NEWSLETTER OF THE ENGLISH HERITAGE RESEARCH DEPARTMENT

RESEARCH NEWS

Detail from one of several long lost drawings found at St Mary's church, Battersea – see story page 3

Inside this issue...

ENGLISH HERITAGE

NUMBER 13
WINTER 2009-10
ISSN 1750-2446

RESEARCH THEMES AND PROGRAMMES

A Discovering, studying and defining historic assets and their significance

A1 What's out there? Defining, characterising and analysing the historic environment

A2 Spotting the gaps: Analysing poorly-understood landscapes, areas and monuments

A3 Unlocking the riches: Realising the potential of the research dividend

B Studying and establishing the socio-economic and other values and needs of the historic environment and those concerned with it

B1 Valuing the historic environment: Quantifying the economic and social value of historic assets

B2 Gauging the mood: Establishing perceptions and attitudes to the historic environment

B3 Understanding the needs: Delivering sector intelligence

C Engaging and developing diverse audiences

C1 Opening Doors: Understanding public participation in the historic environment

C2 Making Friends: Building understanding and appreciation through education and outreach

D Studying and assessing the risks to historic assets and devising responses

D1 Heritage at risk: Quantifying and analysing the historic environment

D2 Measuring threat: Studying the reasons for risk and developing responses

D3 Keeping it safe: Protection and conservation

D4 Rescue! Threat-led last resort analysis

E Studying historic assets and improving their presentation and interpretation

E1 Presenting the past: Research to inform the presentation to the public of historic places

F Studying and developing information management

F1 Navigating the resource: Developing standards for Historic Environment Records

F2 Wired! Studying and developing information management

G Studying and devising ways of making English Heritage and the sector more effective

G1 Sharpening the tools: Developing new techniques of analysis and understanding

G2 Defining the questions: Devising research strategies, frameworks and agenda

G3 Impact and effectiveness: Measuring outcomes and effectiveness of English Heritage and the sector

Research News 13 is once again a general issue, presenting a wide range of work undertaken recently by staff in Research Department.

Battersea and Peckham may not enjoy the same heritage profile as iconic London landmarks such as the Tower of London or St Paul's Cathedral, but both have rich histories which work by Research Department is helping to bring to light. In Battersea, the work of the Survey of London has resulted in the discovery of lost drawings of a Georgian parish church, while research undertaken for a Historic Area Assessment has elucidated the evidence for Peckham's past as a genteel residential suburb.

Industrial archaeology is represented by the Tone Works, near Wellington in Somerset, a well-preserved cloth-finishing factory with a long history, including the provision of khaki cloth and puttees during World War I. Comprehensive investigation to a high standard of the buildings, water management systems and machinery of this important complex provides the evidence base needed for appropriate conservation management and regeneration of the site.

The discovery by metal detector of a pair of rare gilded Viking tortoise brooches at Cumwhitton in north Cumbria, and their declaration to the Portable Antiquities Scheme, led to excavation by Oxford Archaeology North of six Viking-period graves. Soil conditions meant that the finds had to be lifted in soil blocks and taken for excavation to our conservation laboratory at Fort Cumberland. Painstaking laboratory investigation has revealed fugitive details of rich and complex grave assemblages, including evidence for a sealskin garment.

Testing and supporting the application of new methods and techniques is an important part of Research Department's work, and in this issue we feature two very different initiatives. The first highlights the tremendous potential of the new generation of smart 'phones to enhance the experience of visiting sites and monuments by giving access to web-based information and interpretation. The second is an international collaboration between English Heritage, Newcastle University and FBK Trento, Italy, which seeks to provide professional advice to the sector on the development and application of innovative and fast-developing 3D survey techniques such as digital photogrammetry and 3D laser scanning.

Finally, we report on further aspects of research at Apethorpe Hall, work at Hadleigh Castle, and the discovery of thee new prehistoric monuments through aerial photography.

Christopher Scull
Research Director
Research and Standards Group

Research News appears three times per year.
Published January 2010
Edited by Tony Wilmott. Designed by Vincent Griffin.
Printed by The Colourhouse
Product code 51576

Comment should be sent to Tony Wilmott at: English Heritage, Fort Cumberland, Fort Cumberland Road, Eastney, Portsmouth, PO4 9LD.
Telephone: 023 9285 6700. Fax: 023 9285 6701.
Email: fort.cumberland@english-heritage.org.uk

Rediscovered: long lost drawings of a London church

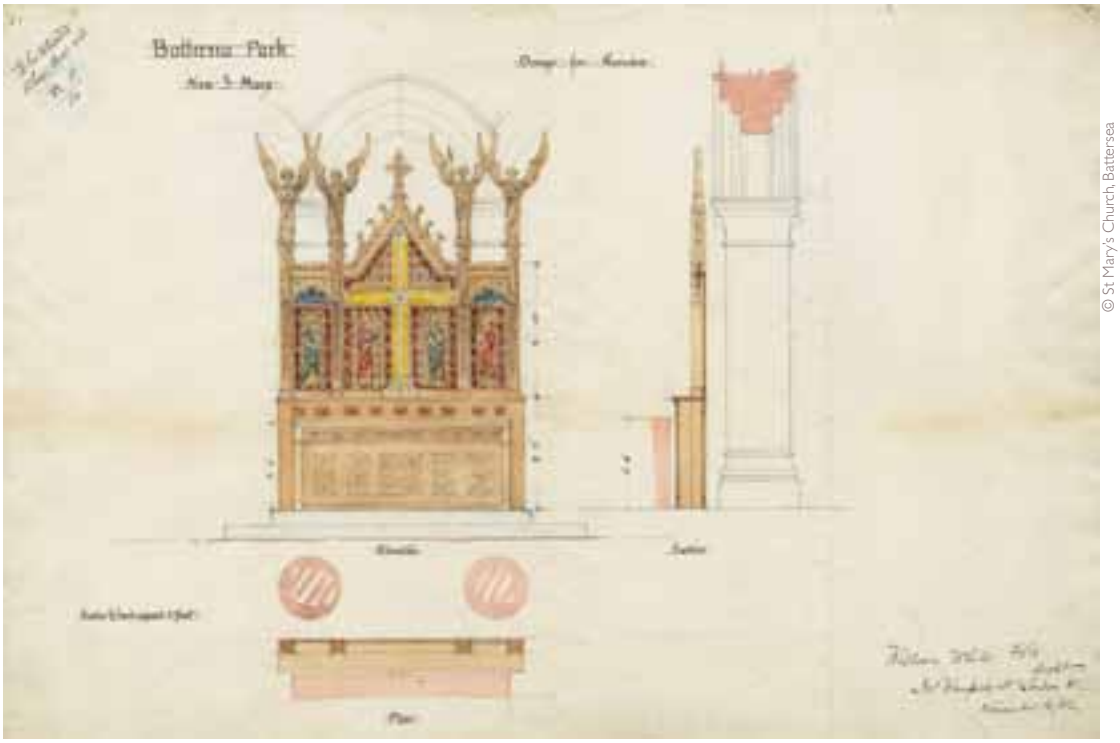
The discovery of architectural drawings in a Battersea church leads to an important find for the Survey of London.

Research for the *Survey of London* consists in the main of small, incremental discoveries about the history and fabric of the metropolis. Pieced together, they present a full and often radically new interpretation of an area of London, once the volumes of the *Survey* appear.

Occasionally, as the patient work of assembling the picture of a district or building takes its course, there come real surprises and revelations which help to keep the *Survey* team in spirits. Many of these come from unearthing valuable sources which have been lost or just never looked at before. Even today, quantities of historical records and drawings have yet to find their way into official archives. An unsung aspect of the *Survey*'s job is to dig out material of this kind and, where appropriate, encourage owners to deposit it in places where it will be better looked after and, one hopes, more accessible.

Naturally enough, major records of most of London's older churches have found their way to archives by now. So it was a surprise to find that St Mary's, Battersea – the Georgian parish church of one of two south London districts which the *Survey* is tackling at the moment – has a cubby hole off the crypt full of deeds, drawings and documents of varying dates and purposes. From the architectural standpoint the most interesting of these is a set of drawings, some in a very scrappy and fragile condition, for a church by a major Victorian architect, William White. This was a project of 1879 onwards for a daughter church to St Mary's, confusingly called St Mary le Park. Intended to replace the parish

St Mary le Park, Battersea, proposed east elevation, by William White, 1879



St Mary le Park, Battersea, proposed reredos, design by William White, 1882

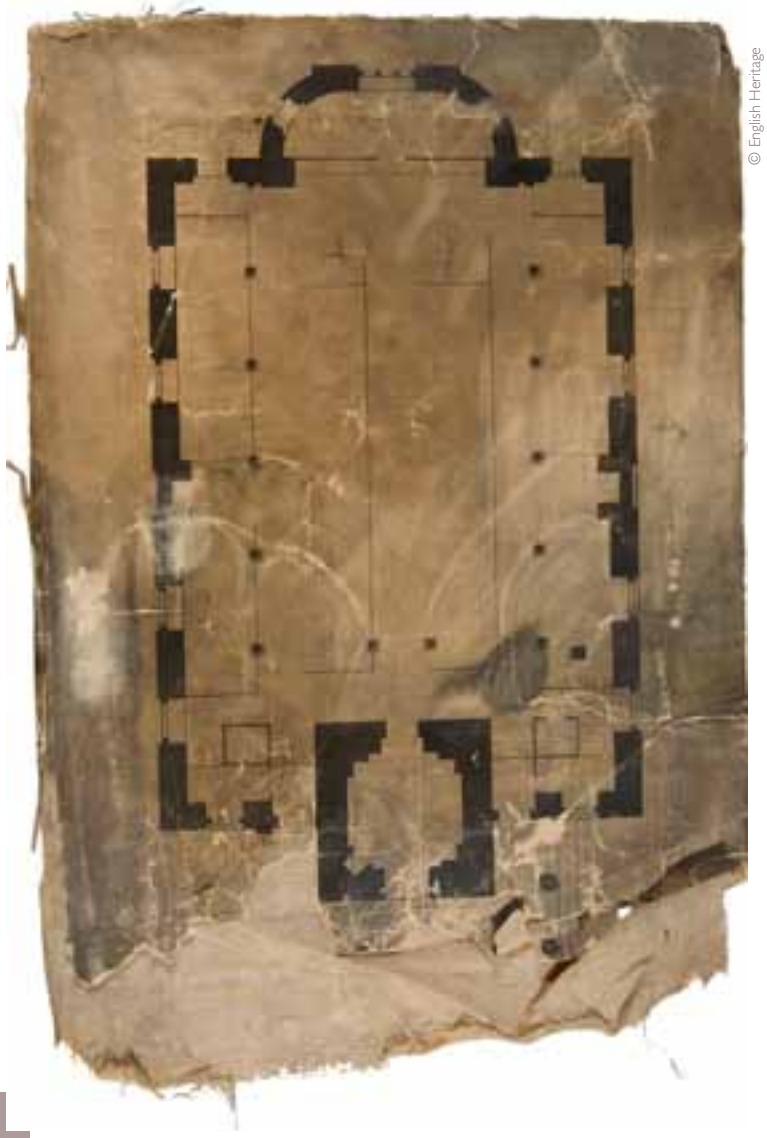
church of 1775–7 in a smarter position next to Battersea Park, it was to be a grand building on a cathedral scale – perhaps the biggest church White ever designed. As things turned out, only the rump of St Mary le Park was ever built. It has now been demolished, leaving the older St Mary's unchallenged.

But to have White's original designs is very valuable, the more so because no concerted collection of his drawings survives.

