine and 18 metre-levels. A rescue team, with support from medical officers, remained on standby at the top of the tank throughout the training session. No visit to the SETT was complete without the cautionary tale of the release of the bag from a wine box from the bottom of the tank: its inevitable rupture during ascent demonstrated what would happen to a person's lungs if they did not come up carefully.

In its early days the tank was used for research and development work, such as the development of escape suits. The tank was also used for 'tap signal' training, preparing submariners in case of the failure of a submarine's communication systems.

The circular tank is free-standing within the tower, supported by its own weight and that of the (warm, chlorinated) water it contains. The level of ascent is painted on its side every five metres up, and there are small circular observation windows within the wall of the tank, wall mounted short ladders, and access hatches. At the top of the tank, on the 10th floor of the tower, there are hoists to lift equipment in and out of the water.

Also on the 10th floor is a decompression chamber, the air for which is supplied by tanks on the floor below. The seventh contains the 9m air lock for emergency escape, with the 18m air lock on the fourth floor. The second floor houses an air reservoir which ensured instructors did not have to constantly rise to the surface for air.

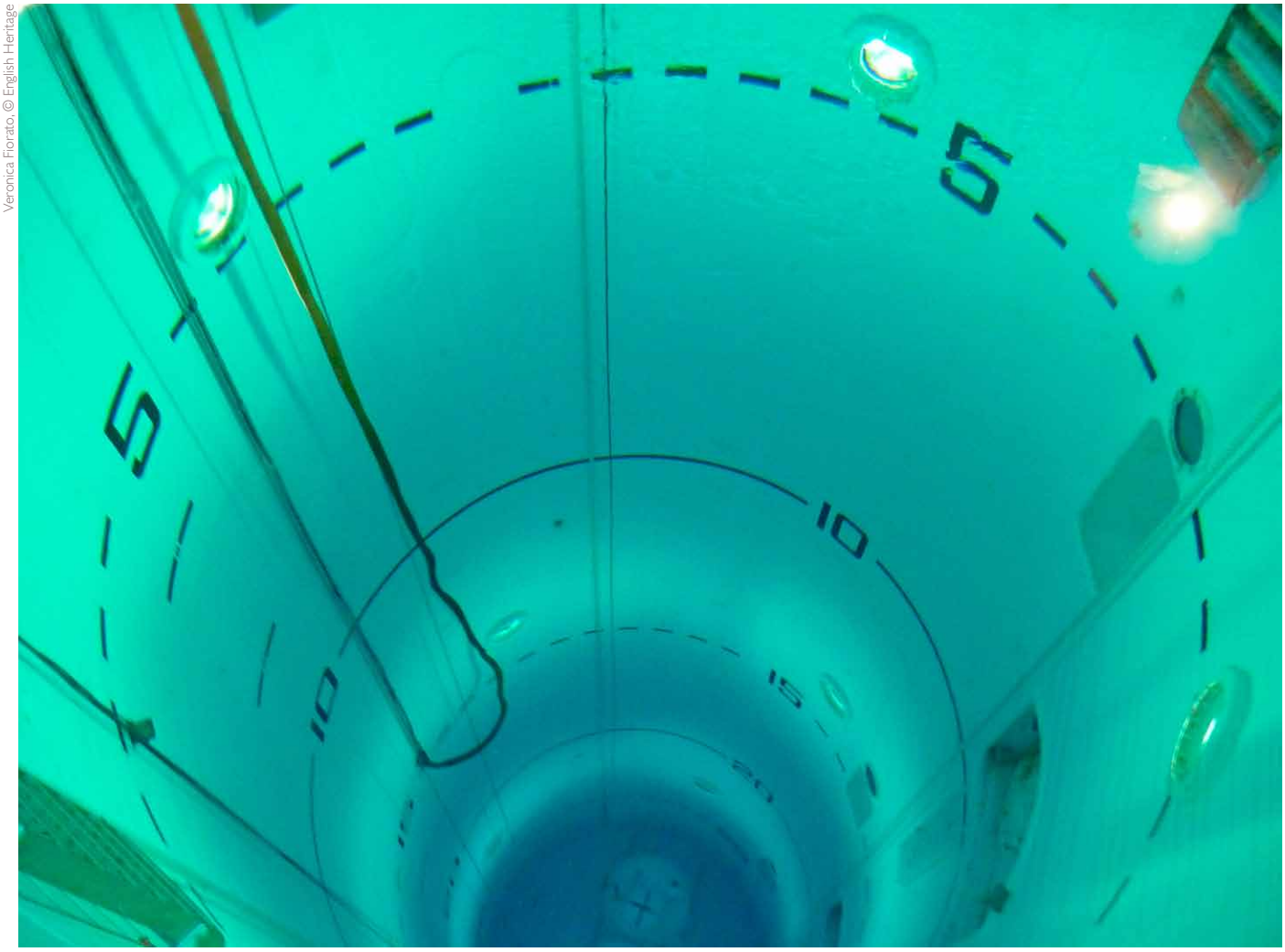
Submarine escape training tanks are rare structures. This is the only one of its kind in the country and only a handful are known in the world. Two decommissioned pre-World War II examples survive in Hawaii in the United States of America; a functioning structure has been built there more recently. Others are known in Germany, Norway, Sweden, Turkey and at HMAS *Stirling*, Australia, some of which copied the Gosport design. The SETT has always been an essential part of the Royal Navy's Gosport facilities: every Royal Navy submariner passed through here for escape training between the early 1950s and 2009, when military training ceased.

However, the SETT was not solely used by the Royal Navy. Members of the Special Forces; submariners from other countries (including fifteen foreign and Commonwealth navies); submarine escape instructors for the American, French, Italian, South African and Canadian navies; and staff from the SETTs in Australia, Germany and the United States of America all came here. It was also used by leisure diving clubs and at its peak of operation in the 1960s and 1970s trained in the region of 4,500 students a year.

Due to the improved safety mechanisms inherent in modern submarine design, health and safety concerns relating to the nature of the training itself, and the simple fact that submarines now operate in locations where escape of this nature would not be possible, Royal Navy training at the SETT ceased in 2009. Dive clubs continued to use it for a further three years, and the SETT is still very occasionally used for demonstrations.

Veronica Fiorato, © English Heritage

The compartment from which students would make their escape.



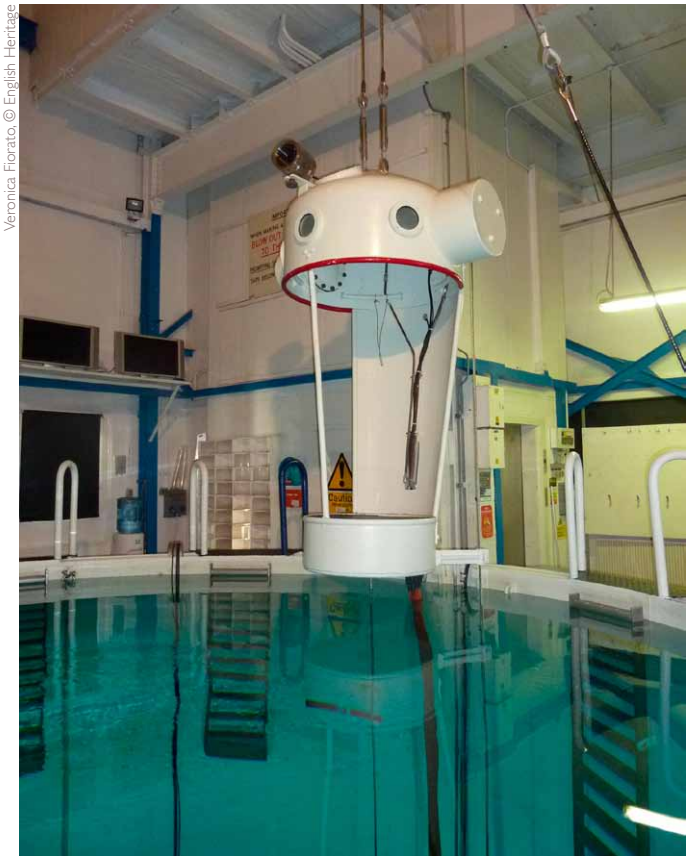
Depth markers and escape hatches inside the tank.

It remains an important and influential building in the history of submarine escape training internationally, the fact that it has remained in use to the present day a testament to the success of its design. This significance has now been recognised by its designation as a Grade II listed building. Thus protected, it should grace the Gosport skyline for many years to come.

Veronica Fiorato MIfA is Designation Team Leader for Greater London and the South-East of England. She manages a team dealing with the assessment of sites for listing, scheduling, landscape registration and the protection of wrecks. Veronica has also worked in local government, where she managed archaeological services, before joining English Heritage in 2003. She has a particular interest in military sites and structures, especially those of the twentieth century.

FURTHER READING

National Heritage List for England (http://list.english-heritage.org.uk) no. 1414020: Submarine Escape Training Tank (SETT), HMS *Dolphin*, Grade II Listed Building.



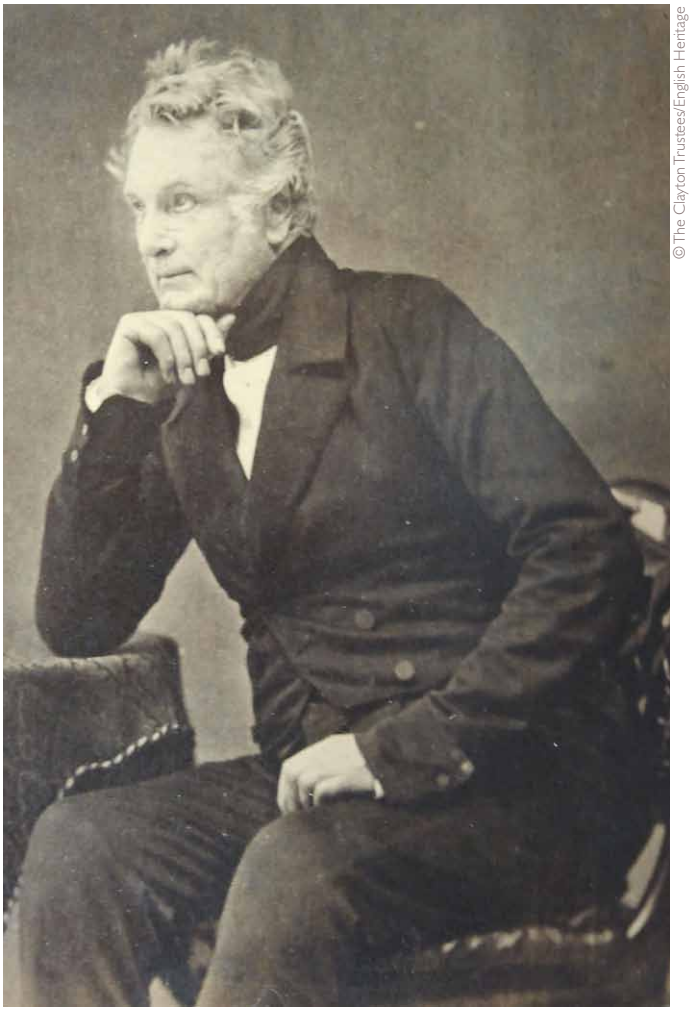
A tank hoist in position on the tower's 10th floor.

Old collection provides new insights into Roman Britain

Of the 11,000-plus items in the Clayton Collection, many have never been studied or published. The collection was assembled by John Clayton, a nineteenth-century antiquarian, from excavations on and around Hadrian's Wall. A project to unearth some of its hidden gems, and evaluate the potential of this material, has already borne fruit.

By the time of his death, John Clayton (d 1890) a lawyer, town clerk, landowner and antiquarian, owned all of Hadrian's Wall from Acomb to Cawfields (Woodside and Crow 1999, 85), preserving for posterity the famous central sector. He also conducted excavations on different parts of the wall every year from the early 1840s until his death. These were led by William Tailford Sr. (d *c* 1855), and later by his son, William Tailford Jr. (d 1912).

The finds from these excavations were kept in the pagoda in Clayton's garden (this became known as the Antiquity House), and in and around his home. Apart from sending a few items to the British Museum, such as a famous military diploma found in 1879, most of the material was kept together. In 1895 a museum was built to house the collection by his nephew and heir Nathaniel George Clayton; the collection's history thereafter,



John Clayton.

Some of the altars and one of the cases at the English Heritage museum at Chesters.

A fragment of a *mortaria*, showing the potter's stamp of Docilis 3.

Category	Group	Number	Percentage
A	Arms and armour	322	49.62
B	Buckles and belt plates	62	9.44
C	Strap ends (1st–3rd century AD)	10	1.52
D	Cart fittings	22	3.35
E	*Phalerae*	10	1.52
F	Misc. harness	53	7.91
G	Pendants (1st–4th century AD)	11	1.67
H	Phallic pendants	8	1.22
I	Mounts	116	17.66
J	Phallic Mounts	0	0
K	Other looped strapped mounts	9	1.37
L	Button-and-loop fasteners	16	2.44
M	Late buckles	0	0
N	Late strap ends	0	0
O	Crossbow brooches	12	1.83
P	Spurs	2	0.30

The Clayton *militaria* divided by category.

especially complicated after it left the family's care in 1930, is summarised in McIntosh 2014.

Today, the Clayton Collection is curated by English Heritage on behalf of The Clayton Trustees. It contains over 11,000 items, including 53 centurial stones, 95 altars, and a range of dress accessories, tools, *militaria* and ceramics, as well as two paper archives relating to the history of the collection itself. About 1,000 of these items are displayed at Chesters Museum.

RESEARCH

The excavators, following the methodology of the era, thought of altars, sculpture and Samian ware as particularly important. By contrast they often discarded coarse-ware pottery and animal bone. In spite of this the collection contains much material with great research potential that has long been 'unloved'. As part of a PhD and project at English Heritage areas of the Clayton Collection have been researched.

For example, the collection includes no less than 51 quern stones, forming an impressive display in our small gallery, but accompanied by very little interpretation.

An ornately enamelled military belt mount.