There was more, however. Older histories of the Georgian church refer in passing to original drawings, extant in the 1920s. The

Below left: St Mary's, Battersea, ground plan drawn by Joseph Dixon junior, 1777

Below right: St Mary's, Battersea, west elevation drawn by Joseph Dixon junior, 1777

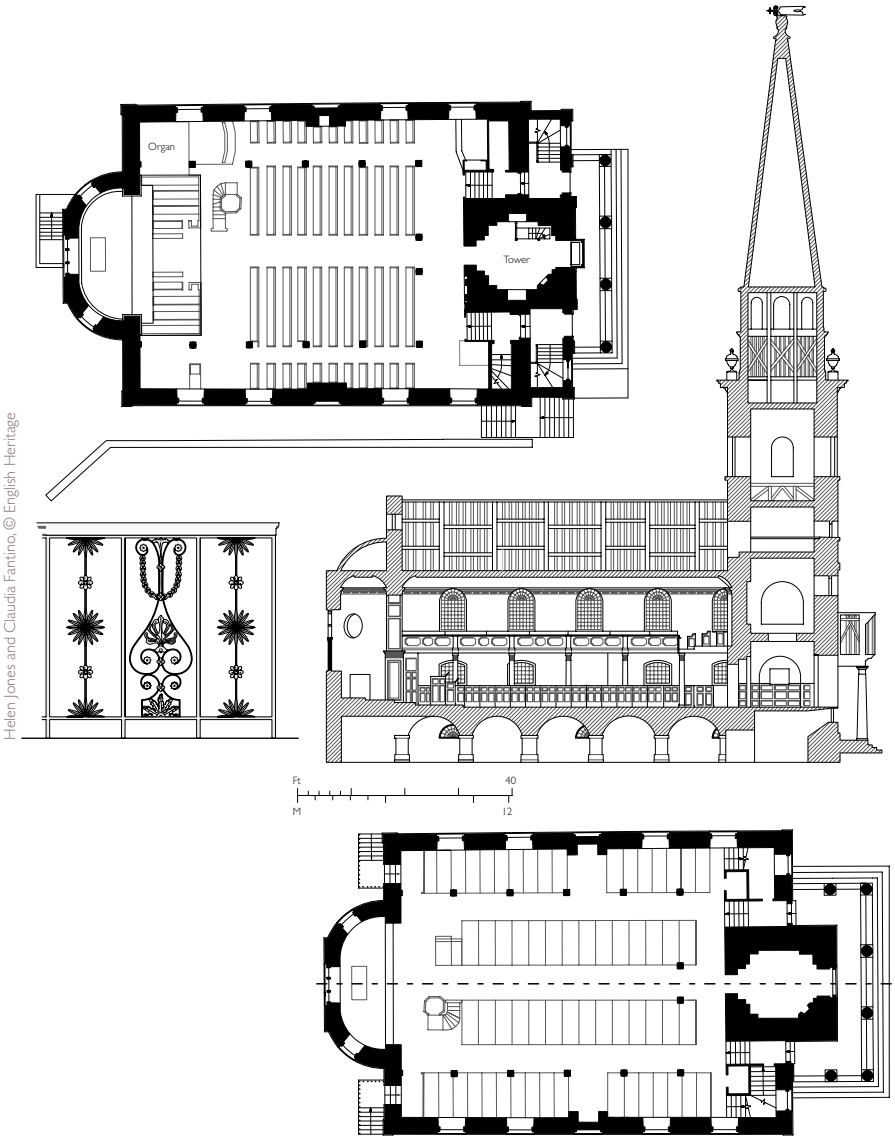


minutes of the original building committee were also explicit. When St Mary's was completed in December 1777, Joseph Dixon junior, the son of its architect, was paid fourteen guineas to make plans, elevations and sections which were framed, glazed and hung in the church. Where had they gone? They were not in any archives. Nor, frustratingly, were they in the cubby hole, and no one in the parish remembered seeing them. But there were memories of a parishioner and amateur historian who had looked after the cubby hole, and rumours of material having been in his possession at the time of his death and possibly then removed for restoration and safe keeping.

In such circumstances polite persistence, as any researcher knows, is the only tactic to pursue. After convoluted enquiries the drawings were located – in far-away Lampeter. Their possessor had never regarded himself as their owner, and was happy to return them to the church. On their recovery it was clear that at some stage they had been badly water-damaged, perhaps during the Second World War, which may have been why they had been removed from their frames and put away.

An original set of six record drawings of a Georgian parish church is a rare discovery, not least in London. The Dixon junior drawings (for that is what they must be) are economical, but they convey all the essential information needed to understand the construction and appearance of St Mary's. They have also enabled us to solve various puzzles. It's usually been assumed, for instance, that the church has been little altered since the 1770s, but the drawings confirm that the west front and the galleries underwent substantial change in the 1820s to get in more seats, as suburban Battersea's population started to rise. They also suggest that the main ceiling has been slightly raised.

The damaged state of the discovered drawings also raises questions about how they should best be illustrated in the *Survey* volume. The decision has been to show at least one of them, probably the west elevation, but to redraw the plan and the long section. That way, the unique information they contain will be clearly conveyed to the reader, while comparative plans of the building today and in 1777 will show how the seating arrangements have changed over the centuries.



Helen Jones and Claudia Fantino, © English Heritage

St Mary's, Battersea, drawings by Helen Jones and Claudia Fantino prepared for the *Survey of London* volume, showing the plan as it is today (top), as it was in 1777 (below), a section of the church based on the 1777 drawings, and a detail of the altar rail

The drawings are now back with the church. But negotiations to deposit these and the St Mary le Park drawings in an appropriate archive where they can be restored are in train, and will soon hopefully be concluded. A case like this raises an outstanding issue, however, with which historians of architecture may be familiar. Historic architectural drawings are best cared for in specialist archives with experience in dealing with them and appropriate facilities. But this may mean separating them from the written records with which they naturally belong.

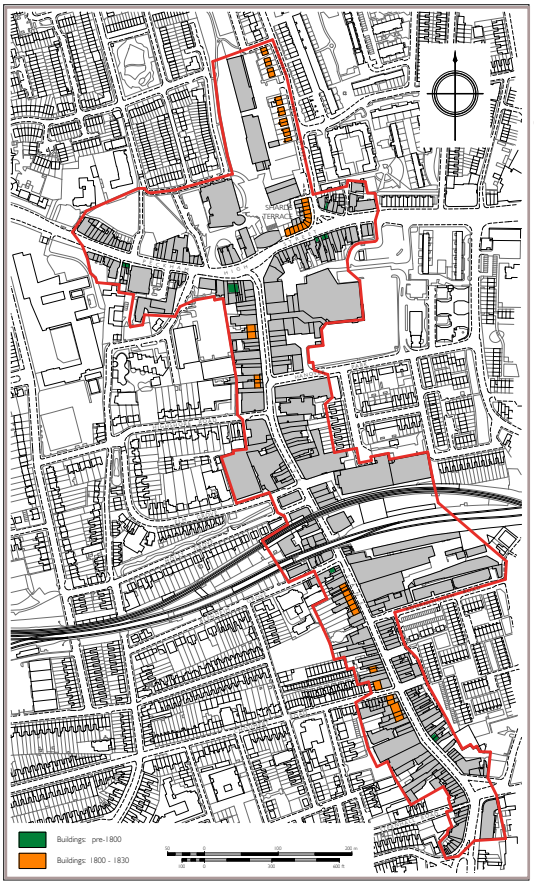
Andrew Saint

Peckham's genteel past

The appearance of modern, commercial, inner city Peckham masks an earlier residential suburb.

The future of central Peckham, in the London Borough of Southwark, is under discussion. This sometimes beleaguered inner-city area, known for its multicultural population and range of ethnic shops, is the subject of an Area Action Plan to guide future investment and inform planning policy. In response, English Heritage commissioned a Historic Area Assessment from the southern Architectural Investigation Team to analyse the character and significance of central Peckham's built environment. The results confirm the rich architectural heritage of this part of south London.

The assessment highlighted three major elements that contribute to the character of the area. These were the survival of an impressive number of houses from the eighteenth and nineteenth centuries, a rich legacy of retail architecture reflecting Peckham's importance as a shopping destination, and recent urban interventions in the form of landscaped areas and landmark buildings such as the Stirling Prize-winning Peckham Library by Alsop and Störmer. The surviving 18th-century houses were recorded and analysed for Peter Guillery's book *The Small House in Eighteenth-Century London*. This article focuses on the early-19th-century houses, evidence relating to which raises questions and opportunities for further research.



Map showing buildings that may contain earlier fabric (Crown Copyright. All rights reserved. English Heritage 100019088.2009)

For most of its early history Peckham was a rural hamlet in the parish of Camberwell. It developed around an irregular crossroads of the present Peckham High Street (running west to east), Peckham Hill Street (to the north) and Rye Lane (to the south). While some large high-status houses were built along the High Street from the sixteenth century onwards, it was only in the early 18th century that Peckham grew into a larger settlement. Its proximity to London made it a popular holiday resort, with attractions such as an annual fair and a theatre. Some of the earliest surviving houses date from this time and illustrate the area's increasingly semi-urban character. Much less is known about the buildings dating from the early nineteenth century, which formed the first significant phase of development on Peckham Hill Street and Rye Lane. The building of new bridges (particularly of Vauxhall Bridge in 1816) and roads, increases in population and improvements in transport provision contributed to the development of Peckham as a suburb.

After the demolition of a 1672 mansion on the site of the medieval Peckham Manor at the end of the 18th century, the Shard family sold the land for development, which included the cutting of the Peckham branch of the Grand Surrey Canal (opened 1826, closed 1971). On the remaining land, two groups of buildings were erected. At the corner of the High Street and Hill Street, a

Facing page, top: Detail of a map by Christopher and John Greenwood, published in 1830

Facing page, bottom: Shard's Terrace, 91–107 Peckham High Street/126–130 Peckham Hill Street, in 2009

terrace of twelve three-storey brick houses, called Shard's Terrace, was built from 1833. In order to accommodate a corner of nearly 90 degrees, the houses at the centre are wedge-shaped in plan, compensated by a façade one bay wider than the two-bay houses at either end of the terrace. A road widening of 1880–82 subsumed their small front gardens and the houses were soon adapted for commercial use.

In contrast, the other development on Shard land is more varied in scale, setting and decoration. Located further along the west side of Hill Street, today this comprises a mixed group of seven semi-detached pairs and one detached house, dating from the 1820s. Originally, the group was larger and more diverse, comprising six pairs, two terraces of four houses each, and four houses, some of which were demolished in the twentieth century. The surviving buildings are brick houses of differing elevations, with some stucco details, front gardens and large rear gardens stretching towards the site of the canal. Originally, these houses looked eastwards towards Bell's Market Garden until terraces of houses were built here around 1861.

Derek Kendall, © English Heritage

98–100 and 102–104
Peckham Hill Street in 2009

Derek Kendall, © English Heritage

12–16 Rye Lane in 2009

The development of Rye Lane was also uneven. At the beginning of the 19th century, Rye Lane had clusters of houses at its northern and southern ends but most of the land was still used as market gardens, meadows and pasture. By 1840, the west side of the street had been developed as a suburban residential area, with terraces, semi-detached houses with front and rear gardens, and leafy side streets. The land on the east side was still in use as a brickfield and for agricultural purposes – in some cases, such as the Hanover Nursery, this use continued beyond the arrival of the railway in the 1860s.

This differential development may be explained by the pattern of landownership. The main landowner and developer on the west side of Rye Lane was George Choumert (1746–1831), originally from Lorraine, who married into the wealthy Fendall family of Bermondsey and was naturalised in 1796. At the time of the Tithe Survey of 1837–38, the estates belonging to 'the late George Choumert' comprised over 18 acres on the west side of Rye Lane, and originally would have been even larger. In 1815, he built South Street Terrace, and the following year the first houses in George Street (now Holly Grove), the first side street of Rye Lane to be laid out.

The major land owners on the east side of Rye Lane, the de Crespigny family and the Bowyer-Smijth family, were neither as active nor as successful as Choumert.
By 1860, the only major developments on de Crespigny land were one side street, Hanover Park, with three pairs of semi-detached houses (built between 1833 and 1841), and Coborn Terrace on Rye Lane (of *c*. 1847). The rate of development was even slower further south on land owned by the Bowyer-Smijths and the mismanagement of their other estates led to their mortgaging and eventual sale in about 1860.

Early-nineteenth-century semi-detached houses on the west side of Rye Lane form a distinctive component in today's streetscape, such as two pairs from the 1820s at the north end of the street. Their façades are visually unified so as to appear to be two large suburban villas with an air of social exclusiveness: 12–16 Rye Lane features a shared pediment, comparable to contemporary houses in Blackheath, while 26–28 is a pair of houses with a central recessed bay linking the two halves.

Generous scale and semi-detachment, both important characteristics of the early-nineteenth-century development of London's suburbs, can also be found further south on Rye Lane in a group of three pairs of tall houses dating from the 1810s or 20s, which were part of the Choumert Estate (146–50, 152–54, 156–62). While these brick houses are plain and unornamented, they are notable for their height and generous spacing with their originally large front and rear gardens. Curiously, the three pairs are not aligned to each other and stand in a staggered line at a slight angle to the street line.

While today central Peckham has a predominantly commercial character, the surviving early houses offer a glimpse of an earlier incarnation as a genteel residential suburb. By the mid-19th century the process of adaptation, conversion and extension was underway, resulting in their present usage as ground-floor shops with empty or underused upper floors.

Johanna Roethe

26–28 Rye Lane in 2009

Derek Kendall. © English Heritage

Tone Works: a finishing works with a future?

Research on an historic textile works provides a basis for heritage-led regeneration.

Tone Works is the extensive cloth-finishing works of Fox Brothers and Co., one of the most successful and long-lasting firms in the South-West textile industry. It was established in the late 18th century on the site of an earlier fulling mill on the River Tone, about a mile north-west of Wellington, Somerset. For two centuries the works continued to dye and finish the woollen and worsted cloths woven at the company's mills using traditional machinery. When it finally closed in the late 1990s, a consequence of its long working life was the exceptionally good preservation of buildings and mechanical features. These included a complete set of traditional dyeing and finishing machinery, an extensive process-water system, intact late 19th-century line shafting and most of the water-, steam- and early-electric power systems. The complex of buildings and ponds is now derelict and in an increasingly perilous condition, but a detailed investigation by Swindon-based Architectural Investigation staff, requested by the South-

Tone Works was still in use in October 1995. The need for copious amounts of treated water for cloth finishing resulted in good preservation of the extensive system of ponds, watercourses and sluices

James O. Davies, © English Heritage, NMR BB96 01685

Traditional scouring and milling machinery, still in use and powered by 19th-century line shafting in October 1995

West Regional Office, has recognised that they comprise one of the best-preserved historic textile sites in the country.

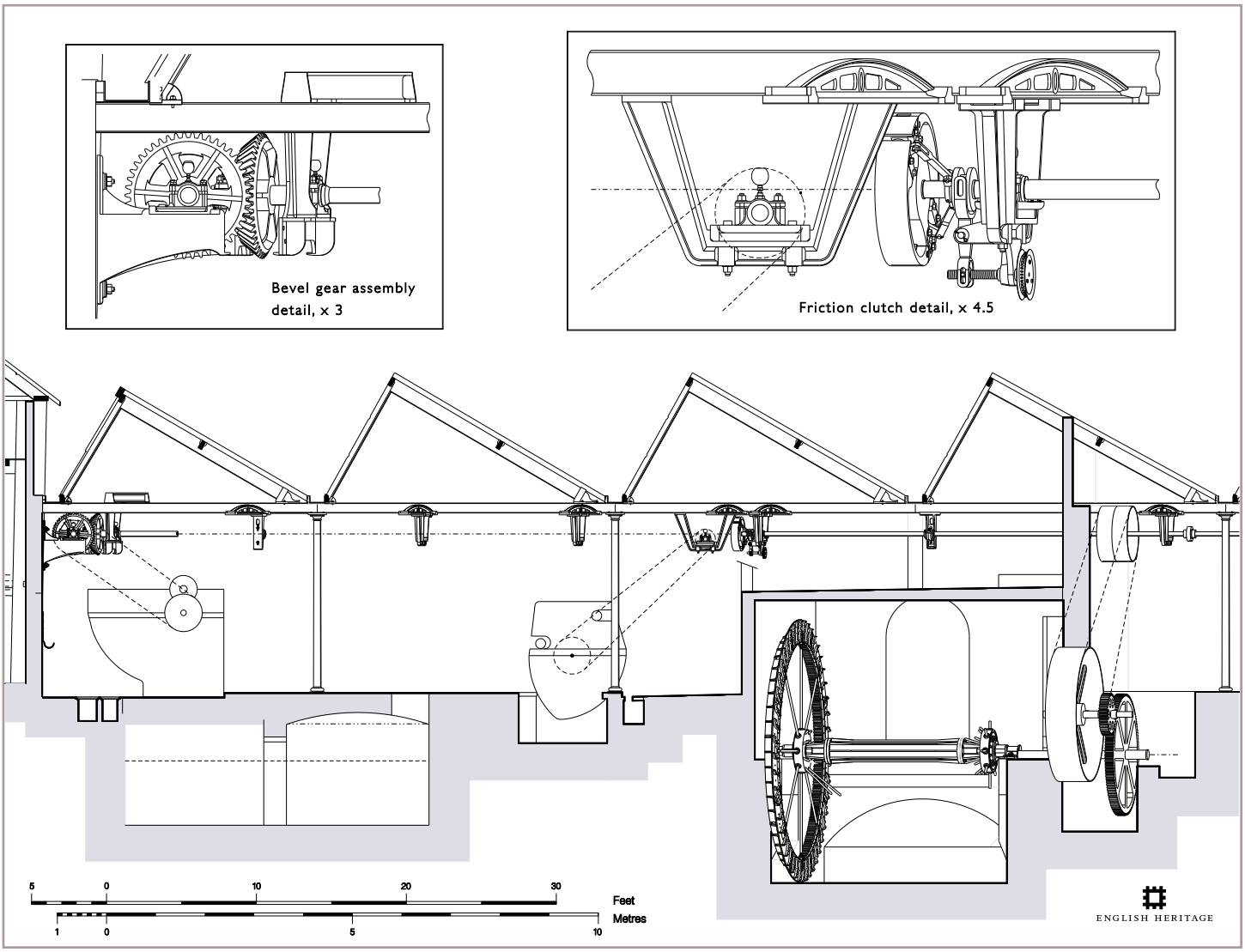
The origins of Fox Brothers and Co. can be traced back to a 17th century clothier business, in which most of the stages of cloth production were sent out to cottage-based workers. From the 1790s the company was transformed by Thomas Fox, who laid the foundations of its later success by adopting the principles of the new factory system. Water-powered mills were built at Wellington and at Uffculme in Devon, and Tone Works developed for dyeing and finishing. Initially the mills were mainly used for powered yarn spinning, but they were later extended into integrated cloth factories undertaking the full range of processes. The firm's headquarters was at Tonedale Mills, not far from Tone Works, which grew into the largest mill complex in the South West, one of the largest in the country. Later in the 19th century other mills were built or taken over across the region; when the firm reached its maximum size during the First World War it also managed an additional 30 mills in Yorkshire.

Under the management of Thomas Fox and his descendents, improvements to the dyeing and finishing processes at Tone Works were central to the success of the business and its long-term survival. Finishing involved a sequence of scouring, milling, raising and cutting processes to achieve cloth of the desired weight and feel. By adjusting each stage a wide variety of finishes could be produced. The firm also made technical improvements to dyeing, especially in the use of indigo dyes and the development of the Khaki dyes used for military uniforms. At the beginning of the 20th century Fox's were the sole licensed manufacturer of Khaki dyed cloth. One of their most successful products was the *Fox's Patented Improved Puttee*, which was formerly used in military uniforms and popular for country wear. Puttees were a type of spiral cloth dressing that was wrapped around the lower leg. The scale of the business was indicated by its output during the First World War, which included twelve million pairs of puttees and four and a half-million yards of Khaki serge.

Tone Works now comprises several groups of mostly single-storeyed brick and stone buildings, some in poor condition, with associated landscape features including ponds, watercourses and sluices. The latter were built to supply water- and steam-power, and to treat large quantities of river water for

In September 2007 the buildings of Tone Works were partially derelict and in poor condition; landscape features were increasingly overgrown and becoming eroded

Damian Grady, © English Heritage, NMR 27420_029



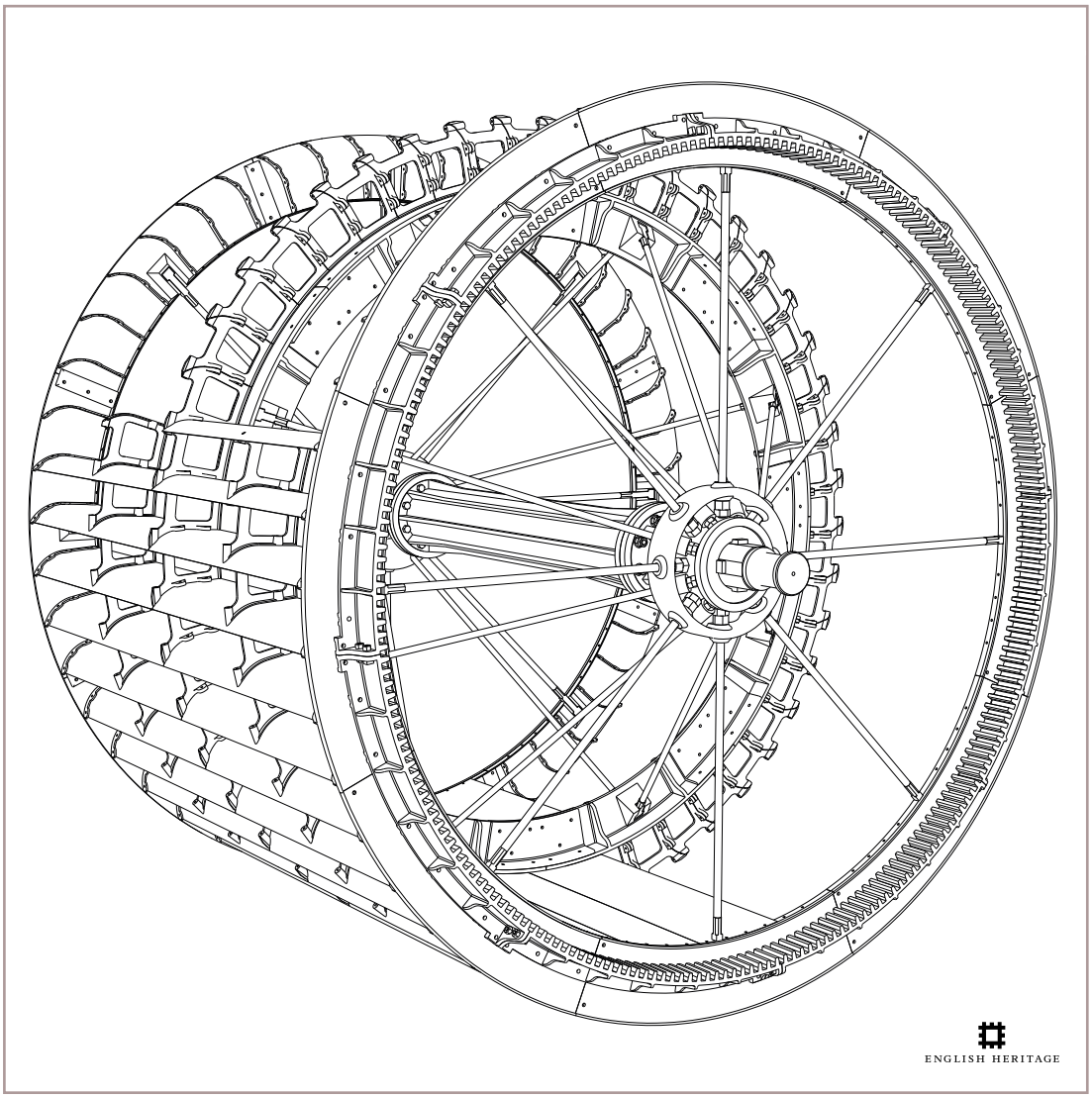
Mike Williams, © English Heritage

Cross-section of the Finishing Works. The water-powered line shaft above the wheel chamber is geared to the steam-powered shaft attached to the left wall. Surveyed April 2007

use in finishing and dyeing. Investigation of the successive phases of building provided evidence of how the various processes had been developed at the site, and also of the occasional rebuilding that resulted from winter floods. In the late 19th century the buildings were gradually reorganised into functional groups which enabled the efficient segregation of processes, including a Dye Works, Finishing Works, dry houses, steam plant and a separate Grease Works for the treatment of effluent.

Investigation was helped by the survival of the extensive Fox Brothers' company archives, still in private ownership, which include a rare collection of cloth samples and details of production methods dating back to the 18th century. Research has indicated that the surviving Tone Works machinery is of the same type and in the same locations as that installed when the Finishing Works was built in the late 19th century, although many of the machines have been altered or replaced in the course of regular maintenance. This is to be expected, since the machines remained in heavy use for a long period and many are of timber construction. In contrast, the power system has retained a much higher proportion of its original features. Before mains electricity was available, power systems were one of the main factors influencing the design of textile factories. At Tone Works, the water-power system was cleverly adapted in the late 19th century to be combined with steam power and DC electric power, which was generated on-site. The extensive system of line shafting used clutches and bevel-gearing to combine the different power sources; this power system was adapted rather than replaced during the 20th century and is now remarkably well-preserved.

Fieldwork and research aimed to examine all of the significant historic features, although



Nigel Fradgley, © English Heritage

The Tone Works suspension wheel, reconstructed from fragments retrieved from the wheel chamber, April 2007. Only the wheel shaft and one of the shrouds remained *in situ*

some buildings were not included due to asbestos contamination. Fortunately the area containing most of the power system and machinery, the Finishing Works, was still accessible, and the whole site had been photographed by RCHME in the 1990s. The need to record mechanical features as well as buildings required measured survey at a wide range of scales using 2D and 3D CAD and EDM. Many parts of the power system and their relationship to the buildings could only be illustrated by combining 2D and 3D graphics. The completed two-volume report was given the Main Fieldwork Award of the Association for Industrial Archaeology in 2008.