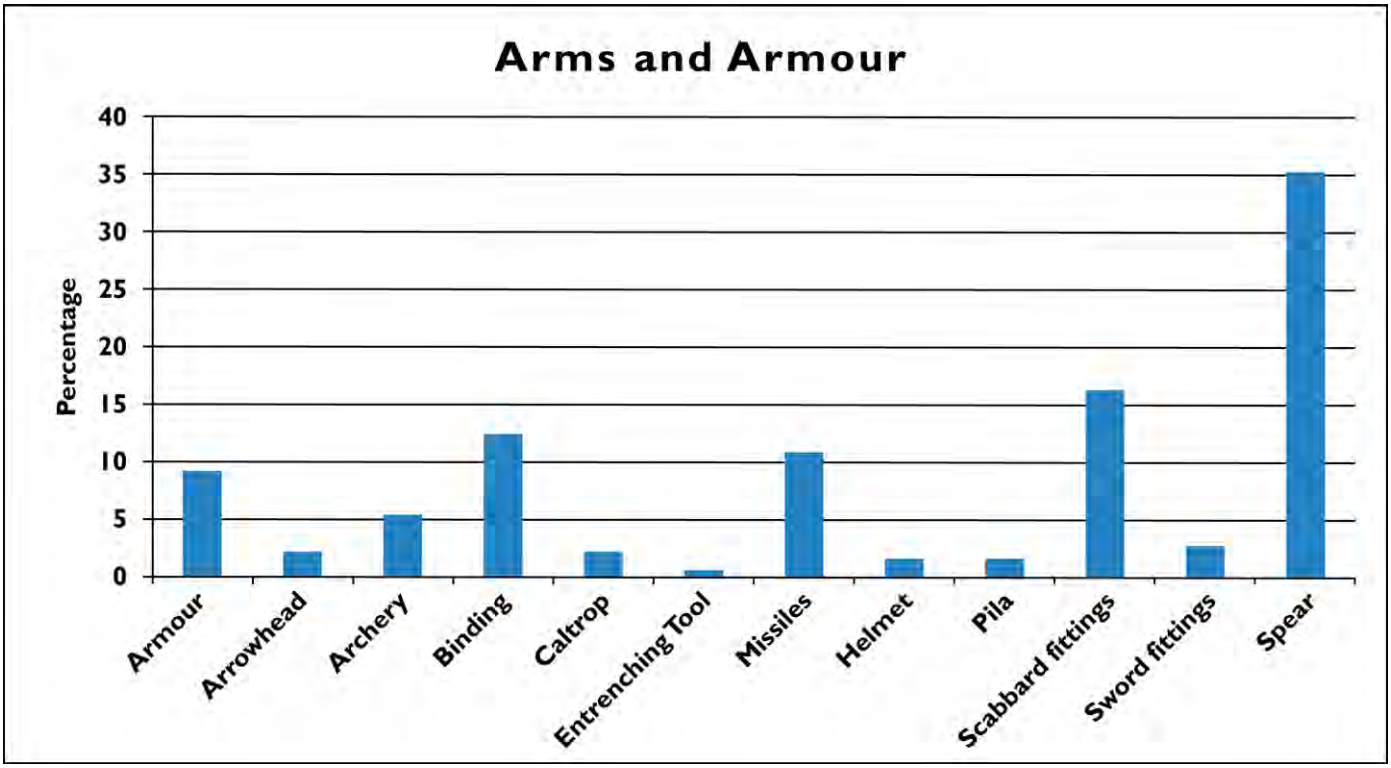
An iron spearhead with an unusual bulbous section.

With Dave Heslop and John Cruse these have all now been recorded to a high standard and included in the Quern Survey of Hadrian's Wall. We hope, as a result, to say much that is new about these objects, which can tell us about grain supply and consumption on military sites.

Another piece of research on material rather ignored by the Victorians was carried out by Kay Hartley and Eniko Hudak on the collection's *mortaria* (grinding vessels). The fabric of these vessels can be used to identify where they were made, and their stamps often allow us to name individual potters. Hartley and Hudak found 43 such stamps, representing the work of 26 different potters.

The *mortaria* came from multiple places in Britain, but also from Raetia (a province which spanned parts of today's Switzerland, Italy and Germany) and Germany. With such knowledge, we can begin to think about whether such objects and their sources are similar to those found elsewhere on Hadrian's Wall and what that means in terms of trade and supply.

Detailed studies of specific aspects of the collection are also being carried out. The first of these is items related to the military (excluding inscriptions), and is known as *militaria*. There are just over 650 such items, comprising just under six per cent of the collection as a whole.



Breakdown of the arms and armour category (185 items). 137 arrowheads from a hoard found at Housesteads are not included; as with any hoard, these skew the data.

A copper alloy mount with the head of a maenad.

Militaria is seen as material used or worn specifically by soldiers, as opposed to material which could be used or worn by either soldiers or civilians. For example a wide leather belt was an important part of military dress, and fittings from such belts are among the *militaria* in the collection. The table (page 13) shows a breakdown of each group of material. Research will now be pursued on some particularly interesting items.

Within the *militaria* there are some 322 items of arms and armour. The very size of this group suggests it deserves closer attention. It has thus been broken down into sub-groups, to see which types of material were best represented.

As the graph opposite shows, spears are by some distance the largest group of items categorised as arms and armour. There are 62 spearheads, an unusually high figure: by comparison, at South Shields fort parts of only four are known. What this means is not clear, but it could be linked to the presence of a cavalry unit, the *Ala II Asturia*, as it is known that cavalrymen usually carried one spear and two javelins. The blades of about twenty of these spearheads have an unusual bulbous section, and it is possible that these weapons were used for display and not intended to be functional. Cavalrymen are known to have owned parade armour, so perhaps such spears were part of that tradition?

CONCLUSION

Although this material was mostly excavated around 150 years ago, and there has been a museum to display it since 1895, a huge amount of information remains to be gleaned from the Clayton Collection about life in Roman times. For example there is the beautiful furniture mount of a maenad (one of Bacchus's followers), mentioned briefly in the important 1903 catalogue of the material, but since then left unstudied. There is much more work to be done, and the PhD will only touch the surface!

Frances McIntosh is Curator of Roman Collections for English Heritage. She holds a degree in Archaeology from Durham University, and, after a few months digging, escaped the mud to become a Finds Liaison Officer for the Portable Antiquities Scheme, based in Liverpool. She began a part-time MLitt at Newcastle, looking at Roman brooches, and whilst there moved to work as a Finds Liaison Officer in Durham. In 2011 she started her PhD full time, researching the Clayton Collection and its archaeological significance. In July 2012 she joined English Heritage, and hopes to complete her doctorate in 2016–17. Her main research interests are in Roman material culture, the Iron Age/Roman transition and antiquarian study of the Roman World.

FURTHER READING

McIntosh, F 2014 'The wall's first great collection: The Clayton Collection', *in* Collins, R and McIntosh, F (eds) *Life on the Limes: Studies of the People and Objects of Roman Frontiers* (Oxford: Oxbow books).

Woodside, R and Crow, J 1999 *Hadrian's Wall: An Historic Landscape* (London: The National Trust).

Kirklees Park, West Yorkshire: assessing a designed landscape for designation

Following proposals to allocate part of Kirklees Park, West Yorkshire, to industrial development, the site was assessed for its suitability for designation. The resultant research led to a reassessment of the authorship, coherence, and significance of this designed landscape, which can now be attributed to Richard Woods. The park was registered at Grade II in June 2013.

In 2012 potentially significant changes to the character of Kirklees Park were proposed in the draft local plan being developed by Kirklees Council, with part of the site being earmarked for industrial use. As a result an application to have the park designated was made at the end of December. An assessment of the site's significance was needed.

The park was originally the site of Kirklees Priory, the nunnery in which Robin Hood is reputed to have died after poisoning. The estate was acquired by John Armytage (d 1573), a wealthy clothier, in 1565. He established his family seat, Kirklees Hall there and his descendant Sir Francis was raised to the Baronetcy in 1641.

Seventeenth-century plan from West Yorkshire Archive Service, showing the estate before being turned into a picturesque landscape in the 1770s.

Owned by Louis Pickersgill, photo Paul Stamper

A map of the estate in 1788 by Crossley.

In the 1770s, the hall was altered to the design of John Carr (d 1807) and its grounds were re-landscaped, sweeping away earlier gardens and enclosures, adding a string of ponds and a large walled garden to its north, and setting out various pleasure grounds and walks. The sixth baronet, Sir George Armytage (d 1918), undertook a number of further improvements in the Edwardian period, possibly funded from the revenue of a coal mine situated just outside the park. Sir George also conducted archaeological excavations within the park, uncovering the plan of the priory and investigating an earthwork enclosure known as Castle Hill, which he erroneously concluded was a Roman fortification. Although some of the park has been given over to arable, and the hall has been divided into apartments, it remains remarkably intact despite standing immediately south of the M62 and surrounded by creeping urbanisation.

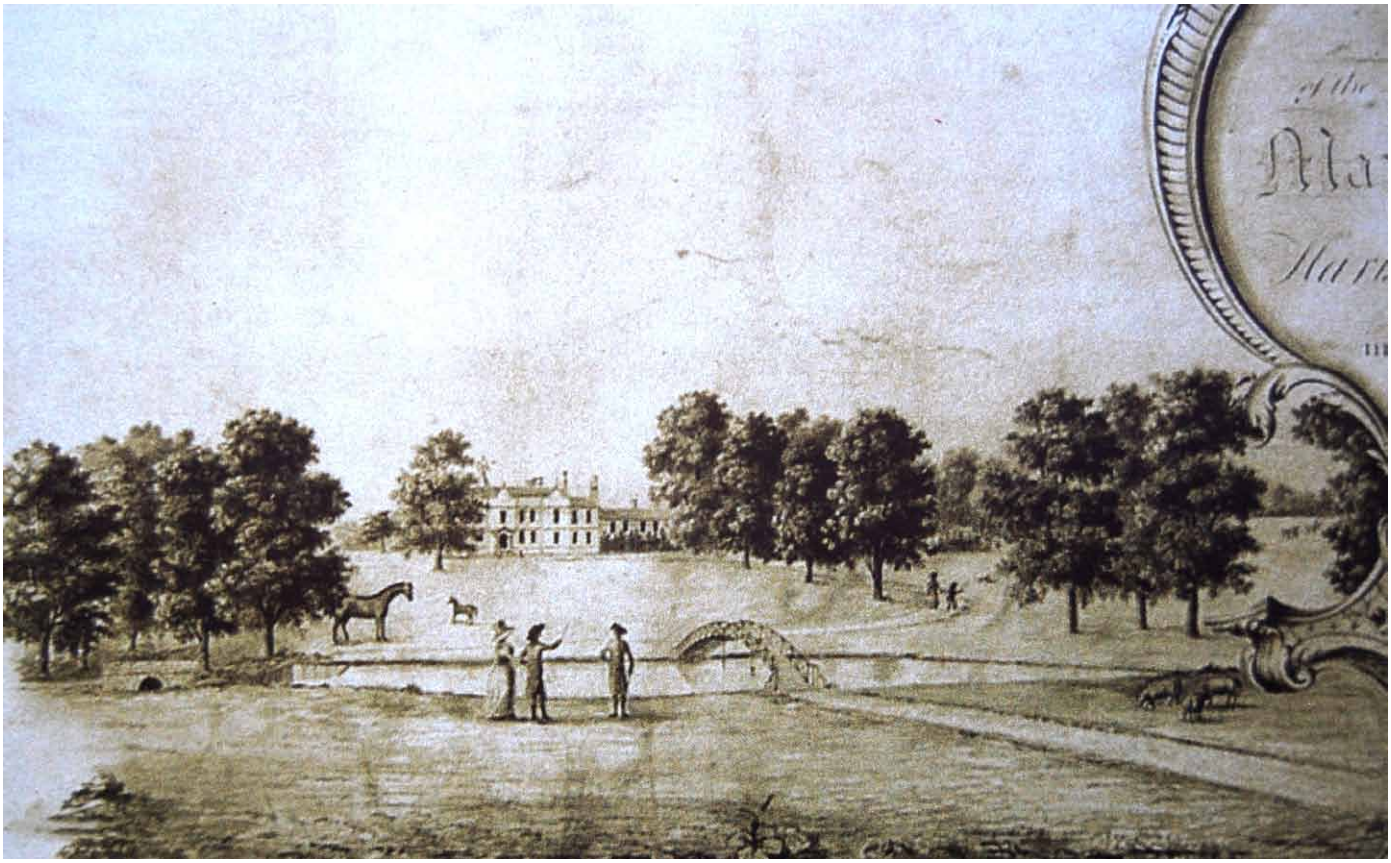
Although heritage assessments of Kirklees Park had been conducted in the 1980s and 2012 by consultants, its historical development was not really understood. Fiona Cowell's book (Cowell 2010) on Richard Woods noted a payment to Woods (d 1793) for a landscape design in 1760, but because no plan of this survived, and those by Francis Richardson and William Crossley did, she did not claim Kirklees as being a design by Woods.

The English Heritage study of spring 2013 reassessed these plans, and drew on other items held in the extensive Armytage archive, which is held by West Yorkshire Archive Service. Much of this material was supplied by Lauren Clarkson, Conservation Officer for Calderdale Council (most of the park lies within Calderdale rather than Kirklees); Dr Peter Goodchild, the academic who had advised Lady Armytage in the 1980s and David Hepworth, a resident on the estate. The new owner, Louis Pickersgill, also produced a copy of a key plan and a series of Edwardian photographs of the grounds. However physically walking through the landscape was key to the process, allowing one to see how the archive material actually related to what survives on the ground, using the documentary research to actively interpret the landscape.

In 1757, Francis Richardson produced two plans for Sir John Armytage: a map of the existing landscape and a proposed new design. William Crossley produced two comparable plans in 1788, and it is clear from these that by this time the landscape had been significantly remodelled, basically taking the form it takes today, which does not follow Richardson's proposals.

Sir John had died unexpectedly in 1758, aged just 27, and the estate had passed to his younger brother George, who was a friend of John Spencer. Spencer, in turn, had commissioned Richard Woods to landscape the grounds of Cannon Hall near Barnsley. He thus recommended him for Kirklees. Woods subsequently visited Kirklees and was paid for his proposed landscape design in 1760, although work on the re-landscaping only commenced in the 1770s after John Carr's alterations to the hall had been completed.

The north front of Kirklees Hall today.



Crossley, owned by Louis Pickersgill, photo Paul Stamper

The north front, depicted by Crossley in 1788: the iron bridge was scrapped in 1840.

Comparison with other landscapes by Woods, such as Cannon Hall in South Yorkshire (Registered Grade II) and Wardour Castle, Wiltshire (Grade II*), demonstrates that Kirklees is a very good example of Woods's work, which was generally much less expansive than that of his contemporary Lancelot 'Capability' Brown. Instead, Woods focused on providing varied pleasure grounds and the creation of circular walks that took in points of interest. These often included productive areas such as walled kitchen gardens, prefiguring the ideas of Humphrey Repton a generation later.

The Ordnance Survey maps of 1893, 1907 and 1922 allow the Edwardian changes to the park, such as the addition of a ha-ha around the hall and the construction of a 'Roman watchtower' at the centre of Castle Hill, to be identified. Site inspection suggests that repairs to bridges, cascades, and the park wall all occurred at this time, although all of the Edwardian works can be seen as building on, rather than undermining, Woods's earlier design. Some of the resulting work is of interest in its own right: for example, the Roman watchtower built in 1905 is perhaps the earliest example in England of a historical reconstruction of a Roman building, being roughly contemporary with the recreated fortifications at Cardiff (1898–1923) and at Saalburg, Germany (1898–1907).

© Eric Branse-Instone

Slip on the south side of the great walled garden.

© Eric Branse-Instone

A walk along the Nun Brook takes in the picturesque Malthouse.

© Eric Branse-Instone

The Nuns Grave, probably created in 1708 using medieval grave slabs, forms a focus of a circular walk.

The new attribution to Woods, and the realisation that the park exhibits many of the characteristic features of his work, thus added to the site's significance and contributed to the recommendation to designate. Later alterations can undermine the case for designation, but at Kirklees, the Edwardian changes provided an additional layer of interest while leaving Woods's design essentially intact.

There remains much to research at Kirklees Park, but what we now know is sufficient to confirm that it fully merits inclusion in the Register of Parks and Gardens. The extensive archives associated with the site, for example, might help us uncover the complex evolution of the home farm which developed from the priory's outer court and became the site of the original Kirklees Hall. The development of the current Kirklees Hall is also complicated. It originates as a post-Dissolution mansion, and was extended and re-fronted in the early seventeenth century prior to John Carr's remodelling of the 1760s.