The historical significance of Tone Works has been firmly established, but the future of the site is still far from secure. The regeneration of historic industrial sites often begins with investigation and report writing, but these are just the first stages in a long process of negotiation and discussion to identify viable new uses. A wide range of interested organisations and individuals outside EH now recognise the importance of Tone Works, including The Prince's Regeneration Trust, SWRDA, Taunton Deane BC and local developers. The Prince's Regeneration Trust hosted a seminar in Wellington to discuss the future of the site and in 2007 created the Tone Works Partnership to further promote the benefits of regeneration. The difficulties of balancing development with conservation of the range of historic features at Tone are formidable, but detailed investigation has provided the basis of understanding which is required to underpin efforts to secure a positive outcome for the site. Successful conservation programmes elsewhere have already demonstrated that obtaining firm agreement on the heritage value is the vital first step in the process of heritage-led regeneration of industrial sites.

Mike Williams

NEW DISCOVERIES AND INTERPRETATIONS

Hollow swords and needles in a soil block

Unravelling the evidence preserved on the artefacts from the Viking cemetery at Cumwhitton, Cumbria.

Viking cemeteries are scarce in England, and the example at Cumwhitton in north Cumbria was located by metal detectorists who unearthed two gilded tortoise brooches in a ploughed field, and handed them into the Portable Antiquities Scheme. As a result of these unexpected finds Oxford Archaeology North were commissioned to excavate the find site and they located six graves which are assumed, by the finds associated with them, to be of four male and two female burials. The acidic soil conditions mean that no trace of the skeletons remained, not even a soil silhouette, and the metal grave goods are heavily corroded and fragmented. It was recognised from the outset that conservation input would be required to record and understand these delicate remains. The first stage was to remove the groups of metalwork from the site in blocks of soil frozen with dry ice, and this kept all the fragments in position so that they could be transferred to the Fort Cumberland laboratories for excavation and analysis.

The first stage of this investigation was to x-ray all the soil blocks to see what they contained as well as the individual pieces of ironwork from the plough soil to isolate the Viking material from the modern. The biggest surprise was the condition of the metalwork with many of the iron objects disfigured with large corrosion blisters, such as the swords, and other pieces just remain as a hollow shell held together by the iron corrosion as in the case of a large length of chain. Another extreme form of preservation was a tinned and decorated spur where the underlying iron had in some areas dissolved away leaving just the thick tin plating, which remained as a shiny white metal. The only evidence for the shape of some of these iron objects, and any inlaid metal decoration, can be found in the x-ray images. In the case of very small items, such as a group of needles, it was possible to recognise them on the x-radiograph of the box contents but it proved difficult to locate the objects themselves as all that remained were paper thin fragments of iron corrosion.

The copper alloy objects are as fragile as eggshell, because much of the copper has been leached away, leaving a powdery tin oxide core with a shiny green crust which can shatter at the slightest pressure. The decorated rim mount from a drinking horn illustrates this condition clearly, and the x-ray images were needed to obtain the diameter of the original horn it was attached to as the piece itself is too fragile to handle.

Right: Cross section of sword blade, showing that no metal remains and the centre is hollow

Facing page, top left: Sword pommel with fine interlace decoration made from contrasting coloured metal wire inlaid into the iron

Facing page, top right: Drinking horn mount originally made from bronze metal, but is now heavily de-cuprified leaving just a skin of copper corrosion on top of a tin oxide core

Jacqui Watson, © English Heritage

Lucy Skinner, © English Heritage

Although no organic artefacts have survived intact in these burial conditions, traces do remain attached to the metalwork where they have been preserved by the toxic copper salts and can be almost unchanged except for the green colouration, but the protection usually only extends to the outline of the object. In one case the organic remains were found to represent a sealskin garment that was fastened by a highly decorated copper alloy buckle. In other examples the organic material has been impregnated with iron corrosion, leaving it hard and brittle as in the case of wood preserved in spearhead sockets and the sword scabbards made up of layers of wood, leather and textile. It has been possible to identify the wood to species level, finding that all the spearshafts had been made from ash and all the scabbards had thin pieces of willow or poplar inserted between the layers of textile and leather. Personal items such as antler combs were also placed in the graves, but were initially overlooked as only the iron nails remained

Below left: Buckle mounted on seal skin

Below right: Textile interfacing or lining of the garment preserved between two copper plates

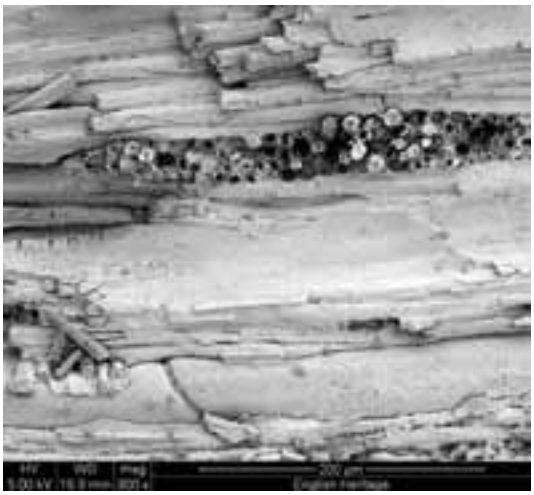
Jie Gao, © English Heritage

Jie Gao, © English Heritage

Top left: Electron micrograph of the wood structure where the microscopic detail is retained in the iron corrosion

Bottom left: Needles – x-ray image

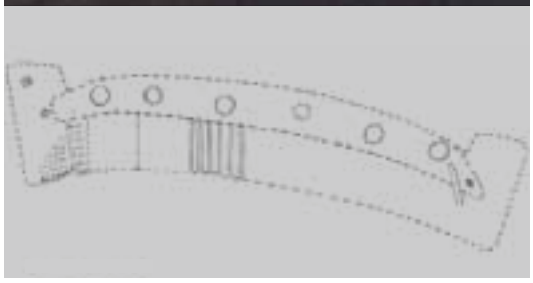
Right: Composite antler comb preserved by the iron shears



Jacqui Watson, © English Heritage

Jacqui Watson, © English Heritage

Lucy Skinner, © English Heritage



Jacqui Watson, © English Heritage

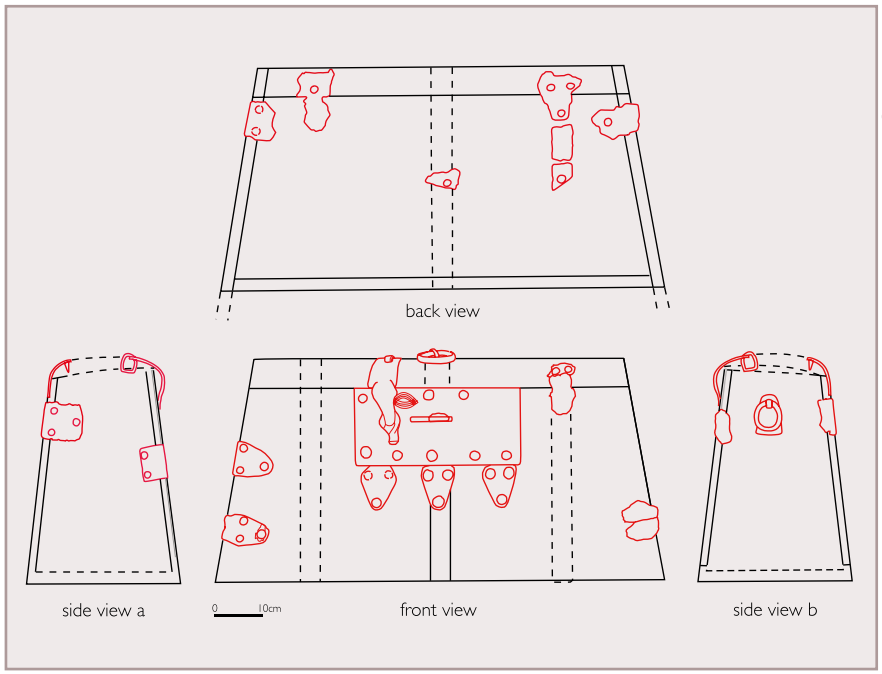
with traces of the organic material preserved on them. Fortunately two of the combs had been placed on top of iron shears which had preserved more of the antler, so that it was possible to record the size and shape of the combs including the decorated end plates on one of them.

The largest soil block contained the iron bindings and other attachments of a wooden casket and its contents. This turned out to contain various tools for textile working, or as we would know it a large needlework box. Wood preserved on the many iron brackets, hinges, strapping and lockplate have enabled us to reconstruct its original form and identify that it was made from maple, probably the field maple variety native to the British Isles rather than Norway maple which was common in Scandinavia. Although the box is identical in construction with similar iron-bound chests found in Scandinavian cemeteries, the choice of wood could indicate that this one was made locally, rather than brought from abroad.

Even after an extensive programme of conservation this exciting assemblage of material still looks like a tangled mass of corroded metalwork and it is easy to underestimate the wealth of information it still holds – a clear case where beauty lies in the eye of the beholder! The objects have now been returned to the Lancaster offices of Oxford Archaeology for further study and illustration for the site publication, and then they will be deposited at Tullie House Museum, Carlisle where some of the items are intended to go on display.

Jacqui Watson

Reconstruction of the needlework box



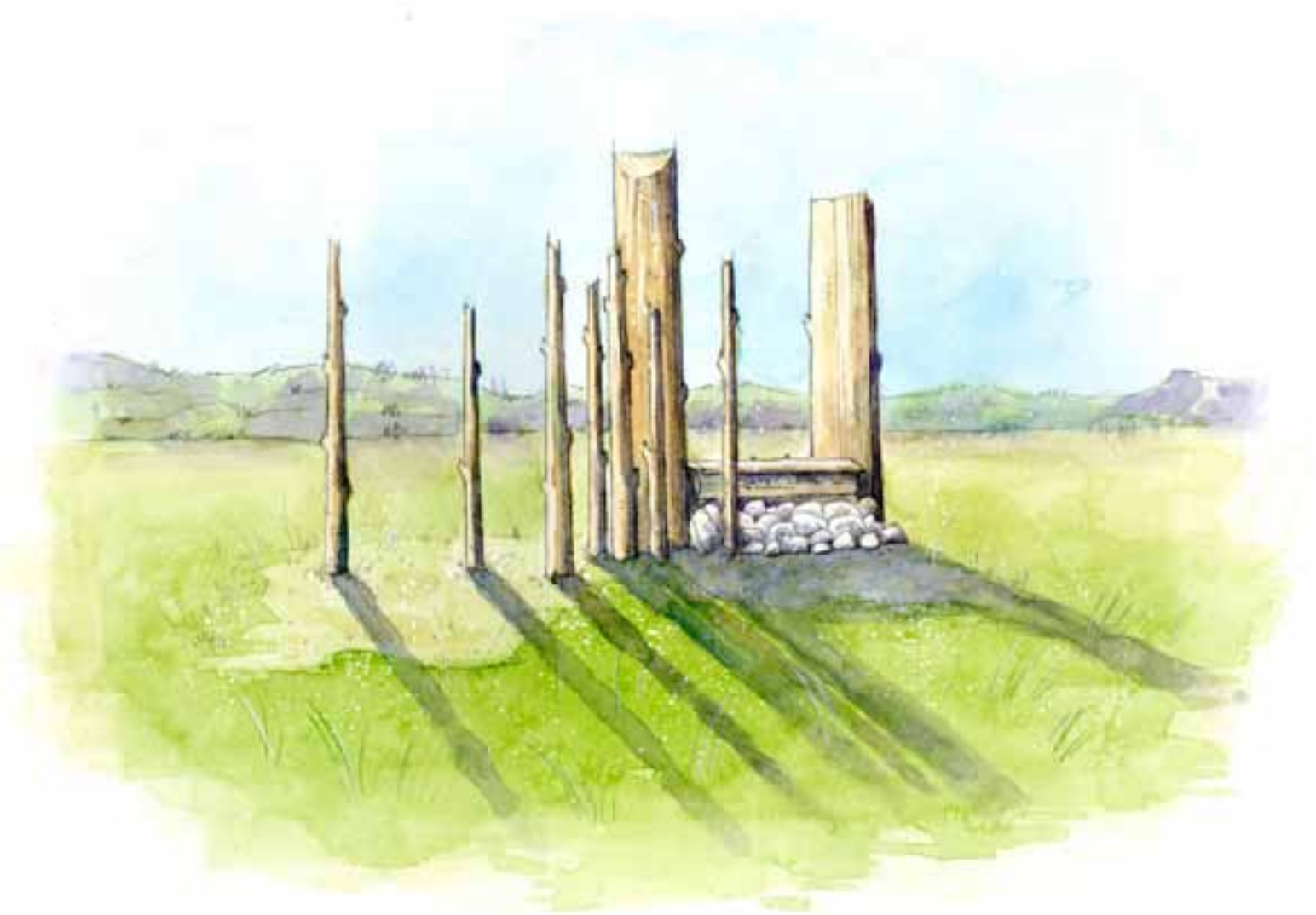
Chris Evans, © English Heritage

The past in your pocket: mobile media and interactive interpretation

Exploring the potential of combining reconstruction illustration with mobile interactive devices in visual interpretation for remote sites.