The current study depended heavily on the work of others, especially as regards archival research. It was also carried out in conditions of considerable urgency, as the outcome of the designation assessment would have a significant impact on the developing local plan. The focus of the work was necessarily on the need to consider the available information, so as to assess the park against designation criteria. Site visits played a fundamental role in this process, helping gain a proper understanding of the landscape and to assess its level of survival. They also provided an opportunity to engage with Louis Pickersgill, who had bought the park from the Armytage family just weeks after the work started. Designation site visits can often be challenging because you need to deal with owners' anxieties whilst at the same time interpreting a site that you are seeing for the first time to someone who is far more familiar with it than you are. In spite of this, such conversations are a vital part of the designation process, often providing information and insights that would otherwise be missed, and creating an opportunity to engage and enthuse owners about the value of a site.

The best form of protection for the historic environment is not legal designation: well-informed and interested owners are far more important because it is they who have day to day control over their property.

Eric Branse-Instone is a Designation Adviser in the northern team. He has been carrying out designation assessments since the early 1990s, initially with an industrial archaeology consultancy, and joined English Heritage in 1996. A prehistoric archaeologist by training, he is now (like most of his colleagues) a period and subject generalist, equally at home assessing a designed landscape, a Victorian church or a Bronze Age round barrow.

The author would like to thank Lauren Clarkson, Peter Goodchild, David Hepworth and Louis Pickersgill for their generosity with information and time.

FURTHER READING

Cowell, F 2010 *Richard Woods, 1715-1793: Master of the Pleasure Garden* (Woodbridge: Boydell Press).

National Heritage List for England (http://list.english-heritage.org.uk) no. 1413828: Kirklees Park, Grade II Registered Park and Garden.

© Eric Branse-Instone

An Edwardian addition to the great walled garden.

The mosque in Britain

English Heritage has commissioned architect Shahed Saleem to produce the first authoritative survey of the British mosque. The result, to be published in 2014, will reveal the story of a building type which has had a major impact on the urban landscape in recent decades.

Perhaps better than any other building type, places of worship trace the complex story of the changing community make-up of the UK. Mosques are one among many crucial elements in this story and to address a gap in our knowledge English Heritage has commissioned architect Shahed Saleem to research the subject. The result, *The British Mosque: An Architectural and Social History*, will be published in 2014.

Religious affiliation has often been used in place of ethnic origin as a key signifier of immigrants' identity, especially since the 1980s. This can provide a misleading impression as the Muslim community is by no means ethnically nor ideologically homogeneous. This is a network of distinctive communities, and it has created varied and fascinating places of worship.

The first mosques in Britain date from the late 19th century, though there had been a Muslim community in the country for two hundred years before that. Inextricably linked to the spread of the British Empire, and at first to the shipping trade in particular, Muslim immigration was initially focused on ports, only later spreading to other urban centres.

Alun Bull. © English Heritage

The Masjid e Tauheedul Islam, Bicknell Street, Blackburn.

Alun Bull, © English Heritage

Qurans, Hanfi Sunni Muslim Circle Mosque, Preston.

Alun Bull, © English Heritage

The Jamia Masjid, a typical house-mosque and the first mosque in Bradford.

Alun Bull, © English Heritage

The Chairman of the Mosque committee and the Imam, Sheffield Islamic centre, Madina Masjid.

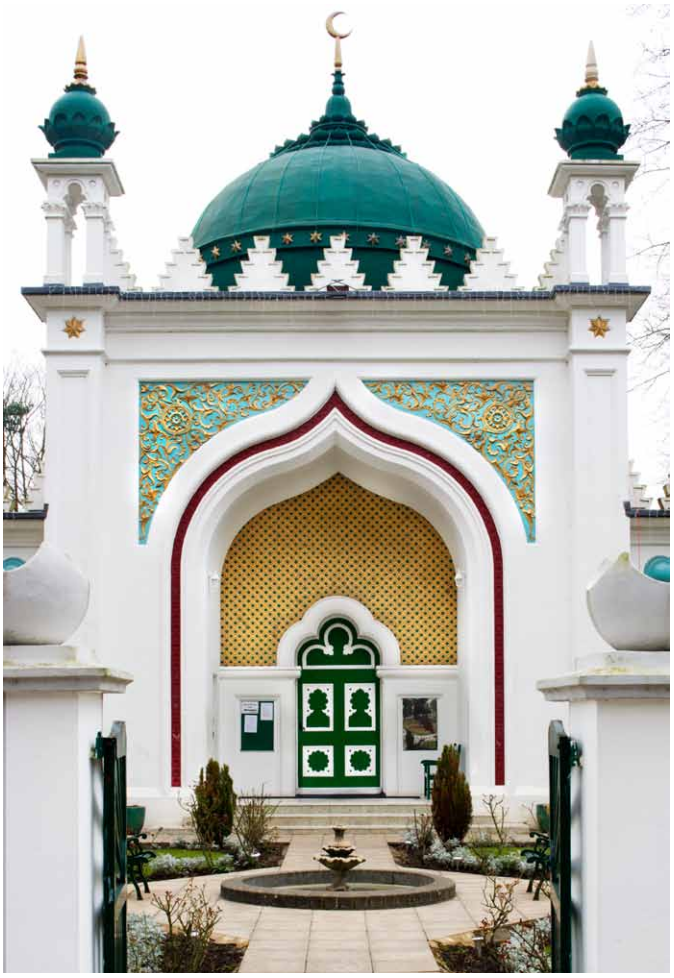
The impact of migration on urban landscapes is of course far from a 20th-century phenomenon. The population of Liverpool expanded from 7,000 in 1708 to 376,000 in 1856; 80 per cent of this growth was due to migration. These migrants, mainly from Ireland, Wales and Scotland, brought their own forms of religious life. A variety of Nonconformist and Roman Catholic buildings stand testament to the multi-denominational nature of Christianity at this period. Liverpool is also the home of the first recorded mosque in Britain. In 1889, 8 Brougham Terrace, a handsome Georgian terrace house, was converted into an Islamic place of worship. The leading light of this foundation was Abdullah Quilliam (d 1932), a British solicitor who had converted to Islam in 1887. By 1896 there were 182 converts to Islam in Britain.

Mosques provide a congregational prayer space, orientated towards the Ka'ba in Mecca, a hollow rectilinear structure described by the Quran as built by Abraham. The Ka'ba is the physical and spiritual centre of the Muslim world. A *mihrab* (a niche indicating the direction of Mecca), and a *mimbar* (from which the congregation could be addressed), were installed at 8 Brougham Terrace. The call to prayer was made from a first-floor balcony. The significance of this foundational site is reflected in the decision, in 1985, to list the building at Grade II. Such house-mosques remained popular. The buildings were easy to come by and could be divided up into appropriate spaces, which included both prayer and washing facilities. Later house-mosques were not so much the foundation of an individual as the creation of a community. They were often, as mosque committees grew in resources and confidence, a stepping stone to the creation of more ambitious buildings. This model – from house-mosque to later new-build mosque – is not universal, however, as the largest proportion of mosques remain in adapted houses. Only a minority are purpose-built.

The first such purpose-built mosque, listed Grade II*, was built by Dr Leitner (d 1899), a Hungarian-Jewish linguist who had worked in British India. It was funded by the female ruler of the Indian princely state of Bhopal, the Sultan Shah Jahan Begum. The mosque, in Woking, is a masterpiece of Victorian Orientalism, designed by William Chambers in 1889, and the centrepiece of its founder's short-lived Oriental Institute. The late Mughal-inspired design was influential in making the dome a key element in British mosque design thereafter.

Only a handful of other mosques were built before the 1960s. Those that were, such as the Fazl Mosque at Southfields, south-west London (1926) showed signs of influence from contemporary Modernism.

The partition of India in 1947 led to new waves of migrants, often including women and families.



Alun Bull, © English Heritage

Alun Bull, © English Heritage

Alun Bull, © English Heritage

Above: Shah Jahan Mosque, 148 Oriental Road, Woking. *Top right*: The Fazl Mosque, Southfields, London, built by the Ahmadiyya Muslim Community. *Bottom right*: The Aziziye Mosque, with community facilities, Stoke Newington, London. The building was previously a cinema.

Mosque building thus expanded rapidly between the 1960s and the 1980s, and many such structures were highly localised expressions of new and developing social networks, frequently re-using existing historic buildings. Whilst some continued to be in houses, over a third of all mosques are housed in other existing buildings. A significant number gave new life to places of worship that were no longer required by their previous users, and for which no planning permission for change of use was required. Buildings with large hall-like interiors in particular lent themselves to conversion. The main architectural challenge arose from a desire to align the building on Mecca, often resulting in the reorientation of its internal spaces.

A now well-known example of this process of recasting and reinvention is the Brick Lane Jamme Masjid (listed grade II*), a building which embodies the rich migration history of East London. The Neuve Eglise was constructed for the refugee French Huguenot community in 1743. Before becoming a Weslyan Methodist chapel in 1819 it housed the London Society for Propagating Christianity among the Jews. By the end of the century the chapel and its adjacent school had been occupied by the London Hebrew Talmud Torah Classes, who as well as running educational facilities let the chapel to the Machzikei Hadas Society which existed to promote the stricter observance of religious orthodoxy. The society established a synagogue here, carrying out internal alterations that enabled the creation of a halakhically acceptable building.

Just as had happened with the preceding French and Weslyan communities, the congregation fell into decline and the building was abandoned. It was purchased in 1976 for use as a mosque, and a series of alterations have taken place, culminating in the erection of a 29m minaret on Brick Lane itself.

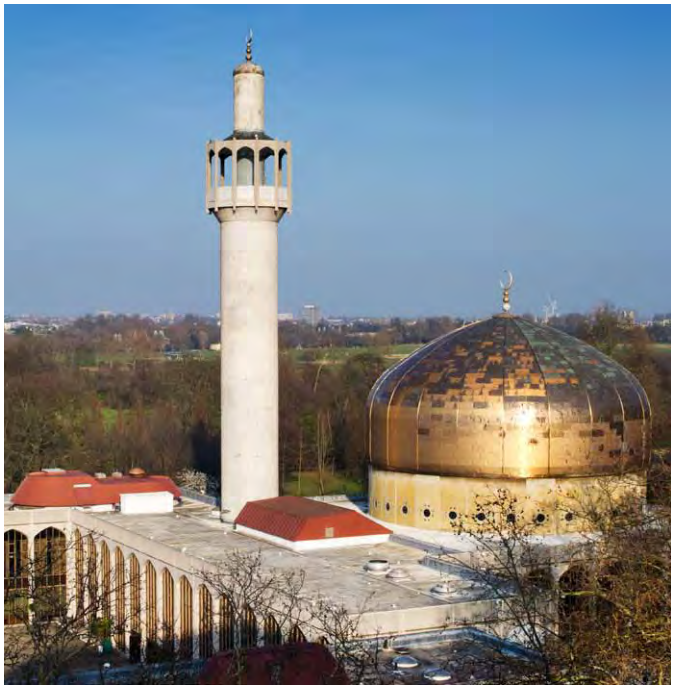
Alongside the dome, the minaret, despite being unknown at the time of Muhammad, is the most well-known symbol of the mosque. On 29 November 2009, after a public referendum, Switzerland banned the building of these structures. There is no more potent indicator of the importance of architectural symbolism than this censorship of architectural design purely as a result of its cultural association. It is just these strong associations that account for the near-ubiquitous use of minarets and

Alun Bull, © English Heritage

Didsbury Mosque, Manchester. The *mihrab* sits next to the pulpit, which remains from the earlier Christian occupation of the building.

Alun Bull, © English Heritage

Jamme Masjid, Brick Lane, east London.



Alun Bull, © English Heritage

Regent's Park Mosque, London.

domes in the proliferation of new-build and converted mosques in Britain in the 1980s. It has been suggested that in 1961 there were seven mosques in Britain; there are now approximately 1,500, the vast majority of which were constructed in the 1970s and 1980s. It was from this period that new mosques building became part of the urban and suburban landscape of Britain. The buildings of these, in places such as Wimbledon, Gloucester, Manchester, Birmingham and Preston, provided an opportunity for Muslim communities to express their identity through architecture. It was also the era when landmark buildings were created in the country's capital, such as the East London Mosque, Regent's Park Mosque and the Ismaili Centre, Kensington.

Before Shahed Saleem's work no authoritative narrative existed for the architecture of mosque building in this country. These important buildings constituent a key part of the narrative of faith, identity and architecture in Britain.

Dr Linda Monckton FSA is an architectural historian who has worked for English Heritage since 2003 as a Senior Investigator and then as Head of Research Policy for Places of Worship. She is currently an Analyst, considering social impacts on the historic environment, and leading the National Heritage Protection Plan Activity Team for places of worship.

Nappa Hall: securing a future for 'a very goodly house'

Plans to return Nappa Hall to beneficial use may lead to the removal of this important building from the Heritage at Risk register. They have also stimulated the first serious study of the building. This research throws a fascinating light on the late medieval gentry house and its development in subsequent centuries.

Nestled beneath the limestone cliff of Nappa Scar in Wensleydale, North Yorkshire, Nappa Hall, a handsome late-medieval manor house, overlooks wide pastures leading down to the River Ure. The building appears fortified, but its position immediately below the scar is hardly a sound military choice and its large ground floor windows confirm that it was never intended to be seriously defensible. Its real purpose was to signal the 'arrival' of the Metcalfe family, whose rising fortunes were launched by James Metcalfe's service to his lord and neighbour, Sir Richard le Scrope of Bolton Castle, at Agincourt in 1415. Nappa Hall echoes Bolton Castle's military aspect but it was only intended to be, as John Leland put it in 1539, 'a very goodly house'. The bulky towers and castellated parapets are essentially rhetorical devices designed to embody the military connotations of rank, not to meet the real needs of war.

In its day Nappa Hall was doubtless one of the most significant domestic buildings in the area, second only to the true castles of Bolton and Middleham. But its status, together with that of the family which built it, declined through later centuries. The building carries a legacy of changes brought about to suit absentee landlords and farming tenants, but investment was limited and much of the earlier Nappa Hall and the surrounding landscape survived intact. By the late 20th century, however, the condition of the Grade I listed gentry house and the adjacent 19th-century coach house (Grade II*) had deteriorated considerably, and following episodes of lead theft and vandalism, Nappa was left unoccupied and vulnerable to further decay.

Plans to reverse this decline and return Nappa Hall to beneficial use were put forward by a new owner in 2012.

Nappa Hall's military pretensions are overshadowed, quite literally, by the nearby Nappa Scar.

Architectural features of quality are concentrated along Nappa Hall's southern side.

These were received with great interest by the Yorkshire Dales National Park Authority and by English Heritage, both of whom were anxious to see a sustainable solution which might finally remove this long-standing entry from the Heritage (formerly Buildings) at Risk Register. Curiously, however, for a building of such well-known importance, Nappa Hall had never been the subject of detailed research, and although the project's conservation architect, John Warren FSA, had undertaken some preliminary investigations, a great many questions concerning the building's origins and development remained unanswered. Greater clarity was needed to inform the conservation debate. The national park authority approached English Heritage's Assessment Team and a rapid programme of investigation was initiated.