The Master's programme in Archaeological Illustration at Swindon College (now validated by Oxford Brookes University) which I undertook part-time while working at the NMR, was developed in collaboration with the Association of Archaeological Illustrators and Surveyors, and works in co-operation with English Heritage and archaeological units. The course offers students the opportunity to explore methods of visual representation in archaeology. This includes, but is not limited to, finds recording and the creation of didactic information graphics, through to reconstruction illustration, utilising both traditional hand techniques and digital illustration methods.

One of the six reconstruction illustrations created for this project; an illustration of Alasdair Whittle's theory about the form of the mortuary structure within the early oval barrow at Wayland's Smithy. Pencil & watercolour on watercolour paper



Interactive created by & © Jennie Anderson, 2009

Screenshot from Wayland's Smithy I Interactive, showing textual & diagrammatic information displayed when user hovers curser over 'hot spots' in the reconstruction image (Atkinson's theory)

During my study, issues surrounding the depiction of ambiguity, particularly regarding the creation of reconstruction illustrations, became a particular theme. The focus of my research project was to examine whether the use of portable, digital devices such as mobile phones to supply interactive interpretation material could provide an enhanced experience for the visitor to an archaeological site. I set out to design an interactive framework that provided the visitor with both the archaeological evidence and the various interpretations derived from it. I wanted to investigate whether presenting the evidence in this way could enhance the visitors' understanding of the archaeological evidence while visiting the site.

I selected the site of Wayland's Smithy, a Neolithic long barrow on the Ridgeway in Oxfordshire, as a case study. The site was suitable for three reasons: it is a remote monument with a limited amount of on-site information, it had structures that preceded the presently visible trapezoidal mound, and finally because there are conflicting published interpretations of the ambiguous excavated evidence for the early structures. During the early stages of the project, I worked closely with Susan Westlake, from English Heritage's Properties Research team, who provided key information about the history of the site and its excavations, and the subsequent published interpretations from the evidence.

I created a series of illustrations of three published interpretations of the first oval barrow and mortuary structure revealed by excavations in the 1960s. These were the theories of R.J.C. Atkinson's (1965), Ian Kinnes (1975), and Alasdair Whittle (1991). When seen together the illustrations highlight the conflicting interpretations. I then designed an interactive framework through which the viewer could flick between these illustrations, and could access supporting data and images. For instance, if a viewer wanted to see the evidence on which Atkinson based his interpretation, they could view an original section drawing or plan by hovering the cursor over the relevant area of the illustration.

The next challenge was how to get this material to visitors at the site. I investigated the capabilities of mobile devices, specifically smartphones, and found that the new

Image created by & © Jennie Anderson, 2009

Visualisation of WS1 Interactive being used on a smartphone as part of on-site interpretation at Wayland's Smithy, Oxfordshire

generations of these devices now offer the user internet access to web-hosted media with audio-visual content on a large, clear touch-screen, as well as utilising GPS technology, internal compasses, and augmented reality software. This means that these devices are not only capable of being aware of the user's location, they also know which direction they are facing; consequently they know *what* the user is looking at. By combining clear visual display of interpretation material with augmented reality software, the device enables the user to open a window onto the past, and to experience visual interpretation directly relevant to the aspect of the site that they see before them.

After successful trials on several smartphones, I concluded that this interactive content can be accessed and used by a visitor to a remote archaeological site such as Wayland's Smithy, and this new approach to the interpretation available at a remote archaeological site is, I believe, a fantastic way of augmenting the visitor's experience. At the beginning of the project, delivering this kind of interactive visual interpretation on a device carried in most visitors' pockets seemed like a real challenge; difficult to achieve but with hugely exciting potential for the presentation of archaeological interpretations at a site. I have found that what was thought to be impossible (or at least too expensive and complicated) last year has now become possible, demystified and affordable.

Jennie Anderson

Links

Jennie Anderson, Archaeological Illustration:
www.jennieanderson.co.uk

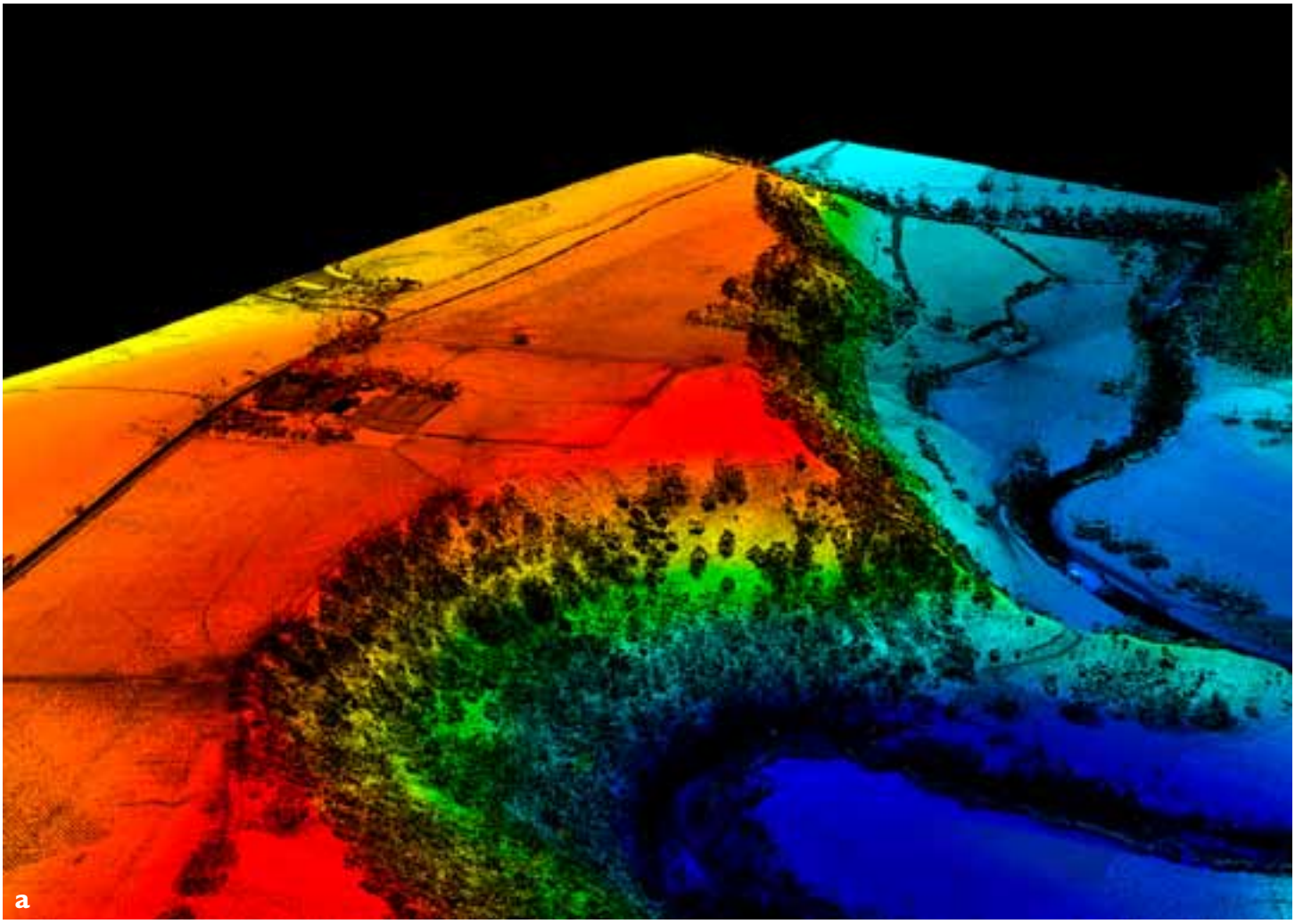
Swindon College:
www.swindon-college.ac.uk

DEVELOPING METHODOLOGIES

Heritage3D: ongoing professional guidance on 3D recording and survey in cultural heritage

A communication project that provides a source of reference on 3D recording techniques for cultural heritage conservation and documentation activities.

Survey techniques such as digital photogrammetry and 3D laser scanning now allow for the accurate and rapid collection of 3D measurements at a variety of scales. Coupled with the ubiquitous increase in computing power and rising user expectations, archaeology and architecture can now call upon these techniques to provide data essential to developing the level of understanding necessary for making key decisions about the management of an artefact, monument or landscape. As a result



a

of the wide application of 3D measurements and the ongoing development of new techniques, there is a need for impartial professional advice to help ensure best value for those commissioning work, and to direct priorities for the future development of 3D survey.

In October 2006 the School of Civil Engineering and Geosciences at Newcastle University completed a two year HEEP supported project entitled "Developing professional guidance – laser scanning in archaeology and architecture". The project, which adopted the working name "Heritage3D", sought to provide guidance to archaeologists, local planning authorities, instrument manufacturers and software developers on the use of 3D laser scanning in the conservation of cultural heritage. The primary aims of this project were to develop and support best practice in laser scanning for archaeology and architecture, and disseminate this best practice to users, along with the education of likely beneficiaries.

A guidance note and revised specification arising from Heritage3D were delivered to English Heritage at the end of 2006. These documents represented the culmination of a number of activities undertaken, however perhaps the most successful element of the project was the establishment and maintenance of the project website (http://www.heritage3d.org) which acted as the project's primary dissemination and information channel. This website became one of the key project deliverables, helping the project to successfully provide guidance on the use of laser scanning to cultural heritage professionals within English Heritage, the UK and around the globe.

Despite the significant successes and impact enjoyed by the previous Heritage3D project and other ongoing activities aimed at widening awareness, there remains a need for continued, specialist and impartial advice and information on the most appropriate three-dimensional measurement techniques to be used in the tasks typically encountered in the conservation and recording of cultural heritage. This is increasingly the case as low cost, commercial grade digital cameras are now capable of being used for relatively high accuracy recording and software companies continue to develop what have been traditionally-specialised three-dimensional measurement techniques, such as photogrammetry, into mass market, consumer applications. Google Inc., for example, now offer a free version of "Sketch-Up", software which allows home users to build 3D models of buildings and structures from digital images. Whilst such software packages are not presented as a high accuracy measurement or recording tools, it is inevitable that the global reach of these companies will stimulate users in many different disciplines, including those in cultural heritage conservation, into asking how such tools might be applied to particular tasks. With the correct professional guidance and understanding such tools could play very useful roles in future conservation activities. With these new, mass market, tools becoming available there is clearly a need to maintain an impartial source of information for professional users. This is also true with respect to specialist tools, such as laser scanning or photogrammetry. With developers continuingly seeking to provide faster, smaller, and cheaper hardware/software systems and with the on-going

Cultural heritage can now call upon three-dimensional techniques such as laser scanning to inform conservation at a variety of scales, as seen here in an airborne laser scan of Birdoswald Roman Fort (a) and a terrestrial laser scan of the 2009 excavation at the same site (b)

The revamped Heritage3d website (right) is now driven by a bespoke content management system (far right)

© English Heritage

© English Heritage

development of specialised techniques, such as waveform laser scanning, keeping professional users informed is vital to achieving best value.

The aim of the next phase of the Heritage3D project is therefore to provide, to English Heritage employees and other professionals engaged in cultural heritage, general news and independent information about all forms of 3D survey and recording, in-depth guidance and discussion on specific applications and techniques, and to provide access to a network of relevant organisations and individuals that could provide information and advice. This differs substantially from the original Heritage3D project in that it will cover all documentation techniques, not just 3D laser scanning. To mark the new beginning of the project, the website has been re-launched and is now driven by a bespoke content management system. The website can therefore now be populated by content from any project associate who is granted appropriate write access, with contributions constantly monitored by the project's executive committee. Moreover, it is anticipated that this more open access approach to web design should provide significant longevity for the website following the formal completion of the Heritage3D project in 2011. Regular updates to the website will provide ongoing interest, and in order to stimulate discussion and raise awareness on specific issues, themed updates to the site will be made twice a year. An editorial board has been appointed to oversee and advise on the work of the project, as well as provide diverse and interesting content to the website. To ensure that the project is not limited to disseminating domestic activity, and to ensure input is received on the very latest international developments, the project is being undertaken in a three-way collaboration between English Heritage (Paul Bryan), Newcastle University (Jon Mills and Simon Abele) and FBK Trento, Italy (Fabio Remondino). Anyone wishing to participate as a project associate is welcome to do so and should contact Jon Mills at j.p.mills@ncl.ac.uk.