Field investigation was carried out principally over three days in February 2013, and comprised a close inspection of the standing buildings and an earthwork survey of their immediate surroundings. The study was greatly assisted by English Heritage's Scientific Dating Team, who organised a dendrochronological survey at short notice, and by John Warren, who was pleased to share his insights and building plans. The resulting findings make a fascinating story, one that departs from the traditional narrative in important respects.

It is probable that the service range, the eastern range which runs at an odd angle to the main hall and is the most altered of all the surviving medieval buildings, retains some elements of a previous manor building, perhaps the Metcalfes' earlier 'cottage or little better house' mentioned by Leland. Tree-ring analysis confirmed the likelihood of some building activity in this range toward the end of James Metcalfe's long lifetime (1389–1472), but the bulk of the medieval house is dated slightly later, around 1472–6. It is therefore not the work of James but rather his son Thomas (d 1504), an important local dignitary who went on to hold high office as Chancellor of the Duchy of Lancaster.

Thomas's manor house comprised the four-storey high-end tower, the three-storey low-end tower and the intervening, four-bay single-storey hall. The elaborate porch, accommodating an awkward re-entrant angle between the hall and the service range, provided the main entrance, while a more functional doorway served the northern end of the cross-passage which ran across the eastern end of the hall. The hall retains an unusual roof in which the three trusses combine both crown–posts and principal rafters. These show no sign of smoke blackening as there has always been a fireplace and flue; a lateral stack in the north wall appears on a plan of Nappa dated around 1790 and remains detectable as an irregularity in the internal plasterwork.

Adam Menuge, © English Heritage

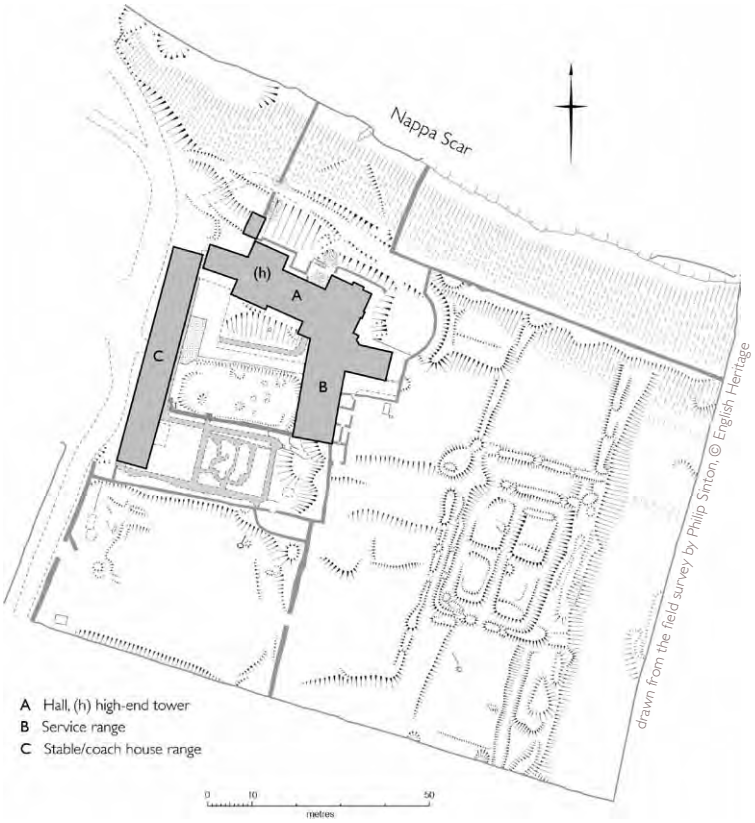
The hall roof has an unusual hybrid structure.

A third range, parallel to the hall, once closed the southern side of a courtyard shown on a map of 1759; on the evidence of some detached architectural fragments this too may have belonged to the late 15th century. There is little reason to doubt that the main approach to the manor was from the south, along a well-worn lane which shares the orientation of the medieval fields and passes alongside a flight of fishponds, a water-mill and other features of the contemporary manorial landscape. All of Nappa's large, decorative windows face in this direction, south across the dale, providing the occupants with extensive views and optimum light. The sole exception, largely destroyed by the insertion of an 18th-century frame, looked out from the east wall of the low-end tower, possibly over gardens laid out within the relict boundaries of medieval fields. The prominent earthworks of a small quartered garden are perhaps the final elaboration of this scheme, dating from the late 16th or early 17th century, when the fortunes of the Metcalfe family reached their peak.

From this point, the family's status and wealth were in decline. Nappa Hall deteriorated through the remainder of the 17th century, perhaps hastened by its division into two parts occupied separately by two brothers. By the end of the century the high-end tower had fallen into disuse and Nappa was referred to as 'the old ruinous house'. A number of features, including chimneypieces

Lucy Jessop, © English Heritage

The Victorian coach house and stable, incorporating both Georgian and medieval elements.



Nappa Hall's immediate setting, surveyed as part of the investigation.

and wainscoting, show significant investment in the low-end tower in the early 18th century, but more extensive works began only after Nappa Hall had passed out of the Metcalfes' hands and into those of their wealthy cousins, the Weddells of Newby Hall. William Weddell (d 1792) adapted Nappa as a hunting lodge in the late 18th century, adding a 'Gothick' stable and coach house range to close the western side of the courtyard, and reducing the southern range to a mere terraced walk. This process was taken further in the mid-19th century when the coach house and stables were substantially rebuilt. Roof timbers in this Victorian range appear to have been re-used from Weddell's stable range, and in turn from the southern range that preceded it, as they come from trees originally felled in the late 15th century.

Lucy Jessop, © English Heritage

The garden earthworks seen from the high-end tower roof.

As well as charting the fortunes of the Metcalfe family, Nappa Hall provides wider insights into the status of the gentry in late medieval society, and reflects a fashion for retained and re-invented medieval architecture among the Georgian and Victorian elite. English Heritage's recent research will help to ensure that plans to provide a future for Nappa will serve to protect the historic integrity of both the hall and its setting.

Dave Went MIfA FSA is a Senior Investigator and manager of the York-based Assessment Team (North). He joined English Heritage in 1993, working first for the Monuments Protection Programme and later for the Characterisation team before joining the Research Department in 2007. His particular interests are Roman archaeology, the early church and medieval landscapes. His survey of Whitley Castle Roman fort is published in the latest (2013) edition of Britannia.

FURTHER READING

Arnold, A and Howard, R 2013 *Nappa Hall, Askrigg, North Yorkshire, Tree Ring Analysis of Timbers* (Portsmouth: English Heritage). English Heritage Research Report Series, 60-2013.

Menuge, A and Went, D 2013 *Nappa Hall, Askrigg, North Yorkshire: an Investigation and Assessment of the Medieval Hall in its Immediate Setting* (Portsmouth: English Heritage). English Heritage Research Report Series, 44-2013.

National Heritage List for England (http://list.english-heritage.org.uk) no. 1157398: Nappa Hall, Grade II* listed building.

The Hat Industry of Luton and its buildings

Luton was once the most important centre of hat manufacture in southern England. A programme of research has increased our understanding of the industry and its buildings, resulting in the creation of a series of publications, a short film, and a body of knowledge which, it is hoped, will lead to the better maintenance of the town's historic character.

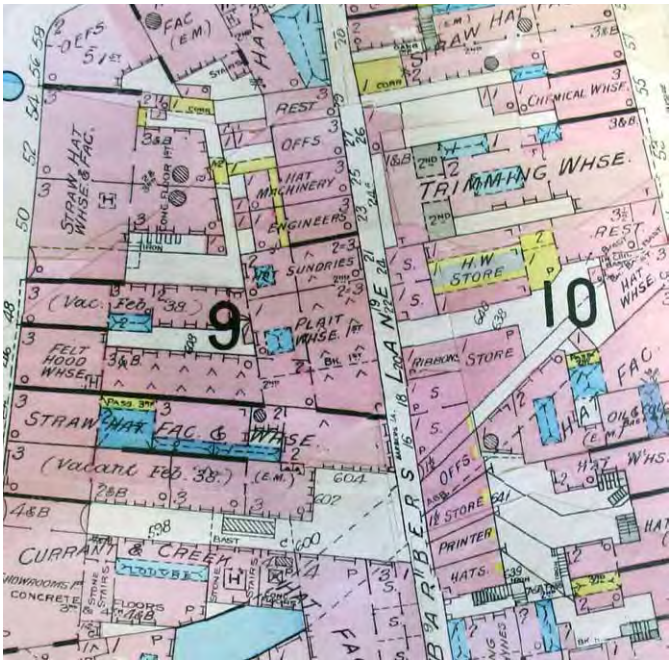
Luton contains a dense and varied concentration of late-19th and early 20th-century industrial, commercial and domestic buildings related to the production of hats. Both as physical fabric, and in terms of its significance to the local community, this legacy is of great importance. In spite of this, these buildings were until recently relatively poorly understood.

With Luton's historic character under real and pressing threat (and thus a priority for attention under English Heritage's National Heritage Protection Programme), we began work in 2009–10, with the aim of increasing our understanding of the significance of the buildings and their settings. We hope the information gathered will facilitate informed decisions which allow the historic environment to take its rightful place at the heart of regeneration plans for the town centre.

The project consisted of three stages. The first was the investigation of the Barford Brothers' dye and bleach works on North Street, which was founded in 1894 by Gilbert and Ernest Barford (Graham 2010). This business primarily dyed straw, felt and ribbons for the hat industry but later diversified into the manufacture of felt hoods and the blocking of hats into their desired form. The buildings underwent a series of major developments in the early 20th century to accommodate this changing business model and remain in use as a dye works today, preserving much of the early machinery (such as the blocking machines) and features of architectural interest.

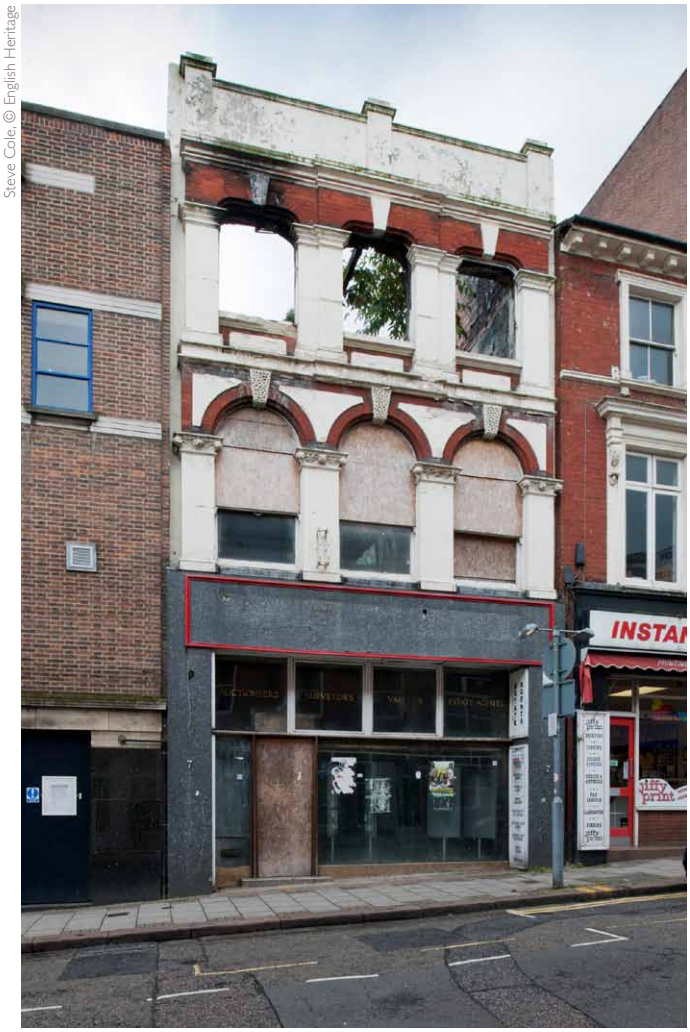
The second stage of the project involved a broader look at the hat industry and how it shaped one particular area of Luton town centre, resulting in the creation of a new historic area assessment for the Plaiters' Lea Conservation Area (Carmichael and McOmish 2011). This examines the development of plaiting and hatting, the processes involved in these industries, and their impact on both people and place. It outlines the historical development of Luton, sets this in its wider

The Hat Industry of Luton and its Buildings.



A Goad map of 1932 shows the density of factories in Luton.

Steve Cole, © English Heritage



A disused and neglected former hat factory.

Steve Cole, © English Heritage

A mid-nineteenth century semi-domestic hat factory in Dunstable.

context, appraises the early cartographic sources, and gives an account of the current character of the area. It includes commentaries on the forms and types of buildings surviving within the conservation area and statements of their significance and value. The setting of the conservation area is assessed in light of the proposed redevelopment of the town centre. The report concludes with a gazetteer of buildings within the conservation area, including significant structures on its periphery. Working with colleagues in other parts of English Heritage, we were also able to make a number of recommendations which we thought would benefit the town's maintenance of its historic character, and to share these with local stakeholders.

The third stage was the production of a new book in English Heritage's Informed Conservation series, *The Hat Industry of Luton and its Buildings* (Carmichael, McOmish and Grech 2013). This examines the straw plaiting and hatting industries in their wider regional context and explores the lives of those who worked in the industry during the 19th and early 20th centuries. It assesses the links between the surviving building stock and the history of the industry, making a case for the social and economic value inherent in the resulting historic environment.

THE FILM *MAD AS*

When the project was conceived this book was expected to be its ultimate product, alongside such protection-related outcomes as potential new designations and the possible amendment of conservation area boundaries. However, as a result of the project an alternative form of preservation has been achieved in the form of *Mad As*, a ten-minute film directed by Alun Bull, and filmed with his colleague James Davies.

An insight into a trade that is fast disappearing throughout the world, this short film explores the fascinating world of Boon & Lane Ltd, the last remaining hat-block makers of its type in the British Isles and one of only six globally. Established in Luton in 1963, Boon & Lane is a world-renowned company creating hat blocks (the shapes upon which hats are formed) for famous milliners, fashion houses, Hollywood and the British royal family.

Steve Cole, © English Heritage

A factory/warehouse building in the Plaiters' Lea Conservation Area.

The film follows the work of Steve Lane and Alan Davies as they transform blocks of African obeche wood and aluminium ingots into the beautiful sculptural forms which form the basis of many of the world's most famous hats. Having followed the manufacture of the blocks, the film shows how they are used by Luton-based hat manufacturer Philip Ian Wright at Walter Wright Ltd to create a custom-designed sinamay baseball cap. Mr Wright explains how the quality of the blocks produced by Boon & Lane differs from that of their often cheaper counterparts in the Far East and why their work is so highly regarded within the industry.

Under present regulations Boon & Lane is considered to be a dangerous work environment and Steve and Alan are thus unable to employ any staff. This means that their skills cannot be passed on to a new generation, making the long-term future of the business extremely uncertain. Recognising the rarity and fragility of this last remnant of the industry, Steve Cole, architectural photographer, was asked to record it for use in publication and for deposition in the English Heritage Archive. It was then suggested that photographers Alun Bull and James Davies make a short film recording the process for the benefit of future generations. The film (Bull 2013) was premiered in Luton at the launch of *The Hat Industry of Luton and its Buildings* on 3 December 2013; it is being streamed on the internet and promoted using social media.

Steve Cole, © English Heritage

A small number of hat manufacturers remain in Luton.

Alun Bull, © English Heritage

The opening scene from *Mad As*.