Jon Mills and Simon Abele (Newcastle University), Fabio Remondino (FBK Trento, Italy) and Paul Bryan (English Heritage)

Editorial Board Member	Organisation
Paul Burrows	Leica Geosystems
Jim Chandler	Loughborough University
Simon Crutchley	English Heritage
Kieron Niven	Archaeology Data Service, University of York
Doug Pritchard	Glasgow School of Art
Robert Shaw	Discovery Programme, Ireland

A lost fireplace at Apethorpe Hall

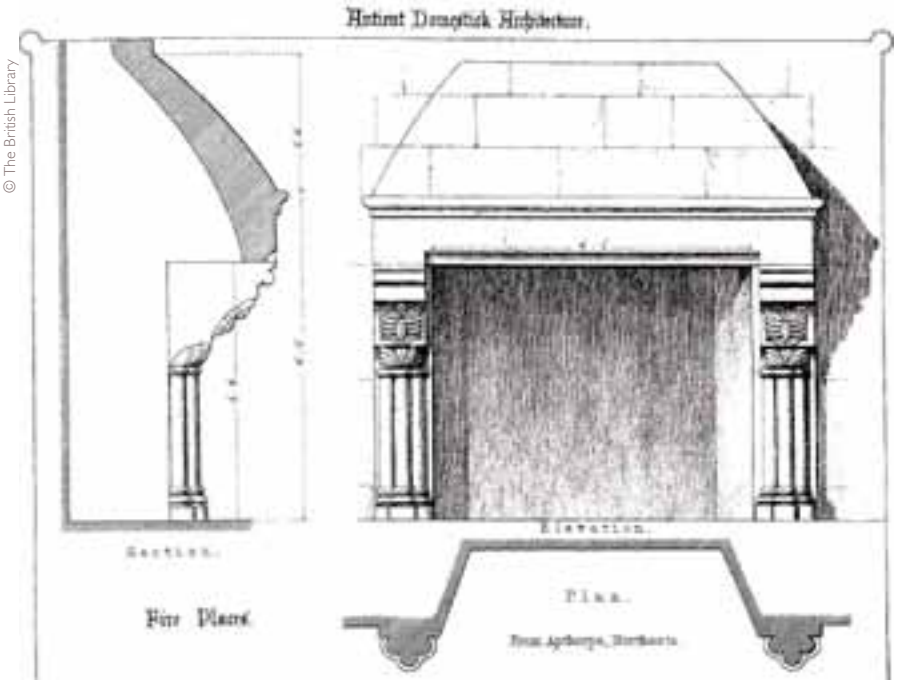
The newly-uncovered evidence of a lost chimneypiece raises questions about the early history of the site.

One of a small number of areas recently opened up at Apethorpe is a section of wall located on the first floor of the west range of the outer, or kitchen, court: an area once home, according to 19th-century sources, to a substantially-sized and finely-ornamented stone fireplace. Characterised by clustered columns supporting foliate corbels, the feature is known to have been relocated to the core of the house before being discarded during the early 20th century, and the opening-up consequently did not reveal a survival of the masonry proper. However, visible within the stonework of the wall surface was found to be a zig-zag break marking the former position, and confirming the monumental scale, of the projecting ashlar hood. This comprises the only known physical trace of the vanished chimneypiece.

The significance of the fireplace lies in its identification as an authentic work of the 13th century. This attribution was first put into writing by F. T. Dollman and J. R. Jobbins. Surveying the chimneypiece *c.*1859 for the initial volume of their *Analysis of Ancient Domestic Architecture in Great Britain*, the pair encountered it prior to the extensive changes wrought upon the feature during the later 19th century, and their brief description and accompanying plate are therefore of particular use. Indeed, comparison between the latter engraving and further examples of the hooded chimneypiece type confirms the existence of a close formal and stylistic affinity with those of the mid- to late 13th century. In addition to overall composition, the notably high level of carved detail to the Apethorpe chimneypiece, for example, with foliate mouldings to both the capitals and concave corbels, finds a close ally in the hooded Checker fireplace of *c.*1260 at Abingdon Abbey, Berkshire.

This 13th-century attribution was to be echoed in the sale particulars drawn up for the house somewhere on site towards the close of the 19th century. Composed after, but within memory of, its restoration, these deemed the 'ancient stone fireplace' - and, moreover, the west range within which it had been situated – as being dateable to the reign of Henry III (d.1272). That the otherwise undocumented fireplace might be original to Apethorpe prompts the consideration of a series of interesting possibilities. Archaeological evidence indicates that the present site could have been occupied from the time of the 12th century, but no remains of an early structure have been identified; accrediting the 13th-century site with the vast, decorated chimneypiece would suggest it to have comprised a manorial complex of some importance. In this context, the owners and occupants of Apethorpe during the period are of particular note. The first of these, one Randolph Brito, or Ralph Britton, was tenant to the crown-held manor for the period 1231-*c.*1281-2. Perhaps more significantly,

Engraving of the fireplace by F.T. Dollman and J. R. Jobbins 1859



Reproduced by permission of Mrs Spicer

Photograph of the fireplace *c.*1888 showing it relocated in the New Dining Room

Apethorpe was subsequently held in dower for ten years by Queen Eleanor of Provence, wife of Henry III and mother to Edward I, and it is not impossible that the chimneypiece is owed to this period of royal association.

Regarding the fireplace as a feature original to the manor would, furthermore, go a little way towards explaining its somewhat incongruous presence in the west range of the second court, a section of the building thought to have functioned as a service range from the time of its erection during the late-1470s; its insertion into the range could thus be understood primarily in the light of preservation rather than display. Whether or not the chimneypiece existed there by the 17th century is inconclusive. Instead, the earliest evidence of any certainty derives from a floor plan of 1858. Illustrating the fireplace as being sliced into two parts by a dividing wall, with a pair of smaller grates inserted beneath the partitioned hood, this suggests that by at least the mid-19th century the chimneypiece had been within the west range for some time.

The hooded feature must still have been in this partitioned state when surveyed by Dollman and Jobbins during the following year. However, its publication comprises one of a number of indications that interest in the fireplace was beginning to be renewed: between *c.*1858-9 a further hooded chimneypiece, clearly inspired by that within the west range, was designed for the new Front Hall, a now-altered space created by the architect Edward Browning of Stamford within the ground floor of the east range. This was followed *c.*1876 by the elevation of the 'ancient stone fireplace' to a position of greater prominence: its location within the service range was exchanged for the New Dining Room, situated in the south-east corner of the Arkade. It is recorded within the room in a photograph taken *c.*1888.

What the photograph also reveals, however, are the extensive changes that were carried out to the chimneypiece during this relocation. The most significant of these were probably initiated by damage caused during the insertion, or indeed removal, of the dividing wall: the fireplace appears to have been reduced in width by at least two feet, and both the hood and supporting lintel either altered or rebuilt. The carving of the brackets and capitals may also have been renewed, and it was probably as a result of such reworking that Mr. Brassey, acquiring the house in 1904, was sufficiently doubtful of its authenticity as to have the fireplace removed. The New Dining Room, or the Smoking Room, as it had by then become, was instead provided with the present stone fireplace of *c.*1740. Similar in width to the final dimensions of the hooded chimneypiece, but substantially lower in height and more modest in projection, this too appears to have been relocated from elsewhere at Apethorpe. Of the discarded feature, on the other hand, no further record has been found, and it seems likely that the much-altered chimneypiece - as elusive in its removal as in the circumstances surrounding its introduction to the house - was probably destroyed.

Hannah Waugh

The heraldic decoration of Apethorpe Hall

At all times during the history of Apethorpe Hall its owners stamped their identity on the building through the use of their families' heraldry, stressing their lineage or connections through decorative schemes.

Apethorpe Hall features a great deal of heraldic decoration, in stone, glass and plaster. The interpretation of this decoration tells us much about the self confidence of the owners of the Hall, particularly that of the Mildmay and Fane families. At the request of Kathryn Morrison, a small sub-project was undertaken to identify and interpret the heraldic decoration. Two basic heraldic schemes have been identified.

The first of these was that of Sir Walter Mildmay, whose use of his paternal arms, together with those of his wife Mary Walsingham, sister of Sir Francis Walsingham, well known as Elizabeth I's spymaster, survive in carving on the north gateway to the east court, and the fireplace of the Great Chamber. The sculpture on the Great Chamber fireplace is dated 1562, and the scheme of decoration may have beenn in preparation for the visit of Elizabeth I to Apethorpe in 1566.

Mildmay's decoration was overshadowed by the lavish use of heraldry by Francis Fane, 1st Earl of Westmorland (1520-1628), who acquired Apethorpe through marriage to Sir Walter's granddaughter, Mary Mildmay in 1599. Fane's arms, together with those of Mary Mildmay appear over the fireplace in the Old Dining Room in the East Courtyard, Hall Range. Those of Francis Fane demonstrate his pride of lineage – the eight quarterings show the arms of Fane, Nevill of Abergavenny, Despencer, Beauchamp, Fitzalan of Arundel as well as the ancient arms of Clare, Warenne, and Nevill of Bulmer, all of which Fane would have claimed by right of his mother's Nevill ancestry.

Fane was responsible for the building and decoration of the Royal Apartment, used for the accommodation of King James I and VI.

The principal glory of this apartment consists in the armorial plaster ceilings. The King's Chamber itself features the Stuart Royal arms. The ceilings of the two rooms to the west of the King's Chamber, the Withdrawing Chamber and the Great Chamber, feature

Patricia Payne, © English Heritage

The last of the arms in Francis Fane's genealogical sequence, showing the arms of Fane (azure, three gauntlets or) impaling those of Mildmay (argent, three lions azure)

left, middle, Tony Wilmott; *right,* Patricia Payne, all © English Heritage

Above left: The arms of Mary Mildmay, wife of Francis Fane from the armorial panels over the fireplace in the Old Dining Room. The Mildmay arms of her father, Anthony Mildmay, son of Sir Walter, are quartered with those of her mother Grace Sherington

Middle: Arms of Sir Mildmay Fane, 2nd earl of Westmorland over the north gateway to the east courtyard

Right: Armorial glass in the Great Hall showing the impaled arms of Fane and Wellesley-Pole, representing the marriage of John Fane, 11th earl of Westmorland (1784-1859) to Priscilla Anne Wellesley-Pole in 1811

an extraordinary genealogical sequence, showing eight generations of marriages between the wealthiest and most important families of later medieval England. These marriages, culminating in Fane's own, were cumulatively responsible for bringing him enormous wealth and vast estates. The sequence 'faces' westwards, to be legible to those approaching the King's Chamber from this direction. Each generation is represented by the impaled shields of a husband and wife flanked by the crests of the two families. As is always the case the husbands' arms are represented on the dexter side of the shield (that is the left side to the viewer).

On entering Great Chamber, the visitor was presented with an impaled shield showing the arms of Fane impaling Mildmay, the marriage through which Fane acquired Apethorpe and the last generation represented. The viewer then proceeds back in time. The next shield represents Francis' parents, Sir Thomas Fane of Badsell, Kent and Mary Nevill baroness le Despencer, sole heiress of Henry Nevill, lord Bergavenny (m. 1574). The third set of shields and crests, the final one in the Great Chamber, commemorates the marriage in 1555 of Mary Nevill's parents, Henry Nevill, lord Bergavenny, and Frances, daughter of Thomas Manners, earl of Rutland.

The next five generations appear in the ceiling of the adjacent Withdrawing Chamber. They begin with the arms of George Nevill lord Bergavenny, and his third wife, Mary, daughter of Edward Stafford, duke of Buckingham (m. 1519). The father of George Nevill was another George (d. 1492), whose arms, impaling those of his first wife Margaret, daughter and heiress of Sir Hugh Fenne Treasurer of the Household to Henry VI are the fifth in the sequence. The earliest member of the Nevill family in the sequence was Edward, 11th and youngest son of Ralph Nevill, first Earl of Westmorland who married Elizabeth, daughter and heiress of Richard Beauchamp, lord Bergavenny. In the seventh alliance depicted the focus moves to the Beauchamp ancestry of Elizabeth, with the arms of her parents, Richard Beauchamp Lord Bergavenney and earl of Worcester, and Isabel, sister and sole heiress of Richard le Despencer, lord Burghersh (m. 1420). Finally, adjacent to the King's Chamber itself are the earliest arms in the sequence, commemorating the marriage of Richard Beauchamp's father, William, fourth son of Thomas, earl of Warwick to Joan, sister and co-heiress of Thomas Fitzalan, earl of Arundel. The heraldically literate visitor could not help but be impressed by this lineage, which was carefully selected to depict a direct line through a sequence of profitable marriages to heiresses!

Further additions to the heraldic decoration of the house were made by Mildmay Fane, 2nd earl and John Fane 7th earl, the latter commemorating his marital alliance with the Cavendish family. The last member of the family to be commemorated heraldically was John Fane, 11th Earl of Westmorland.

Tony Wilmott

NOTES & NEWS

A round-up of activities and developments showing some of the scope and variety of projects that are ongoing in the Research Department.

HADLEIGH CASTLE, ESSEX

Hadleigh Castle is an enclosure castle on the south Essex coast overlooking Canvey Island and the Thames Estuary. Originally built by Hubert de Burgh sometime between 1215 and 1239, it was taken into royal hands and was redeveloped by Edward III in the 1360s. It was sold in 1551 and soon after most of the internal buildings were systematically demolished. During January 2009 the Archaeological Survey and Investigation team (Cambridge), together with colleagues from the Properties Research team, undertook an earthwork survey of the castle to inform improved management and presentation of the site. In addition to the analytical field survey of the castle's earthworks and its immediate environs, a broader landscape contextualization and new historical research were undertaken.

This work has led to a better definition of the extent of the earthworks surrounding castle and an improved understanding of their chronological and functional development. This has suggested that the substantial role that Edward II played in the castle's development was overshadowed by Edward III's later redevelopments. It is also argued that there are earthwork remains of probable gardens on the south side of the castle that may date from as early as the 13th century, perhaps from the castle's original construction. The wider landscape survey has identified the probable site of the castle mill, probably a tide mill in the marshes to the south of the castle, and reinterpreted the currently accepted mill site as a fish pond.

The full Research Department report has been published and can be downloaded from: http://research.english-heritage.org.uk/report/?14748. An article is to be published in the forthcoming edition of the *English Heritage Historical Review*. We would like to acknowledge the assistance of the Salvation Army for the use of their facilities.

Magnus Alexander and Susan Westlake

Patricia Payne, © English Heritage

Hadleigh Castle from the east

Aerial photograph of a long barrow near Avebury

Damian Grady © English Heritage

NEW LONG BARROW NEAR AVEBURY

This aerial photograph of an unremarkable looking soil mark was taken in April 2009. The site is situated at the end of a prominent ridge 450m to the south east of the henge at Avebury and is aligned NW-SE. The dark curvilinear ditch could be the remains of a Cranborne Chase style long barrow, which are distinguished by side ditches that generally continue around one end of the mound. This one features a gap or causeway across the ditch at its enclosed end, something that is also known at other such sites, such as the Thickthorn Down long barrow. This long barrow so close to Avebury shows the potential for new discoveries in familiar landscapes.

Damian Grady

The project area is outlined in pink and contours are shown in light green (at 5m intervals), with Tarrant Launceston 15 near the centre. The number of recorded archaeological sites has been more than doubled by the analytical aerial survey

TARRANT LAUNCESTON 15: ANOTHER CAUSEWAYED ENCLOSURE?

Aerial photographs taken in 2006 as part of the English Heritage aerial reconnaissance programme prompted a re-evaluation of the oval enclosure known as Tarrant Launceston 15 and its surrounding landscape. The site had been listed as probably Iron Age or Roman in the RCHME's inventory volume (1972) but the new aerial photographs show a number of breaks, or causeways, in the ditch that defines the monument, perhaps indicating that the site is actually a Neolithic causewayed enclosure and considerably older than had previously been thought.

A survey of existing air photographs of the area around Tarrant Launceston 15 provides a landscape context for this enigmatic site. This analysis resulted in a significant amount of new information and illustrates the potential of examining aerial photographs in the archives. Tarrant Launceston 15 sits in

the rolling chalk downland of Cranborne Chase, an area that has long drawn archaeological attention, particularly for its prehistory, however the aerial survey has more than doubled the record of round barrows and known sections of Roman road within the relatively small project area. Previously unrecorded sites for relatively poorly studied periods were also surveyed. These include post medieval water meadows, sheep folds and dewponds, and First World War practice trenches.

The landscape surrounding Tarrant Launceston 15 is not the only part of Cranborne Chase to benefit from recent analysis of archived aerial photographs. Martyn Barber's work at Mount Pleasant (2004) highlighted their potential to show previously unrecognised features at well known sites. Clearly, there is still much to learn about the prehistoric, and later, archaeology of Cranborne Chase and a significant proportion of this information is unacknowledged in aerial photograph collections.

Sharon Bishop

A 'NEW' ENCLOSURE AT MINCHINGTON, DORSET

The enclosure featured here was first recorded from reconnaissance photographs taken by English Heritage's Damian Grady in the summer of 2002. Parts of it had been photographed before – in 1973 by John Boyden and in 1982 by RCHME – but somehow it had escaped the attention of ground-based archaeologists, despite being (a) on Cranborne Chase and (b) rather large, with around a third of its perimeter still visible as earthworks. Measuring over 350 metres across and enclosing around 5.5 hectares of hilltop at Myncen Farm, Minchington, it overlooks a small brook which heads south across the Dorset Cursus and past the assorted Gussage banjo enclosures before joining the River Allen close to Knowlton.

Damian Grady © English Heritage

Tarrant Launceston 15 in 2006. A number of breaks or possible causeways are clearly visible

© English Heritage. NMR 21689/30 ST 9614/17, 17th July 2002

Aerial photograph of the Minchington enclosure

In August 2009, the authors were among a small group of people camping at Myncen Farm whilst undertaking fieldwork at nearby Damerham. While we were there, the farmer and a contractor inadvertently sectioned the enclosure ditch while digging a new pond on the hilltop. Recognising the exposed archaeological feature as something significant, the farmer held up work – at his own expense – while the ditch section was cleaned up and recorded by Helen Wickstead, with the assistance of Martin Green.

The exposed ditch section was 3.95m wide and 1.91m deep and V-shaped in profile. No datable finds were present, and there were no finds at all in the primary fills. The morphology of the cropmark and earthwork remains, and the size and form of the ditch section, along with the setting, might suggest a date in the Late Bronze Age or Early Iron Age, although this is highly speculative at present. It is hoped to carry out further work next summer in order to try and clarify this, among other things. A more detailed account of the site will be featured in the next volume of the Dorset Archaeological & Natural History Society's *Proceedings*.

Martyn Barber and Helen Wickstead

HADRIAN'S WALL WORK PUBLISHED

Archaeology Projects Department and its predecessors have conducted archaeological excavations on Hadrian's Wall since 1976. A new English Heritage book, just published, completes the publication of these projects. Full reports on excavations at the forts of Bowness-on-Solway (Paul Austen, 1988), and Birdoswald (1996-2000), together with excavations on the linear elements of Hadrian's Wall at Crosby-on-Eden (Julian Bennett, 1981-4), Appletree (1999), and Black Carts (1997), and on fourteen of the milecastles on the Wall (1999-2000) are presented. A full catalogue of English Heritage excavations on the Wall appear in an Appendix. Work on recording the fabric of the Wall in the 1980s and 1990s by Alan Whitworth led to an appreciation of the work of Charles Anderson, Ministry of Works charge-hand, in the presentation of the Wall as we see it today. Press reports of Alan's work led to the important discovery of an archive of drawings of the wall in the 1880s by James Irwin Coates, the catalogue of which is published here for the first time.

Tony Wilmott

RESEARCH DEPARTMENT REPORT SERIES: July 2009 – December 2009

2008 SERIES

49. Graham, K and Williams, J, 'Fiskerton, Lincolnshire: Fiskerton Conservation Management Analysis of Modern Copper Samples Buried for 6, 12, 18 and 30 months'
57. Howard, R E, Arnold, A J and Tyers, C, 'Bishopsthorpe Palace, Bishopsthorpe, York: Tree-Ring Analysis of Timbers'
59. Howard, R E and Arnold, A J, 'Pridhamsleigh Manor and Farm, Staverton, Near Ashburton, Devon: Tree-Ring Analysis of Timbers'
64. Small, F, 'Wickham Breaux, Kent: Ring Ditch Survey'
69. Small, F, 'National Mapping Programme: Hadrian's Wall NMP Project Brampton to Birdoswald'
94. Howard, R E, Arnold, A J, Tyers, C and Hurford, M, 'Flore's House, High Street, Oakham, Rutland: Tree-Ring Analysis of Timbers'

2009 SERIES

22. Smith, P, 'Nottingham: The Creation of the City's Identity'
33. Howard, R E and Arnold, A J, 'Bentley Hall, Derby Lane, Hungry Bentley, Near Ashbourne, Derbyshire: Tree Ring Analysis of Timbers'
37. Howard, R E and Arnold, A J, 'Westenhanger Manor Barn, Stone Street, Stanford, Kent: Tree-Ring Analysis of Timbers'
38. Howard, R E, Arnold, A J, Tyers, C and Hurford, M, 'Trerice, Kestle Mill, Cornwall: Tree-Ring Analysis of Timbers'
39. McOmish, D, 'Stratton Park Moated Enclosure, Stratton, Biggleswade, Bedfordshire: A Landscape Survey and Investigation'
47. Howard, R E, Arnold, A J, Tyers, C and Hurford, M, 'Abbey Gatehouse, and Number 1 The Square, Blanchland, Northumberland: Tree-Ring Analysis of Timbers'
48. Howard, R E and Arnold, A J, 'St Anthony's Hall, Peasholme Green, York: Tree-Ring Analysis of Timbers'
49. Howard, R E and Arnold, A J, 'The Manor House, Hall Green Road, West Bromwich, West Midlands: Tree-Ring Analysis of Timbers'
50. Winton, H and Bowden, M, 'East Soar, Devon: Assessment and Survey from Aerial Photographs'
54. Smith, J and Roethe, J, 'Peckham: A Historic Area Assessment'
56. Beesley, E, 'Beddingham, East Sussex: Investigative Conservation of Material'

NEW **PUBLICATIONS**

(Continued from back page)

Pearson, T 2009 *A History of Scarborough*, Chichester: Phillimore and Co. Ltd

Robinson, D E, Mikkelsen, P H & Malmros, C 2009 'Agerbrug, driftsformer og planteressourcer i jernealder og vikingetid (500 f.Kr. – 1100 e. Kr.) (Agriculture, agrarian practices and plant resources in Iron Age and Viking times (500 BC – AD 1100))' *in* B V Odgaard & J R Rømer (eds) *Danske Landbrugslandskaber gennem 2000 år. Fra digevoldinger til støtteordninger (Danish agricultural landscapes through 2000 years. From Celtic fields to agricultural subsidies)*. Aarhus: Aarhus University Press, 117-142

Scull, C 2009 *Early Medieval (late 5th – early 6th centuries AD) Cemeteries at Boss Hall and Buttermarket, Ipswich, Suffolk*. Leeds: Society for Medieval Archaeology Monograph **27**

Scull, C 2009 'The Human Burials' *in* S Lucy, J Tipper and A Dickens *The Anglo-Saxon Settlement and Cemetery at Bloodmoor Hill, Carlton Colville, Suffolk*. Cambridge: East Anglian Archaeology **131**, 385-426

Tyers, C, Sidell, J, van der Plicht, J, Marshall, P, Cook, G, Bronk Ramsey, C, and Bayliss, A 2009 'Wiggle-matching using known-age pine from Jermyn Street, London, UK'. *Radiocarbon* **51**, 385-396

Watson, J 2009 Contributions to the finds text *in* D H Evans & C Lovelock *Life and Economy in Early Medieval Flixborough c. AD 600-1000: The Artefact Evidence*. Excavations at Flixborough Vol **2**, Oxbow books, Oxford

Wilmott, T (ed), 2009 *Hadrian's Wall: Archaeological Research by English Heritage, 1976 – 2000* (English Heritage: Swindon)

Wilmott, T, 2009 'Introduction: English Heritage research on Hadrian's Wall, 1976 – 2000', in Wilmott, T (ed) *Hadrian's Wall: Archaeological Research by English Heritage, 1976 – 2000* (English Heritage: Swindon) 1-7

Wilmott, T, 2009 'The Hadrian's Wall Milecastles Project, 1999-2000', in Wilmott, T (ed) *Hadrian's Wall: Archaeological Research by English Heritage, 1976 – 2000* (English Heritage: Swindon), 137- 202

Wilmott, T, 2009 'Towers and spies on Chinese and Roman frontiers', in W S Hanson (ed), *The Army and Frontiers of Rome; papers offered to David J Breeze on the occasion of his 65th birthday, and his retirement from Historic Scotland*, (Jour Roman Archaeology: Portsmouth, Rhode Island), 128-133

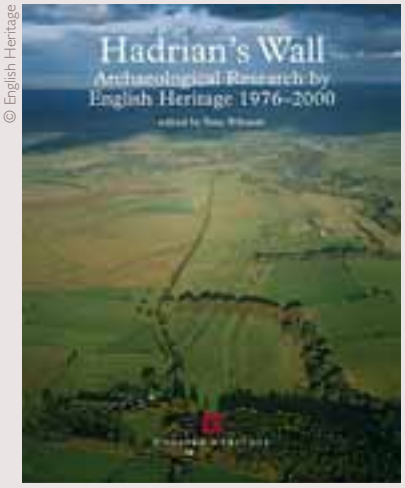
Wilmott, T, 2009 'New excavations at the amphitheatre of the legionary fortress of Chester (*Deva*), Britain', in A Morillo, N Hanel and E Martín (eds), *Limes XX, estudios sobre la frontera Romana* (Ediciones Polyfemo: Madrid), 1157-1163