The team believe that telling stories using moving image and sound, as well as through traditional publications, is an increasingly vital way to engage with people, to encourage interest in disappearing buildings and processes, and to increase public understanding of England's rich cultural heritage. A wide range of media need to be used in this process. If our industrial heritage disappears through ignorance our urban architecture and landscapes will never be as interesting or informative again.

Katie Carmichael, Investigator, and Alun Bull, Higher Photographic Officer. Katie is an Investigator in English Heritage's Cambridge Assessment Team. The Hat Industry of Luton and Its Buildings is her first major publication. She is currently working with her colleague John Minnis on another book in the Informed Conservation series, examining the architectural history of Boston, Lincolnshire, and expected to be published in early 2015.

Steve Cole, © English Heritage

Still of a newly cast block, from *Mad As*.

FURTHER READING

Bull, A (dir), *Mad As*, available at: http://vimeo.com/77238364 and on the English Heritage YouTube channel, at: http://www.youtube.com/watch?v=TYkabHNTwYo

Carmichael, K and McOmish D 2011, *Plaiters' Lea Conservation Area, Luton: Historic Area Assessment* (Portsmouth: English Heritage). English Heritage Research Department Report Series, 69-2011, available at: http://services.english-heritage.org.uk/ResearchReportsPdfs/069_2011WEB.pdf

Carmichael, K, McOmish, D and Grech, D 2013 *The Hat Industry of Luton and its Buildings* (Swindon: English Heritage).

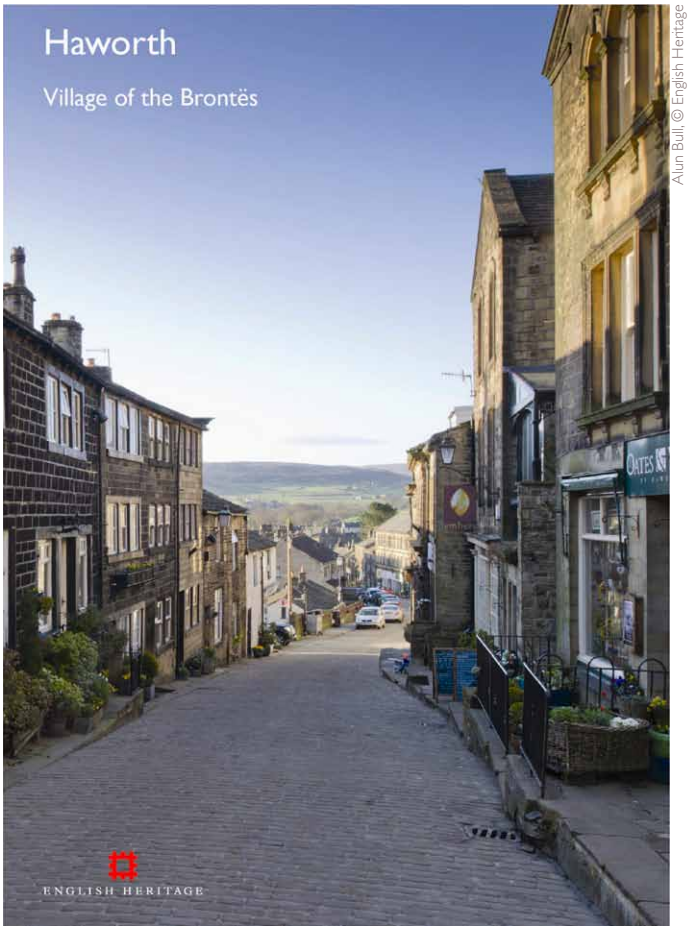
Graham, K 2010 *The Barford Brothers' Dye and Bleach Works, North Street, Luton: Historic Building Report* (Portsmouth: English Heritage). English Heritage Research Department Report Series, 93-2010, available at: http://services.english-heritage.org.uk/ResearchReportsPdfs/093_2010WEB.pdf

Haworth: a village at risk?

Interpretive broadsheet helps remove a Yorkshire conservation area from the Heritage at Risk Register.

The village of Haworth is situated beside the valley of the River Worth in the old West Riding of Yorkshire, about four miles to the south of the town of Keighley, and around ten from both Halifax and Bradford to the south and south east respectively. The village climbs the steep side of a hill beyond which lie lonely and desolate moors, stretching to the Pennine watershed. Haworth is best known as the home of the Brontë family, who lived at the Parsonage on Church Street for much of the 19th century. It was here that three sisters – Charlotte, Emily and Anne – wrote such famous novels as *Jane Eyre*, *Wuthering Heights* and *The Tenant of Wildfell Hall*. It is mainly for this reason that Haworth has been a tourist attraction for over a century and a half, even before the publication of Elizabeth Gaskell's biography of Charlotte Brontë in 1857 made the village internationally famous.

The earliest such visitors were fans of the Brontës' novels; they wished to catch a glimpse of Charlotte, who outlived her sisters and brother (she died in 1855). Later they were intrigued by Gaskell's portrayal of life in Haworth at the Parsonage, and desirous of meeting Patrick Brontë, the girls' father, who outlived all his children, dying in 1861. Literary pilgrims and interested tourists have been making the journey to the Brontë Parsonage in large numbers ever since; the house became the home of the Brontë Society (founded in 1893) in 1928.



Alun Bull, © English Heritage

The front of the English Heritage broadsheet *Haworth: Village of the Brontës*.

Today, however, the Brontë connection is not Haworth's only attraction. The village is also famous for the preserved Keighley & Worth Valley Railway, which runs from Keighley to Oxenhope and has a station serving Haworth. The line is perhaps best known for featuring, as does Haworth Parsonage, in the 1970 film of Edith Nesbitt's *The Railway Children*, and it attracts both fans of the film and steam railway enthusiasts to the village. In July 2014 participants in Stage 2 of the *Tour de France* will clatter up the stone setts of Haworth's Main Street, with the eyes of the world upon them and the village, en route from York to Sheffield.

Its famous associations aside, Haworth has an intrinsic picturesque charm and is rightly seen as a showcase for Yorkshire's heritage. At its heart is a conservation area, the first to be designated by Bradford Metropolitan District Council (in 1971), which contains 80 listed buildings and a significant number of other structures which contribute to the village's character. Built of local honey-coloured sandstone and gritstone, Haworth's diverse assortment of buildings and streets lend it a character that is at once chaotic and cohesive, and which is contextualised by the iconic backdrop of the wild moors made famous by *Wuthering Heights*.

In spite of all this, in 2010 English Heritage found itself with no choice but to place Haworth on the Heritage at Risk Register. Inappropriate, piecemeal alterations and repairs to windows and shopfronts, excessive street clutter and the slow decay of the former National School building (in which the Brontë sisters had once taught), all contributed to the significant erosion of local character. Haworth was classified as one of the top ten Heritage at Risk sites in Yorkshire.

English Heritage initially responded by funding exemplary repairs to a few buildings on Main Street and to the former National School, as well as to the roof of the village church. But the organisation became aware of

Alun Bull, © English Heritage

The Parsonage at Haworth; home of the Brontë family.

Alun Bull, © English Heritage

Haworth Main Street and the informal 'square' at the top of the hill.

Alun Bull, © English Heritage

The former National School building on Church Street.

Alun Bull, © English Heritage

The graveyard at Haworth church.

Alun Bull, © English Heritage

Brontë family memorial, Haworth church.

Alun Bull, © English Heritage

Shops on Haworth Main Street.

a need to raise greater awareness of the significance of historic Haworth beyond the environs of the Parsonage, to articulate the strength of the connection between the Brontë family with the wider village, and to promote co-operative action by Haworth's various stakeholder organisations. The creation of a heritage-based interpretive broadsheet, similar to those produced in Yorkshire for Helmsley and Conisbrough, and published in partnership with Haworth's key decision makers and community groups, was thought to be the best way to do this.

The broadsheet project was managed by English Heritage, and Colum Giles, an independent architectural historian and writer, was commissioned to undertake research and produce the text. The finished work is an illustrated narrative account of life in Haworth and its buildings, drawn from new research, in the form of an historic area assessment (a methodology developed by English Heritage) of the Haworth landscape.

Although some substantial and important 17th-century houses survive in the village, Haworth is largely a product of the 19th century. Life at this time must have been lived against a backdrop of constant building activity with new houses nearly always in the course of construction. Haworth had its commercial side, with banks, inns and a large number of shops being constructed, but was also an industrial settlement: a number of textile mills, in various states of completeness and survival, still punctuate the local skyline. In their heyday these mostly produced worsted yarn and cloth, and a significant proportion of Haworth's population were employed in various branches of the textile trades, either in these mills or as wool combers, working from home. It was also an infamously unhealthy place, its sanitary conditions considered as bad as those in the worst slums of London. In the middle of the 19th century 41% of children died before they were six years old and for those who survived infancy, life expectancy was around 44 years; the Brontë sisters all died before they were 40. Death was therefore a major presence in the village, as the overcrowded church graveyard and well-stocked chapel cemeteries still testify. It is these various elements of Haworth's heritage that the broadsheet was designed to amplify.

Haworth: Village of the Brontës was produced by English Heritage's Assessment Team (North) during the first half of 2013. The narrative account is supplemented by a large new walking map of the village, showing the extent of the conservation area and identifying 27 key historic buildings, each discussed in an associated illustrated gazetteer. An English Heritage celebration event was held in Haworth on 8 August 2013 to mark the completion of conservation works and the launch of the broadsheet. 5,000 copies were distributed free to members of the public through key local outlets, societies and groups. The popularity of the broadsheet is such that a second print run, also of 5,000, has already been produced.

Haworth Conservation Area was removed from the Heritage at Risk Register for 2013 –14, demonstrating the success of the campaign of restoration and awareness raising, and the value of historic environment research in the context of heritage at risk.

Simon Taylor FSA is a Senior Investigator and Lead Professional (Architecture) with English Heritage's Heritage Protection Department. He joined the Royal Commission on the Historical Monuments of England (now part of English Heritage) in 1994, and has been an architectural investigator since 1997. He is a fellow of the Society of Antiquarians of London and his interests lie in vernacular buildings and in Victorian and Edwardian urbanisation and architecture.

FURTHER READING

C Giles 2013 *Haworth: Village of the Brontës* (York: English Heritage). Available from Haworth Visitor Information Centre (01535 642329) or from laura.patrickson@english-heritage.org.uk

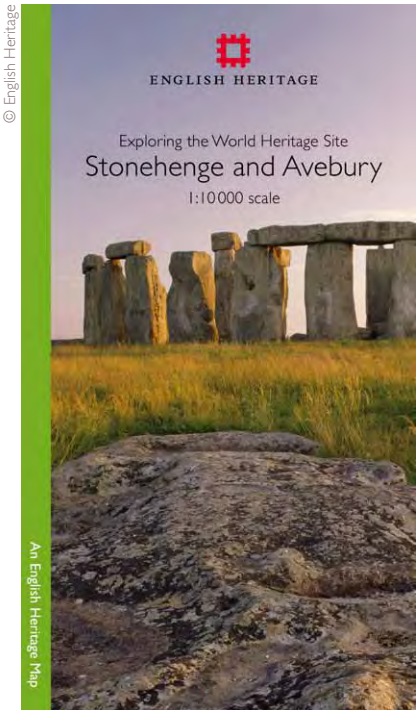
New Stonehenge map: a step into (pre)history

A new visitor's map, drawing together the latest research, will improve access to and understanding of the Stonehenge and Avebury World Heritage Site landscape.

The new visitor's map, *Exploring the World Heritage Site: Stonehenge & Avebury,* is designed to encourage visitors out into the wider landscape around Stonehenge and Avebury, increasing the use of permissive footpaths and open access areas, and allowing people to develop an understanding of the wider landscape while exploring such monuments as the numerous round barrows. It is hoped it will also alleviate pressure on the stone circles. Uniquely, it brings together both halves of the World Heritage Site on a double-sided large scale (1:10,000) map, allowing a hugely improved understanding of what archaeology can be seen in the landscape and how to get to it.

The map combines data from a number of sources, all of which needed to be verified and refined for the final product. Even the Ordnance Survey's Vector Map Local, used as the main map background, required the

Walkers survey the Stonehenge landscape from the Cursus barrow group.



© English Heritage

Cover of the new map.

insertion of the new Stonehenge visitor centre and roundabout at Airman's Corner as well as a general tidy-up. Rights of Way information, as supplied by Wiltshire Council, was originally digitised at too small a scale to be accurate on the map and has been revised to clearly reflect current routes; for example the byways at Larkhill which have been re-routed around potentially dangerous parts of the military training area. The National Trust's permissive open access area around Stonehenge also needed tweaking to show its imminent expansion: new gates are being put in over the forthcoming winter. National Cycle Network routes, bus stops, information points and nature reserves are all marked, although a decision was made not to include pubs.


James O. Davies, © English Heritage

Mapping of the archaeology is drawn from the National Mapping Programme projects for the area, which detail archaeology visible on aerial photographs and in lidar data, and field survey information acquired through English Heritage's Stonehenge World Heritage Site Landscape Project. Sites like the early Neolithic causewayed enclosures of Robin Hood's Ball and Windmill Hill had to be redrawn for clarity but it was important that they retained their spatial and archaeological integrity. The map differentiates between archaeology visible on the surface (as earthworks, stones and buildings), and sites that are invisible but known from cropmarks and geophysical surveys, categorizing them under the five periods used in the new visitor centre. It includes such new discoveries as the West Amesbury henge, as well as more recent features such as post-medieval milestones, memorials to early aviators and the concrete markers placed by the new Air Ministry to define the extent of Stonehenge Aerodrome at the end of the First World War. Panels explain the significance of key monuments and include reconstruction drawings and new photography.

The result is a high-quality product that contains a huge amount of information: the most up-to-date and comprehensive map available of the whole World Heritage Site.

Sharon Soutar, Technical Survey & Graphics Officer, Imaging & Visualisation, English Heritage. A landscape archaeologist specialising in heritage geomatics, Sharon has spent over 11 years working as part of various teams that currently make up the Investigation and Analysis division of English Heritage.

FURTHER READING

Bowden M, Soutar S, Field D and Barber M, with Linford N, Linford P & Payne A 2014 *'A Striking Picture of Ancient Times': Analysing the Stonehenge World Heritage Site Landscape* (Swindon: English Heritage).

English Heritage/the National Trust 2013 *Exploring the World Heritage Site: Stonehenge & Avebury* (Swindon: English Heritage).

Blackpool, 'the great roaring spangled beast'

Blackpool's much-needed regeneration required an understanding of its historic character and development to be achieved. English Heritage research has delivered this and the resultant examination of the town and its buildings is to be outlined in a major new book.

In 1919 Thomas Luke celebrated Blackpool as 'one of the wonders of the world'; fifteen years later J B Priestley proclaimed it 'the great roaring spangled beast' (Luke 1919, 273; Priestley 1934, 263). Both authors were referring to the scale, colour and brilliant lights of Britain's most popular resort, which provided its visitors with entertainment and accommodation on an industrial scale.

Holidaymakers could enjoy the elegant interiors of the Winter Gardens, breathtaking views from the Blackpool Tower and shows in the resort's numerous theatres. They could also promenade along Blackpool's three piers and be thrilled by the increasingly exhilarating rides at the Pleasure Beach. At its peak Blackpool could boast around ten million visitors per year and during the 1930s its entertainment venues could seat more than 60,000 people each night.

Blackpool's Seaside Heritage, to be published by English Heritage in March 2014, is the first detailed examination of the town's architectural history as a settlement catering for visitors. Blackpool, it reveals, owes its existence in its modern form to an interest in bathing in the sea, first recorded there in the 1750s. By the late 1780s a handful of the village's largest houses had been built, in order to accommodate wealthy visitors. In the

Aerofilms Collection, © English Heritage

Blackpool beach after World War II.

The Casino at the Pleasure Beach.

early 19th century the first smaller purpose-built facilities were established, catering for the resort's middle-class market, and reports begin to appear of significant numbers of working people from manufacturing towns also travelling there, in carts or on foot, to enjoy the settlement's natural charms.

Blackpool remained a small settlement for most of the 19th century. In 1801 there were fewer than 500 people in the village and in 1851 this had risen just over five-fold. The arrival of the railway in 1846 and the creation of a second line a few years later were thus essential developments, eventually helping transport millions of visitors to Blackpool each year. During the half century that following the opening of the first pier in 1863, the town's facilities increased rapidly. Two further piers, the Winter Gardens, the Grand Theatre, Blackpool Tower and the earliest surviving rides at Blackpool Pleasure Beach were all built before the outbreak of World War I. Huge areas of housing were erected for the town's rapidly-growing population, which surpassed 50,000 by the early 20th century. On the seafront and in distinctive areas near the railway stations, much of the housing stock served as lodgings and boarding houses. Despite the presence of large numbers of working class tourists in the heart of the resort during the summer months, Blackpool still catered for a significant middle-class market at other times of the year and in expanding residential areas, such as North Shore.

During the 20th century Blackpool remained a popular destination, but changes to society and technology would have an impact on it. Railways had allowed millions to enjoy holidays there and helped to shape the town, but increasingly buses and cars replaced the train as the main means of reaching the resort. Electricity brought the illuminations, colourful rides at the Pleasure Beach, cinemas and the town's much-loved trams. During the inter-war years Blackpool Corporation undertook substantial investment, recognising that the Victorian

Steve Cole, © English Heritage

Charnley Road bed and breakfasts.

resort needed a fresh look and modern facilities if it was to remain pre-eminent in its market. A new lido, an indoor swimming pool, tram stations and even a multi-storey car park were built in a streamlined Moderne style, providing the up-to-date amenities increasingly expected by prosperous tourists. After World War II Blackpool remained Britain's busiest resort, but a growing number of people who had been part of its traditional market could afford holidays abroad, preferred new types of leisure activity, or were attracted by other British destinations.

Aerofilms Collection, © English Heritage

The Central Station site before its closure in 1964.

By the end of the 20th century Blackpool was perceived by some as old-fashioned, a negative image that may explain a decrease in visitor numbers, though the resort remained attractive to millions. The town's declining population suffered from significant social problems and its building stock was in a poor condition, a problem exacerbated by the contraction in the quantity of holiday accommodation required. Nevertheless there appear to be some reasons for optimism. Since 1991 the town's population has risen by about 4,000 and visitor numbers appear to be rising, with 13 million people apparently coming to the town in 2010.

In 2003 Blackpool published a masterplan, containing proposals to regenerate the town's distinctive neighbourhoods, its town centre and the seafront. Major investment has followed, transforming the arrival experience for motorists leaving the motorway, and creating new sea defences and a modern tram system (though the unique historic trams still run as well). New public realm has been created in the town centre and on

© English Heritage

The North Pier in the late 19th century.

the seafront, including the Comedy Carpet and *Dune Grass*, four 30m-high blades that sway in the wind. Work is well advanced on the Talbot Gateway development, which will create new homes and a central business district near Blackpool North Station. Not all parts of the masterplan have been delivered; the former Central Station site was to be the location of a new regional casino with accompanying hotels, but in 2007 the Government chose Manchester rather than Blackpool as the site for this.

In April 2006 a Townscape Heritage Initiative scheme was launched, with £2.3m of public funding, to stimulate private investment in the town centre. During the

Steve Cole, © English Heritage

St John's Church and new public realm.

Steve Cole, © English Heritage

The Big One rollercoaster at the Pleasure Beach.

Steve Cole, © English Heritage

The regenerated seafront today, viewed from the south.

subsequent six years many buildings have been refurbished. The Winter Gardens and Blackpool Tower were bought by the local authority in 2010 and ambitious restoration programmes for both have begun to revive them. English Heritage and Blackpool Borough Council have funded the creation of conservation management plans for both sites, outlining how future development can be achieved while maintaining the historic character of these important listed structures.

Blackpool's colourful and varied heritage is playing a significant role in the regeneration of the town. Relatively few of Blackpool's buildings are eligible for designation, the town having largely developed after 1840 and its buildings having faced both the ravages or a seafront location and continuous adaption by their owners. This does not mean that Blackpool does not have a rich seaside heritage. To identify and document the key historic areas of the town, English Heritage helped to fund six historic townscape characterisation studies. These were carried out for Blackpool Borough Council by Architectural History Practice, a process that has led to the best examples being considered for a new local list. The council's approach to regeneration, focused on Blackpool's distinctive neighbourhoods, could provide a framework for the creation of new conservation areas in the future, helping to improve the town's built environment and enhance its special character. *Blackpool's Seaside Heritage* helps to explain how the town as a whole developed and provides an overview of its distinctive and varied architecture, buildings that have not previously been appreciated or understood. Blackpool can rightly be proud of its history of entertaining and catering for millions of visitors and English Heritage's new book recognises and celebrates this unique heritage.

Allan Brodie and Matthew Whitfield are investigators in English Heritage's Assessment Teams. Allan has written a number of books on England's seaside resorts and Matthew is an expert on inter-war architecture.

FURTHER READING

Brodie, A and Whitfield, M *Blackpool's Seaside Heritage* (Swindon: English Heritage), will be published in March 2014.

Luke, T D 1919 *Spas and Health Resorts of the British Isles* (London: A & C Black).

Priestley, J B 1934 *English Journey* (London: William Heinemann).

James O. Davies, © English Heritage

The Tower Ballroom.

English Heritage Publishing

Varied, rigorously researched, authoritative and always generously illustrated the English Heritage publishing programme reflects the aims and ethos of the organisation. To find out more about all of our titles go to http://publishing.english-heritage.org.uk and view our 2014 catalogue.

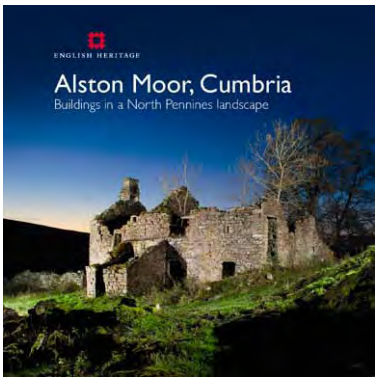
ALSTON MOOR

Buildings in a North Pennines landscape

Lucy Jessop and Matthew Whitfield with Andrew Davison

Part of the acclaimed Informed Conservation series this book is a synthesis of recent English Heritage research on the vernacular buildings of the parish of Alston Moor, Cumbria. The parish's wild upland landscape provides a conditioning influence on a distinctive tradition of vernacular building types, ranging from the bastle to its later 18th- and 19th-century derivatives and 'mine shops' providing lodgings for miners close to their place of work.

The book explores how houses of various types combine with a rich legacy of public and industrial buildings to create places of distinctive character. It takes a whole-landscape view of the area, relating its buildings and settlements to the wider patterns of landscape evolution resulting from agricultural and industrial activity and the development of communications.



£14.99 : July 2013 : 978-1-84802-117-4 : Paperback 148pp : 210x210mm : 115 illustrations : **Informed Conservation**

http://www.english-heritage.org.uk/publications/alston-moor-cumbria/

THE HAT INDUSTRY OF LUTON AND ITS BUILDINGS

Katie Carmichael, David McOmish and David Grech

This book is an introduction and guide to Luton's hatting industry and to the distinctive and varied character of its buildings. At its peak in the 1930s, the region was producing as many as 70 million hats in a single year; however, it entered a rapid decline following the Second World War from which it never recovered. This has left Luton, Dunstable and a number of other local towns with a challenging inheritance of neglected and decaying fragments of a once vital industry.

The historic links between the surviving building stock and the hatting industry are assessed and the book highlights the significance of the surviving fabric and the potential of the historic environment within future conservation and regeneration plans.

£9.99 : December 2013 : 978-1-84802-119-8 : Paperback 96pp : 210x210mm : 100 illustrations : **Informed Conservation**

http://www.english-heritage.org.uk/publications/hat-industry-luton-buildings/

BLACKPOOL'S SEASIDE HERITAGE

Allan Brodie and Matthew Whitfield

Blackpool is Britain's favourite seaside resort. Each year millions of visitors come to experience its attractions and generations of holidaymakers have stayed in its hotels, lodging houses and bed and breakfasts. Two centuries of tourism have left behind a rich heritage, but Blackpool has also inherited a legacy of social and economic problems, as well as the need for comprehensive new sea defences to protect the heart of the town. In recent years this has led to the transformation of its seafront and to regeneration programmes to try to improve the town, for its visitors and residents.

This book celebrates Blackpool's rich heritage and examines how its colourful past is playing a key part in guaranteeing that it has a bright future.

£14.99 : March 2014 : 978-1-84802-110-5 : Paperback 160pp : 210x210mm : 116 illustrations : **Informed Conservation**

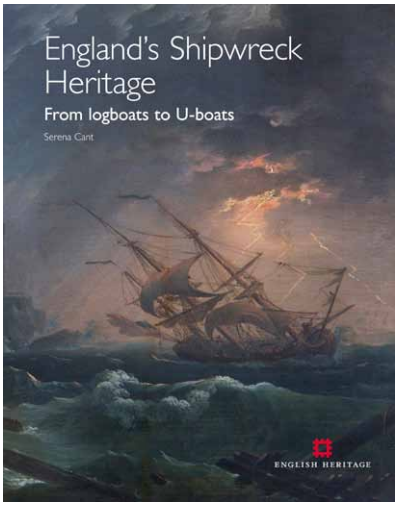
ENGLAND'S SHIPWRECK HERITAGE

From logboats to U-boats

Serena Cant

This book examines a variety of wrecks from logboats, Roman galleys and medieval cogs to East Indiamen, grand ocean liners, fishing boats and warships – all are woven into the history of shipwrecks along the coastline of England and in her territorial waters.

Serena Cant explores the type of evidence we have for shipwrecks and their causes, including the often devastating effects of the the natural environment and human-led disaster. Ships at war; global trade and the movement of people – such as passengers, convict transport and the slave trade – are also investigated. Highly illustrated and based on extensive new research this is a fascinating look at what is an integral part of the marine landscape.



£50.00 : August 2013 : 978-1-84802-044-3 : Hardback 320pp : 276x219mm : **300 illustrations**

http://www.english-heritage.org.uk/publications/englands-shipwreck-heritage/

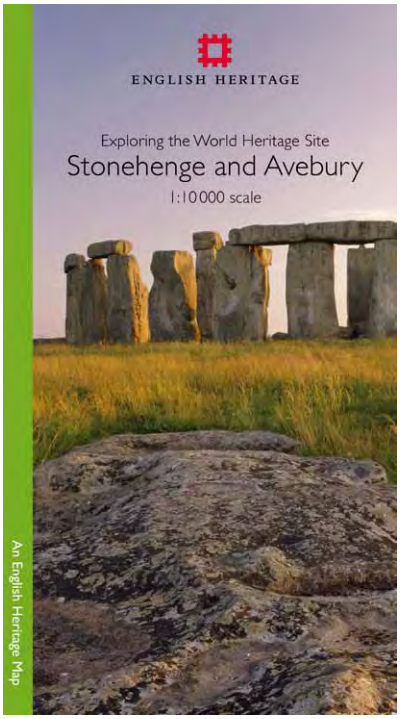
STONEHENGE AND AVEBURY

Exploring the World Heritage Site

Map 1:10000 scale

The Stonehenge and Avebury World Heritage Site is internationally important for its outstanding prehistoric monuments. Stonehenge is the most architecturally sophisticated prehistoric stone circle in the world, while Avebury is the largest. Around them lie numerous other monuments and sites, which demonstrate over 2,000 years of continuous use. Together they form a unique prehistoric landscape.

This map is ideal for walkers and others wishing to explore the fascinating landscape of the two areas of the World Heritage Site. The map uses an Ordnance Survey 1:10,000 base and draws upon information from the English Heritage Archive and recent archaeological investigations. With Stonehenge on one side and Avebury on the other, the map shows and describes both visible and hidden remains, with information about where you can find out more.



£9.99 : December 2013 : 978-1-84802-126-6 : Map : 240x133mm (folded) : **English Heritage Maps**

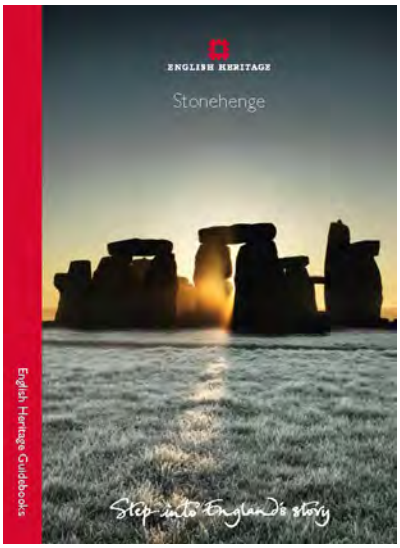
http://www.english-heritage.org.uk/publications/stonehenge-avebury-map/

And to complement the map of Stonehenge and Avebury we have published a new edition of our Guide to Stonehenge:

STONEHENGE

Julian Richards

This third edition of the Red Guide to Stonehenge contains a tour of the Stonehenge Landscape, a history of the site, numerous illustrations and specially commissioned photography.



£4.99 : December 2013 : 978-1-84802-240-9 : Paperback 48pp : 285x210mm : **English Heritage Guidebook**

http://www.english-heritage.org.uk/publications/stonehenge/

New research publications from English Heritage May 2013 - October 2013

Ainsworth, S, Oswald, A, and Went, D, 2013. 'Remotely acquired, not remotely sensed: using lidar as a field survey tool', inR. Opitz and DC Cowley (eds) Interpreting Archaeological Topography: Airborne Laser Scanning, 3D Data and Ground Observation, 206-222, Oxford: Oxbow Books.