Wilmott, T, 2009 Contributions on Milecastles 9, 10, 14, 17, 19, 62, 63, 69, 70, 71, 78, 79, and on Birdoswald, in N Hodgson (ed), *Hadrian's Wall 1999-2000*, (Titus Wilson: Kendal), 91-2; 94-95; 127-30; 133; 162-3; 150-51; 156

Wilmott, T and Bennett, J, 2009 'The linear elements of the Hadrian's Wall complex; four investigations, 1983-2000', in Wilmott, T (ed) *Hadrian's Wall: Archaeological Research by English Heritage, 1976 – 2000* (English Heritage: Swindon), 72-136

Wilmott, T, Cool, H and Evans, J, 2009 'Excavations at the Hadrian's Wall fort of Birdoswald (*Banna*), Cumbria: 1996-2000', in Wilmott, T (ed) *Hadrian's Wall: Archaeological Research by English Heritage, 1976 – 2000* (English Heritage: Swindon), 203-395

Cover of the Hadrian's Wall volume



57. Dungworth, D and Loaring, A, 'Shaw House, Newbury, Berkshire. An Investigation of the Window Glass'
58. Dungworth, D, 'Redcliff, Welton, East Yorkshire. An Examination of the Slag'
59. Bowden, M, 'Dolebury Hillfort, Churchill, North Somerset: Analytical Earthwork Survey'
61. Howard, R E, Arnold, A J, Tyers, C and Hurford, M, 'Ulnaby Hall, High Coniscliffe, Darlington, County Durham: Tree-Ring Analysis of Timbers'
62. Smith, P, 'Supplement to Audley End Stables'
64. Linford, NT, Martin, L and Holmes, J, 'Grimes Graves, Norfolk: Report on Geophysical Survey, November 2007'
66. Howard, R E and Arnold, A J, 'St Mary's, Feltwell, Norfolk: Tree-Ring Analysis of Timbers'
67. Hill, N, 'Apethorpe Long Gallery Panelling, Apethorpe Hall, Apethorpe, Northamptonshire: Recording and Analysis Report'
69. Bridge, M C and Miles, D W H, 'Church of St Helen and St Giles, The Broadway, Rainham, London Borough of Havering: Tree-Ring Analysis of Timbers from the South Chancel Door'
70. Howard, R E and Arnold, A J, 'St John The Baptist Church, Eldersfield, Malvern Hills, Worcestershire: Tree-Ring Analysis of Timbers'
72. Bowden, M, 'Little Doward, Ganarew, Herefordshire: Analytical Earthwork Survey of the Hillfort and Rapid Landscape'
73. Oakley, M, 'Hadrian's Wall World Heritage Site, National Mapping Programme Project'
74. Howard, R E and Arnold, A J, 'St Mary's Church, Sarnesfield, Herefordshire: Tree-Ring Analysis of Timbers'
76. Payne, A W, 'Queen Camel, Somerset: Report on Geophysical Survey November 2008'
78. Howard, R E and Arnold, A J, 'Black Middens Bastle, Greenhaugh, Northumberland: Tree-Ring Analysis of Timbers'
80. Bridge, M C, 'St John's Church, Oxborough, Norfolk: Tree-Ring Analysis of Timbers from the Roof of the Bedingfield Chapel'
81. McQueen, M, 'Barbury Castle Environs: Air Photo Survey and Analysis'
85. Howard, R E and Arnold, A J, '14 The College, Durham: Tree-Ring Analysis of Timbers'

NEW PUBLICATIONS

Barrett, J C and McOmish, D 2009 'The early Iron Age in southern Britain: recent work at All Cannings Cross, Stanton St Bernard and East Chisenbury, Wiltshire' *in* M-J Roulière-Lambert (ed) *De l'âge du Bronze à l'âge du Fer en France et en Europe occidentale (Xe –VIIe siècle av. J.-C.)*: 565-75. Actes du XXXe colloque international l'AFEAF, co-organisé avec l'APRAB

Bayley, J 2009 'The discovery of precious metal refining in Roman Chichester' *in* J-F Moreau, R Auger, J Chabot, and A Herzog (eds) *Proceedings of the 36th International Symposium on Archaeometry*. Québec: CELAT, Université Laval (Cahiers d'Archéologie du CELAT 25), 425-432

Bayley, J 2009 'Early medieval lead-rich glass in the British Isles – a survey of the evidence' *in* K Janssens, P Degryse, P Cosyns, J Caen and L Van't dack (eds) *Annales du 17e Congrès de l'Association Internationale pour l'Histoire du Verre*. Brussels: University Press Antwerp, 255-260

Bayley, J and Fell, V 2009 'Making gold-mercury amalgam: the evidence from Southampton, England'. *Proceedings of the 2nd International Conference on Archaeometallurgy in Europe*. Milan: AIM, 397-401

Bayley, J 2009 'Scientific examination of the 'gold-in-glass' type beads' *in* S Hirst and D Clark *Excavations at Mucking: Volume 3, The Anglo-Saxon cemeteries*. London: Museum of London Archaeology, 413-414

Bayley, J and Watson, J 2009 'Emerging from the appendices: The contribution of scientific examination and analysis to medieval archaeology' *in* R Gilchrist and A Reynolds (eds) *Reflections: 50 years of medieval archaeology, 1957-2007*. Leeds: Maney, 363-381

Bayliss, A, Marshall, P, and Waddington, C 2009 Radiocarbon dates in D G Passmore and C Waddington, *Managing Archaeological Landscapes in Northumbria*. Till Tweed Studies, Volume **1**. Oxbow Books, 185-187, 200-201, 216-217, 246-248 and 259

Biek, L with Bayley, J and Hirst, S 2009 'The soil silhouettes' *in* S Hirst and D Clark *Excavations at Mucking: Volume* **3**, *The Anglo-Saxon cemeteries*. London: Museum of London Archaeology, 12-18

Bowden M C B 2009 'From antiquarianism to archaeology: Pitt Rivers and his contemporaries' *in* H Sebire (ed) *Pursuits and Joys: Great Victorian Antiquaries and Intellects: the Lukis family of Guernsey and their* contemporaries. Cambridge Scholars Publishing, 95-104

Bowden, M, Brown, G and Smith, N 2009 *An Archaeology of Town Commons in England: 'a very fair field indeed'* EH: Swindon

Brain, C and Dungworth, D 2009 'Late 17th century English crystal glass' *in* K Janssens, P Degryse, P Cosyns, J Caen, L Van't dack (eds) *Annales of the 17th Congress of the International Association for the History of Glass 2006, Antwerp*. Brussels: University Press Antwerp, 363–369

Brodie A 2009 'Best … end-of-pier attractions'. *Coast*, September, 26-28

Bryan, P 2009 "Three dimensional rock-art recording – a 'lower-cost photogrammetric approach", Chapter provided within new publication *Carving a future for British Rock Art*. Oxbow: Oxford 2-10

Canti, M G 2009 'Experiments on the origin of ^{13}C in the calcium carbonate granules produced by the earthworm *Lumbricus terrestris*'. *Soil Biology and Biochemistry* **41**, 2588-2592

Cocroft, W D 2009 'Dan Dare's Lair – the industrial archaeology of Britain's post-war technological renaissance'. *Industrial Archaeology Review* **XXX1:1**, 5-19

Cocroft, W D 2009 'Recording landscapes of war' 18-26 *in* N Forbes, R Page and G Perez (eds) *Europe's Deadly Century* English Heritage: Swindon

Cruise, G M, Macphail, R I, Linderholm, J, Maggi, R, and Marshall, P D, 2009 'Lago di Bargone, Liguria, N. Italy: a reconstruction of Holocene environmental and land-use history'. *The Holocene*, **19**, (7), 987-1003

Dungworth, D and Loaring, A 2009 'The composition of late 16th century to early 19th century window glass: the Shaw House Project' *in* K Janssens, P Degryse, P Cosyns, J Caen, L Van't dack (eds) *Annales of the 17th Congress of the International Association for the History of Glass 2006. Antwerp*. Brussels: University Press Antwerp, 377–382

Hamilton, W D, Marshall, P, Bronk Ramsey, C, Cook, G, and McCormac, G 2009 The radiocarbon results in S Lawrence and A Smith *Between Villa and Town: excavations of a Roman roadside settlement and shrine at Higham Ferrers, Northants*. Oxford Archaeology Monograph No **9**,140-145

Howard, A J, Gearey, B R, Fletcher, W, Hill, T, and Marshall, P 2009 'Radiocarbon dating, alluvial chronologies and the reconstruction of palaeoenvironmental events: the validity of single date correlations'. *Journal of Archaeological Science* **36**, 2680–2688

Jecock, M 2009 'A Fading Memory: The North Yorkshire Coastal Alum Industry in the Light of Recent Analytical Field Survey by English Heritage'. *Industrial Archaeology Review* **XXXI: 1**, 54-73

Karsten, A 2009 'First Aid for Finds recovered during aggregate dredging'. *DREDGED UP from the past*, Issue **5**, Autumn 2009

Leary, J 2009 'Perceptions of and Responses to the Holocene Flooding of the North Sea Lowlands'. *Oxford Journal of Archaeology* **28(3)**, 227–237

Linford, N, Linford, P, Martin, L and Payne, A 2009 'Stepped-frequency GPR survey with a multi-element array antenna: Results from field application on archaeological sites. ArcheoSciences, *revue d'archéométrie Mémoire du sol, espace des homes*, 33-2009, 317-319

Marshall, P 2009 'The radiocarbon dating of the pit alignment and the timber hall' *in* H K, Murray, J C Murray, and S M, Fraser *A Tale of the unknown unknowns: a Mesolithic pit alignment and a Neolithic timber hall at Warren Field, Crathes, Aberdeenshire*, Oxbow, 72-80

Marshall, P D 2009 'Radiocarbon determinations' *in* H Wallis and S Anderson *A Medieval Cemetery at Mill Lane, Ormesby St Margaret, Norfolk*, East Anglia. Archaeology Monograph **130**, 28-29

Marshall, P, Hamilton, W D, van der Plicht, J, Bronk Ramsey, C, Cook, G, and Goslar, T 2009 Scientific dating (p62-81) *in* M G Beamish Island visits: Neolithic and Bronze Age activity on the Trent Valley Floor, Excavations at Egginton and Willington, Derbyshire, 1998-1999. *Derbyshire Archaeological Journal* **129**, 17-172

Marshall, P, Tipper, J, Bayliss, A, McCormac, F G, van der Plicht, J, and Bronk Ramsey, C 2009 Absolute dating *in* S Lucy, J Tipper and A Dickens, *Bloodmoor Hill, Carlton Colville*. East Anglian Archaeology Monograph **131**, 316-329

Marshall, P, Tipper, J, Bayliss, A, McCormac, F G, van der Plicht, J, and Bronk Ramsey, C 2009 Radiocarbon dating *in* S Lucy, J Tipper and A Dickens, *Bloodmoor Hill, Carlton Colville*. East Anglian Archaeology Monograph **131**, 409-410

Mays, S 2009 'A Scapula Deformity in Two Burials From Mediaeval England'. *International Journal of Osteoarchaeology* **19**: 642-651

Mays, S 2009 'The Effects of Socioeconomic Status on Endochondral and Appositional Bone Growth, and the Acquisition of Cortical Bone from 19th Century Birmingham, England'. *American Journal of Physical Anthropology* **140**: 410-416 (2009, authorship Mays, Ives & Brickley)

Mays, S 2009 'Mycobacterium leprae Genotype Amplified from an Archaeological Case of Lepromatous Leprosy in Central Asia'. *Journal of Archaeological Science* **36**: 2408-2414 (2009, authorship Taylor, Blau, Mays, Monot, Lee, Minnikin, Besra, Cole & Rutland)

McParland, L C, Hazell, Z, Campbell, G, Collinson, M E, Scott, A C 2009 'How the Romans got themselves into hot water: temperatures and fuel types used in firing a hypocaust'. *Environmental Archaeology* **14:2**, 176-88

Menuge A with Dewar C 2009 Berwick-upon-Tweed: Three places, two nations, one town. English Heritage

Minnis J 2009 Contribution to P Leach & N Pevsner, *Buildings of England: Yorkshire West Riding: Leeds, Bradford and the North*. Yale University Press, New Haven & London

Morrison, Kathryn 2009 'Shops and Stores'. *Oxford Companion to Architecture*. OUP

Newsome, S 2009 'Suffolk's defended shore and beyond: The use of military aerial photographs in systematic archaeological survey in England' *in* B Stichelbaut, J Bourgeois, N Saunders & P Chielens (eds) *Images of conflict Military aerial photography and archaeology*. Cambridge Scholars Publishing: Newcastle upon Tyne, 241-258

(Continued on page 31)

If you would like this document in a different format, please contact our Customer Services department:
Telephone: 0870 333 1181
Fax: 01793 414926
Textphone: 01793 414878
E-mail: customers@english-heritage.org.uk