Bayliss, A, 2013 Radiocarbon dating of hollow 2, in *Upper Palaeolithic sites in the lower courses of the rivers Colne and Wey: excavations at Church Lammas and Wey Manor Farm* (P Jones), SpoliHeap Productions, 69-70

Bayliss, A, Bronk Ramsey, C, Cook, G, McCormac, G, Otlet, R, and Walker, J, 2013 *Radiocarbon Dates: from samples funded by English Heritage between 1988 and 1993*, Swindon (English Heritage)

Bayliss, A, and O'Sullivan, M, 2013 Interpreting chronologies for the Mound of the Hostages, Tara and its contemporary contexts in Neolithic and Bronze Age Ireland, in Tara—from the Past to the Future. Towards a new research agenda. (eds M O'Sullivan, C Scarre, and M Doyle), 26–104. Dublin (Wordwell)

Bayliss, A, and Grogan, E, 2013 Chronologies for Tara and comparable Royal Sites of the Irish Iron Age, in Tara—from the Past to the Future. Towards a new research agenda. (eds M O'Sullivan, C Scarre, and M Doyle), 105–44. Dublin (Wordwell)

Bayliss, A, Hines, J, Høilund Nielsen, K, McCormac, F G, and Scull, C, 2013 *Anglo-Saxon Graves and Grave Goods of the Sixth and Seventh Centuries AD: A Chronological Framework*, Society of Medieval Archaeology Monograph, 33, London (Maney)

Bayliss, A, Marshall, P D, Meadows, J, Bronk Ramsey, C, Cook G, and van der Plicht, H, 2012 Radiocarbon dating (p180–187), in S Ripper and M Beamish Bogs, bodies and burnt mounds: visits to the Soar wetlands in the Neolithic and Bronze Age, *Proc Preh Soc* 78, 173–206

Bayliss, A, and O'Sullivan, M, 2013 Interpreting chronologies for the Mound of the Hostages, Tara and its contemporary contexts in Neolithic and Bronze Age Ireland, in *Tara—from the Past to the Future. Towards a new research agenda.* (eds M O'Sullivan, C Scarre, and M Doyle), 26–104. Dublin (Wordwell)

Bayliss, A, and Grogan, E, 2013 Chronologies for Tara and comparable Royal Sites of the Irish Iron Age, in *Tara—from the Past to the Future. Towards a new research agenda*. (eds M O'Sullivan, , C Scarre, and M Doyle), 105–44. Dublin (Wordwell)

Brightman, J, Bronk Ramsey, C, Cook, G, Marshall, P, Meadows, J, and Waddington, C, 2012 Radiocarbon dates (p. 193–203), in C Waddington Excavations at Fin Cop: An Iron Age Hillfort in Conflict, *Archaeol J*, 169, 159–236

Beavan N, Mays, S. 'The Human Skeletons'. *in* Hines, A Bayliss, J Hines, K Høilund Nielsen, F G McCormac, and C Scull *Anglo-Saxon Graves and Grave Goods of the 6th and 7th Centuries AD: A Chronological Framework* (Society for Medieval Archaeology Monograph 33). London: Society for Medieval Archaeology. (London, 2013) pp101-131

Bowden, M and Soutar, S, 'Surveying the Stonehenge landscape', English Heritage *Research News* 19, (2013), pp 6-9

Brock, F, Wood, R, Higham, T F G, Ditchfield, P, Bayliss, A, and Bronk Ramsey, C, 2012 Reliability of nitrogen content (%N) and carbon:nitrogen atomic ratios (C:N) as indicators of collagen preservation suitable for radiocarbon dating, *Radiocarbon*, 54, 879–86

Brodie, A, 2012, 'The Garrison's Defences on St Mary's in the Isles of Scilly in the 17th and 18th Centuries', *English Heritage Historical Review* 7, 37-65

Brodie, A, 2013, 'The Brown Family Adventure – seaside holidays in Kent in the mid-19th century', *Journal of Tourism History* 5.1, 1-24

Brodie, A, 2013, 'Scarborough in the 1730s - Spa, Sea and Sex' in John K. Walton (ed) *Mineral Springs Resorts in Global Perspective: Spa Histories* London: Routledge, 15-43

Bowden, MCB and Smith, NA 2013 '"A very fair field indeed…": an archaeology of the common lands of English towns' *in* ID Rotherham (ed) *Cultural Severance and the Environment: the ending of traditional and customary practice on commons and landscapes managed in common* Springer: London. 217-228.

Brightman, J, Bronk Ramsey, C, Cook, G, Marshall, P, Meadows, J, and Waddington, C. Radiocarbon dates (p. 193-203), in C Waddington Excavations at Fin Cop: An Iron Age Hillfort in Conflict, *Archaeol J* 169, *(London, 2012)*, pp159-236.

Brindle, S and Wilmott, T 2013 PORTICO entry on *Whitby Abbey* http://www.english-heritage.org.uk/daysout/properties/whitby-abbey/history-and-research/

Brunning, R, with Bronk Ramsey, C, Cameron, N, Cook, G, Davies, P, Gales, R, Hamilton, D W, Hogan, D, Jones, J, Jones, M, Kenward, H, Kreiser, A, Locatelli, C, Marshall, P, Straker, V, Tinsley, H, Tyers, C, and Tyers, I, 2013 *Somerset's Peatland Archaeology: managing and investigating a fragile resource*, Oxbow

Brodie, A, 2013. 'The Brown Family Adventure – seaside holidays in Kent in the mid-19th century.' Journal of Tourism History, 5:1, 2013, 1-24

Cook, G T, Higham, T F G, Naysmith, P, Brock, F, Freeman, SP H T, and Bayliss, A, 2012 Assessment of infinite-age bones from the Upper Thames Valley, UK, as ^{14}C background standards, *Radiocarbon*, 54, 845–54

Carpenter E and Winton H, *A different perspective? aerial archaeology, sheep and the devil on the downs* The Downsman, The Magazine of the South Downs Society Issue 182 Summer (Final of four articles published as part of EH NMP work on the Downs) (Sixpenny Handley Parish Council, 2013).

Chappell Helen F, Martin T Dove, Kostya Trachenko, Ruth E A McKnight, Michael, A Carpenter and Simon A T Redfern, 2013. Structural changes in zirconolite under alpha- decay, *J. Phys.: Condens. Matter*, **25**, 055401.

Cocroft, W D 2013 'The archaeology of military communications' *Industrial Archaeology Review* 35 (1), 65-79.

Cook, G T, Higham, T F G, Naysmith, P, Brock, F, Freeman, SP H T, and Bayliss, A, 2012 Assessment of infinite-age bones from the Upper Thames Valley, UK, as ^{14}C background standards, *Radiocarbon*, 54, 845–54

Crosby, V and Hembrey, N 2013 'An evaluation in the fields south of Silbury Hill in 2010: Romano-British settlement, later alluviation and water meadows'. Wiltshire Archaeological and Natural History Magazine 106, 101-166 (with contributions by P Baker, B Bishop, D H Brown, G Campbell, M Canti, P Davies, K Marter Brown, S Mays, S Moorhead, M Phelps, R Pelling, H M Roberts and J Timby)

Cullen, K, Bayliss, A, Bronk Ramsey, C, Cook, G, McCormac, G, Otlet, R, and Walker, J, *Radiocarbon dates from samples funded by English Heritage between 1988 and 1993*, (English Heritage, Swindon, 2013)

Dix, P, Kerr, B and Prentice, J. 'The archaeology of the garden' in Keay, A and Watkins, J (eds), *The Elizabethan Garden at Kenilworth Castle, (* English Heritage, 2013) pp65-74

Doonan, R C P and Dungworth, D. 'Experimental archaeometallurgy in perspective', *in* Dungworth, D and R C P Doonan R C P (eds) *Accidental and Experimental Archaeometallurgy*. (London: Historical Metallurgy Society, 2013), pp1–10

Dungworth, D and Brain, C 2013 'Seventeenth- and eighteenth-century English lead glass', *in* Janssens, K (ed) *Modern Methods for Analysing Archaeological and Historical Glass*. Chichester: Wiley, 573–582

Dungworth, D. 'Experimental archaeometallurgy: hypothesis testing, happy accidents and theatrical performances', *in* D Dungworth and R C P Doonan (eds) *Accidental and Experimental Archaeometallurgy*. (London: Historical Metallurgy Society, 2013), pp11–16

Dungworth, D. 'An experimental study of some early copper smithing techniques', *in* D Dungworth and R C P Doonan (eds) *Accidental and Experimental Archaeometallurgy*. (London: Historical Metallurgy Society, 2013), pp149–152

Dungworth, D and Doonan, R C P (eds) *Accidental and Experimental Archaeometallurgy*. (London: Historical Metallurgy Society, 2013)

Greenwood, D, Batt, C, Meadows, J, and Roberts, I, 2013 Dating the Kiln, in A Stamford Ware Pottery Kiln in Pontefract: A Geographical Enigma and a Dating Dilemma (I Roberts), Medieval Archaeol, 57, 120–1

Hammon, A. 'Animal Bone' (217-8), *in* Waddington, C. 'Excavations at Fin Cop, Derbyshire: An Iron Age Hillfort in Conflict?'. *The Archaeology Journal* 169 (London, (London: Historical Metallurgy Society, 2013) pp159-236.

Harwood, E.'Leslie Martin and the St Cross Building, Oxford', in Elain Harwood, Alan Powers and Otto Saumarez Smith, eds., *Twentieth Century Architecture, no.11*, 'Oxford and Cambridge', December 2013

Hill, N 2013. 'Hall and chambers: Oakham Castle reconsidered', *Antiquaries J* 93, 163-216.

Hines, J and Bayliss. A (eds), *Anglo-Saxon Graves and Grave Goods of the 6th and 7th Centuries AD: A Chronological Framework* (Society for Medieval Archaeology Monograph 33, 2013)

Hooley, D 2013, Review of P Dudley 2011 '*Goon, Hal, Cliff and Croft: The Archaeology and Landscape History of West Cornwall's Rough Ground*' and G Kirkham 2011 '*Managing the Historic Environment on West Cornwall's Rough Ground*', *Landscape Research*, 38:5, 686-689

Horsfall-Turner, O, 2013. 'Ruin and reparation: medieval parish churches in seventeenth- and early eighteenth-century Ossory', in R. Stalley (ed), Irish Gothic Architecture: construction, decay and reinvention, Wordwell, 2013

Huntley, J.P. 2013 The world is a bundle of hay: investigating land management for animal fodder around Vindolanda, based on plant remains. Pp 33-51 in: *Breaking down boundaries: Hadrian's Wall in the 21 century* (Eds Rob Collins and Matthew Symonds). Journal of Roman Archaeology supplementary series number 93

Jessop, L, Whitfield, M with Davison, A *'Alston Moor, Cumbria; buildings in a North Pennines landscape'* (EH Informed Conservation book, 2013) 160pp, 115 illustrations.

Johnston, B, Marshall, P D, and Waddington, C, (2013) *Archaeological Excavations at Curzon Lodge, Longcliffe, Derbyshire*, Archaeology Research Papers 8, Archaeological Research Services Ltd

Karsten, A Graham, K 'Leather drying Trial: A comparative study to evaluate different treatment and drying techniques for wet, archaeological leather, *Research Report (70-2011)*, (Portsmouth, 2013)

Lake, J. 'The Survival of Seating in Cornwall's Methodist and Nonconformist Chapels', in *Sitting in Chapel*, (Wetherby: The Chapels Society, 2013).

Last, J 2013. The end of the longhouse. In D. Hofmann and J. Smyth (eds.) *Tracking the Neolithic House in Europe: Sedentism, Architecture and Practice*.

Last, J, Brown, E, Bridgland, D and Harding, P 2013. Quaternary geoconservation and Palaeolithic heritage protection in the 21st century: developing a collaborative approach. *Proceedings of the Geologists' Association*.

Leary, J, Canti, M, Field, D, Fowler, P, Marshall, P, and Campbell, G, 2013 The Marlborough Mound, Wiltshire. A Further Neolithic Monumental Mound by the River Kennet, *Proceedings of the Prehistoric Society* doi: 10.1017/ppr.2013.6

Loader, R, Marshall, P D, Cook, G T, Bronk Ramsey, C, and McCormac, F G, 2012 Radiocarbon results in *Coastal Archaeology in a Dynamic Environment: A Solent Case Study* (eds D J Tomlin, R D Loader and R G Scaife), BAR Brit Ser 568, 502–516

Marshall, P, Best, J, Hamilton, D, and Cook, G, 2012 Radiocarbon dating (pp 219–224) in J Best and A Woodward A late Bronze Age pottery production site and settlement at Foster's Field, Tinney's Lane, Sherborne, *Proceeding of the Prehistoric Society* 78, 207–261

Marshall P D, Prior C, and C Waddington 2012 Radiocarbon dating (p29–34) in J Brightman and C Waddington, Archaeological excavations at Mercia Marina, Willington, *Derbyshire Archaeological Journal* 132, 1–80

Marshall, P D, Cook, G, and Prior, C, 2013 Appendix 1: Bayesian Analysis in A O'Connell *Harvesting the stars: A pagan temple at Lismullin, Co. Meath*, NRA Scheme Monog 11, 141–45

Marshall, P, Bayliss, A, McCormac F G, and Bronk Ramsey, C, 2012 Radiocarbon dating in R Cowie, L Blackmore, A Davis, J Keily, and K Rielly *Lundenwic: excavations in Middle Saxon London, 1987–2000*, London, MoLAS Monograph Series 63, 307–312

Marshall, P, 2013 Radiocarbon dates in J Stevenson *Living by the Sword: The archaeology of Brisley Farm, Ashford, Kent*, Spoilheap Mono Ser 6, 374–5

Mays, S 2013 'The cremated human bone from the 2010 excavations', *in* Cunliffe, B *The Roman Villa at Brading, Isle of Wight: the Excavations of 2008-10* Oxford: Oxford University School of Archaeology: Monograph 77, 229-31

New research publications from English Heritage (continued)

Mays, S, Elders, J, Humphrey, L, White, W, and Marshall, P, 2013 *Science and the Dead: A Guideline for the Destructive Sampling of Archaeological Human Remains for Scientific Analysis*, The Advisory Panel on Archaeology of Burials in England and English Heritage, Swindon

Minnis, J. 2014, *England's Motoring Heritage from the Air*, Swindon, English Heritage.

Oxley, I and Pater C, "Developing Marine Historic Environment Management Policy: The English Heritage Experience" in *Marine Policy*, Elsevier

Parker Pearson, M, Marshall, P, Pollard, J, Richards C, Thomas, J, and Welham, K, 2013 Stonehenge in A Harding and H Fookens (eds) *The Oxford Handbook of the European Bronze Age*, Oxford University Press (Oxford, 2013) pp159–178

Parker Pearson, M, Cox Willis, C, Marshall, P, Mulville, J, Smith, H, Cowie, T, Craig, O, Deluis, I, Juddery, M, Manley, H, Schwenninger, J-L and Taylor, G, 2013 After the 'Frankenstein mummies': Cladh Hallan in the Bronze and Iron Ages, *PAST* **73**, 11–13

Payne, A 2013 'Researching the Environs: The broader landscape setting of Brading Roman Villa. Extensive magnetometer survey of the wider landscape surrounding the villa settlement.' *in* Cunliffe, B (ed), *The Roman Villa at Brading, Isle of Wight*. Oxford University School of Archaeology Monograph, 77. Oxford, 249-252.

Pelling, R 2013 'The Charred Plant Remains from the Excavations of 2008-10', *in* Cunliffe, B *The Roman Villa at Brading, Isle of Wight. The Excavations of 2008-10* Oxford: Oxford University School of Archaeology: Monograph **77**, 235-38

Pelling, R. 'The plant remains', in chapter 11 'Environmental evidence and dendrochronology', in B M Ford, D, Poore, R Shaffrey, and D R P Wilkinson *Under the Oracle. Excavations at the Oracle Shopping Centre site 1996-8: the medieval and post-medieval urban development of the Kennet floodplain in Reading*, (Thames Valley Landscapes Monograph **36**), (Oxford: Oxford Archaeology 2013), CD Rom and contributions within the text

Pelling, R. 'Charred and waterlogged plant remains' *in* A Brossler, F Brown, E Guttmann, E L Morris, and L Webley, *Prehistoric Settlement in the Lower Kennet valley. Excavation at Green Park (Reading Business Park), Phase 3 and Moores Farm, Burghfield, Berkshire* (Thames Valley Landscapes Monograph **37**), (Oxford: Oxford Archaeology, 2013) pp39-40, 99

Preston-Jones, A and Okasha, E 2013 *Early Cornish Sculpture* OUP

Reimer, P J, Bard, E, Bayliss, A, Beck, J W, Blackwell, P, Bronk Ramsey, C, Buck, C E, Cheng, H, Edwards, R L, Friedrich, M, Grootes, P M, Guilderson, T P, Haflidason, H, Hajdas, I, Hatté, C, Heaton, T J, Hoffmann, D L, Hogg, A G, Hughen, K A, Kaiser, K F, Kromer, B, Manning, S W, Niu, M, Reimer, R W, Richards, D A, Scott, E M, Southon, J R, Staff, R A, Turney, C S M, and van der Plicht, J, 2013 IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP, *Radiocarbon*, **55**, 1869–87

Sloane, B 2013 *The Augustinian Nunnery of St Mary Clerkenwell, London: Excavations 1974-96*, Museum of London Archaeology Monograph 57

Streeten, A 2013. *Excavations at South Mimms Castle, Hertfordshire 1960-91* (with J Kent and D Renn) London & Middlesex Archaeological Society Special Paper

Thomas, R M 2013 Bridging the gap: scale and development-led archaeology in England, *Landscapes* 14 (1), 92-102

Thomas, R M 2013 Review of S. Townley (ed) *The Victoria History of the Counties of England. A History of the County of Oxford. Volume XVII. Broadwell, Langford and Kelmscott, Landscape History* 34 (1), 107-8

Thomas, R M 2013 Foreword, in P. Wise (ed), *Colchester, Fortress of the War God: an archaeological assessment*, Oxford: Oxbow Books, xv-xvi

Thomas, R M 2013 Making the most of development-led archaeology, *The Archaeologist* 89, 12-16

Thomas, R M 2013 Development-led archaeology in England today in M.P. Guermandi and K.S. Rossenbach, *Twenty years after Malta: preventive archaeology in Europe and in Italy*, Bologna: IBC, 87-102

Timberlake, S, and Marshall, P, (2013) Understanding the chronology of British Bronze Age mines - Bayesian modelling and theories of exploitation, in: *Mining in European History and its Impact on Environment and Human Societies* – Proceedings for the 2nd Mining in European History Conference of the FZ HiMAT, 7.-10. November 2012 (eds P Anreiter, K Brandstätter, G Goldenberg, K Hanke, W Leitner, K Nicolussi, K Oeggl, E Pernicka, V Schaffer, T Stöllner, G Tomedi, and P Tropper), Innsbruck, 59–66

Versteegh, E A. A, Black, S, Canti, M G, and Hodson, M E 2013 'Earthworm-produced calcite granules: a new terrestrial palaeothermometer?'. *Geochimica et Cosmochimica Acta*. doi: http://dx.doi.org/10.1016/j.gca.2013.06.020 (2013)

Warman, S. Section 5.2 The Animal bone in Ridgeway, V. and Watts, M. (eds) 2013 Friars, Quakers, Industry and Urbanisation The Archaeology of the Broadmead Expansion Project Cabot Circus, Bristol 2005-2008 Cotswold Archaeology CA monograph/ PCA monograph series Volume: 5/16 (2013).

Went, D and Ainsworth, S 2013 Whitley Castle, Northumberland: An Analytical Survey of the Fort and its Setting *Britannia* 44 93-143 99

Wickstead H, Barber M 2013 'Damerham Archaeology Project 2009-12'. *CBA Wessex News* Spring 2013, 8.

Wilkinson. T J, Murphy, P L, Brown, N, and Heppell, E. 2012. The Archaeology of the Essex Coast Volume II. Excavations at the Prehistoric Site of The Stumble. *East Anglian Archaeology* 144. Essex County Council: Chelmsford.

Williams, M, *'Textile Mills of South West England'* (EH monograph, 2013) 320pp, 357 illustrations

Wilson, P. 'Foreword' in ed. P.J. Wise *Colchester, Fortress of the War God – An Archaeological Assessment* (2013).

Wilson, P. 'Hadrian's Wall' and 'Northern England' sections 'Roman Britain in 2012' published in *Britannia* online 'first view' (2013).

Wilson, P, 'Emeritus Professor Philip Rahtz: An Appreciation' published in the *Ryedale Historian*, 26 (2012-2013), 56-62

Worley, F 2013 'The animal bones from the excavations of 2008-10' *in* Cunliffe, B *The Roman Villa at Brading, Isle of Wight: The Excavations of 2008-10* Oxford: Oxford University School of Archaeology Monograph **77** 239-48

Wysocki, M, Griffiths, S, Hedges, R, Bayliss, A, Higham, T, Fernandez-Jalvo, Y, and Whittle, A. Dates, diet, and dismemberment: evidence from the Coldrum Megalithic monument, Kent, *Proc Prehist Soc*, 79, (2013) pp1–30.

Research Report Series April 2013 - December 2013

2009 SERIES

28. Bryan, P, and Stroud, R, 'Application of Microsoft Photosynth Within Heritage'

2011 SERIES

52. Wilkinson, K, 'Regional Review of Environmental Archaeology in the Southern Region: Molluscs'

70. Graham, K and Karsten, A, 'Leather Drying Trial: A comparative study to evaluate different treatment and drying techniques for wet, archaeological leather'

76. Carpenter, E, and Winton, H, 'Marden Henge and Environs, Vale of Pewsey, Wiltshire, A report for the National Mapping Programme'

88. Mays, SA, McCormac, FG, Bayliss, A, Beavan, N, and Hines, J, 'Amino Acid and Stable Isotope Analyses of Skeletons Dated for the Anglo-Saxon Chronology Project'

89. McCormac, FG, Thompson, M, Brown, D, Bayliss, A, Beavan, N, Reimer, PJ, and Hoper, ST, 'Laboratory and Quality Assurance Procedures and the Queen's University, Belfast Radiocarbon Dating Laboratory for Samples Dated for the Anglo-Saxon Chronology Project'

2012 SERIES

15. Dungworth, D, and Dunster, J, 'St Algar's Farm, Frome, Somerset: The Analysis of Lead-Working Waste'

36. Horsfall Turner, O, 'Bexwell Barn, Bexwell, Norfolk: Analysis and Interpretation'

52. Kerr, B, '84 Ravensdowne, Berwick-upon-Tweed, Northumberland: An Investigation and Statement of Significance'

2013 SERIES

7. Schwenninger, J, Toms, PS, Duller, GAT, Brown, AG, and Basell, L, 'Chard Junction Quarry, Somerset: Optical Stimulation Luminescence Dating of the Proto-Axe'

8. Linford, PK, Payne, AW, and Linford, NT, 'Marden Barrow Cemetery and Wilsford Henge, Wiltshire: Report on Geophysical Surveys, September 2012'

9. Linford, PK, Payne, AW, and Linford, NT, 'Charlton Barrow Cemetery and Roman Villa, Wiltshire: Report on Geophysical Survey, July 2012'

13. Howard, RE, Arnold, AJ, Bayliss, A, Cook, GT, and Marshall, P, 'Church of St Michael, Church Street, Appleby Magna, Leicestershire: Tree-Ring Analysis and Radiocarbon Wiggle-Matching of the Ladder in the Tower'

14. Howard, RE, and Arnold, AJ, 'Godwick Great Barn, Godwick, Tittleshall, Norfolk: Tree-Ring Dating of Timbers'

18. Hill, N, 'Apethorpe Hall, Apethorpe, Northamptonshire: Record of opening up - Volume 4 - Historic Buildings Report'

19. Hill, N, 'Apethorpe Hall, Apethorpe, Northamptonshire. The Dovecot Roof - Historic Buildings Report'

21. Small, F, Carpenter, E, Newsome, S, and Hazell, Z, 'Hoo Peninsula, Kent: Hoo Peninsula Historic Landscape Project'

22. Small, F, Carpenter, E, and Barber, M, 'South Downs Beachy Head to the River Ouse: Aerial Investigation and Mapping Report'

24. Schwenninger, J, Peat, D, and Bapty, I, 'Rotherwas, Herefordshire: Optically Stimulated Luminescence (OSL) Dating of Sediment Samples'

26. Hill, N, 'Apethorpe Hall, Apethorpe, Northamptonshire. Record of opening up - Volume 5 - Historic Buildings Report'

27. Ainsworth, S, and Horgan, J, 'Osmington White Horse Hill-Figure, Dorset: A Regal Restoration'

28. Dungworth, D, Lowerre, A, and Comeau, B, 'St Algar's Farm, Selwood, Somerset: Geochemical Survey'

30. Pelling, R, 'The Charred Plant Remains from a Corn-drier at Lower Woods Stanley Meadow, South Gloucestershire'

32. Howard, RE, and Arnold, AJ, 'Linnels Mill, Hexhamshire Low Quarter, Hexham, Northumberland: Tree-Ring Analysis of Timbers'

33. Howard, RE, and Arnold, AJ, 'Muniment Room, Melbourne Hall, Melbourne, Derbyshire: Tree-Ring Analysis of Timbers'

34. Howard, RE, and Arnold, AJ, 'Church of St Nicholas, Church Road, Potter Heigham, Norfolk: Tree-Ring Analysis of Timbers'

35. Howard, RE, and Arnold, AJ, 'Fairfield House, Stogursey, Somerset: Tree-Ring Analysis of Timbers'

37. Winton, H, and Grady, D, 'Bradford Abbas, Dorset: Aerial Investigation and Mapping of a Roman Camp'

39. Edgeworth, M, 'Grain Island Firing Point, Yantlet Creek, Isle of Grain, Medway: Archaeological Desk-Based Assessment'

40. Linford, NT, 'Portland Castle, Dorset: Report On Geophysical Survey, November 2012'

41. Edwards, Z, 'Stoke Hammond, Buckinghamshire: Aerial Investigation and Mapping of Two Possible Neolithic Enclosures'

43. Jamieson, E, 'Kirby Hall, Northamptonshire: the Garden and Settlement Remains Surrounding the Elizabethan Mansion House'

44. Menuge, A, and Went, D, 'Nappa Hall, Askrigg, North Yorkshire: An Investigation and Assessment of the Late Medieval Hall in its Immediate Setting'

45. Canti, M, Campbell, G, and Greaney, S, 'Stonehenge World Heritage Site Synthesis Prehistoric Landscape, Environment and Economy'

46. Tyers, I, 'Lytham Hall, Lytham, Lancashire: Dendrochronological Analysis of Oak and Pine Timbers, and Living Oak Trees'

47. Howard, RE, and Arnold, AJ, 'Church of St Nectan, Stoke, Hartland, Devon: Tree-Ring Analysis of Timbers'

50. Williamson, T, Gregory, J, and Spooner, S, 'Lancelot 'Capability' Brown. A Research Impact Review prepared for English Heritage by the Landscape Group, University of East Anglia'

55. Linford, PK, Payne, AW, and Linford, NT, 'Lakes and Dales Nais, Millbeck Farm, Middleton, Cumbria: Report on Geophysical Survey, July 2013'

57. Linford, PK, Payne, AW, and Linford, NT, 'Lakes and Dales Nais, Gowrey Farm, High Casterton, Cumbria: Report on Geophysical Survey, August 2013'

59. Linford, PK, Payne, AW, Linford, NT, and Hardwick, I 'Stonesfield Roman Villa, Oxfordshire: Report on Geophysical Surveys, September 2013'

61. Linford, PK, Payne, AW, and Linford, NT, 'Priddy Circle 1, Somerset: Report on Geophysical Surveys, March 2013'

http://www.english-heritage.org.uk/publications/research-reports/

KEEPING UP TO DATE
Expert, in-depth articles available

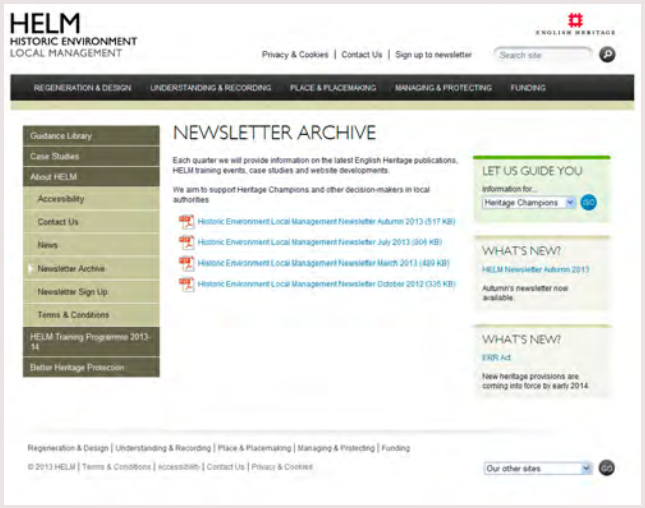
CONSERVATION BULLETIN

The latest edition of Conservation Bulletin is now available. This issue covers Conflict and Defence themes. Conservation Bulletin is produced twice a year and aims to communicate the latest professional thinking alongside practical case studies gathered from across the public, private and voluntary sectors.

Conservation Bulletin is available to read at www.english-heritage.org.uk/conbull. Subscribe online at www.english-heritage.org.uk/cbsubscribe.

HELM

The English Heritage Historic Environment Local Management email newsletter is issued four times per year, providing updates to heritage protection legislation and practice, new publications, case studies of local engagement, and training opportunities for those working locally to manage England's heritage.



The archive of past issues is available to read online at http://www.helm.org.uk/about-us/newsletter-archive.

HERITAGE CALLING

Heritage Calling blog also provides short articles from our specialist teams championing historic places and advising Government and others. In the latest posting, Paul Stamper reviews English Heritage plans for commemoration of the First World War, through work to identify the impact of the war in the English landscape and built environment.

Read and subscribe to the Heritage Calling blog.

HERITAGE COUNTS 2013

Heritage Counts 2013, the annual survey of the state of England's historic environment, was released on 19th November. It is produced by English Heritage on behalf of the Historic Environment Forum, which represents all the major heritage organisations in England. This year?s research focuses on skills and new research found that the majority of organisations do not have a training budget, while almost half of organisations expect skills to be lost and not replaced due to retirement. For more information on these findings and a range of national, regional and wherever possible local level figures including number of heritage assets, planning applications and visitor figures, please visit the Heritage Counts website.

Research News appears twice per year.
Published February 2014 © English Heritage 2014.
Edited by Jon Cannon. Designed by Vincent Griffin.

Cover picture: Portrait of Hakim Ishao, Iman of the Jamia Mosque, Green Street, Totterdown, Bristol. Photograph by James O. Davies © English Heritage

To subscribe to Research News Online:
Subscribe online at www.english-heritage.org.uk/rnsubscribe
Comment should be sent to Paul Backhouse at:
ResearchNews@english-heritage.org.uk

ISSN 2055-2718

ENGLISH HERITAGE

If you require an alternative accessible version of this document (for instance in audio, Braille or large print) please contact our Customer Services Department:
Telephone: 0870 333 1181
Fax: 01793 414926
Textphone: 0800 015 0516
E-mail: customers@english-heritage.org.uk