IN TOUCH

Issue 43

Oxford Archaeology Review 2016/17

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oxfordarchaeology

Welcome to In Touch

Oxford Archaeology is committed to making a positive contribution to knowledge about the past, and to communicating these results to the public at large as well as to other researchers. We believe that this provides both best value for the funding invested in archaeological work, and a legacy for future generations. The National Planning Policy Framework, introduced by the Government in 2012, focuses on the importance of gaining archaeological knowledge and understanding from our work, this being 'the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them' (DCLG 2012, 50). It moves us away from the previous Planning Policy Guidance 16 (1990) world of 'preservation by record'; we are more than data gatherers.

Even though we have a proud record of publishing our results, making client reports available on our website and engaging community groups in our work, we are aware that we produce a huge amount of wonderful information (as evidenced in this and previous reviews) that is not being used to best effect. John Barrett reflects on this issue in his piece below. But we also know that we undertake a lot of our work in a very routine way, either because of client/curatorial constraints, or because it is just much easier to follow the familiar conveyor-belt, process-driven systems we are used to. Changing this status quo throws up significant challenges, as John discusses.

At OA, we have embarked upon a review of all our processes in order to achieve better research outcomes from our work. By improving and changing our practices, and by being more efficient, we aim to ensure that our resources are devoted to maximising our efforts to understanding the past. Sometimes we will have to make difficult choices: what to dig and what to leave; what to recover and what to discard; what to analyse and what to leave for future researchers; and how to do this. It has ever been thus, but failure to grasp the nettle will lead to increasingly pertinent questions about why we are spending so much money on replicating past results. We must demonstrate that we do, indeed, provide value for money, a benefit that the public appreciates and, following NPPF, a richer understanding of how we came to create the places and communities in which we live and flourish.

Gill Hey
CEO, Oxford Archaeology

The Research Committee

Our Research Committee is instrumental in helping us form new ideas, policies and procedures, and in backing us in our endeavours to put new methods into practice.

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Retired Director of the Centre for Interdisciplinary Artefact Studies and Reader in Roman Material Culture, Newcastle University

John Barrett (Trustee)

Emeritus Professor, Department of Archaeology, University of Sheffield

Nick Barton (Research Committee)

Professor and Lecturer in Palaeolithic Archaeology, University of Oxford

Martin Bell (Research Committee)

Professor in Archaeological Science, University of Reading

John Blair (Research Committee)

Professor of Medieval History and Archaeology, The Queen's College, University of Oxford

Richard Bradley (Chair of the Research Committee)

Emeritus Professor of Archaeology, University of Reading, and Chair of the Research Committee

David Breeze OBE (Research Committee)

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Senior Investigator and Team Manager, Historic England

Anwen Cooper (Research Committee)

Post-doctoral Research Assistant, EngLaId Project, University of Oxford

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Visiting Research Fellow, University of Reading, Honorary Fellow, University of Oxford

Jan Wills (Trustee)

Historic Environment Consultant and Chair of CIfA

In this issue

The theme of this review edition of In Touch is 'Maximising public benefit'. We reveal how we are working to deliver a more efficient service, while increasing research and public value. We present a roundup of our outreach and publications, and share some of the highlights of our work both in the field and the office from the past 12 months.






REVIEWING WHAT WE DO

Over the past few months, we have been critically examining our policies and procedures to identify where we can focus more effectively on gaining knowledge and delivering research and public benefit.

Our review looked first at our finds collection policy, the environmental archaeology policy and sampling guidelines and post-excavation assessments. More recently we have turned to how we deal with animal bones, human remains, publication and digital archiving.

This feature is introduced by John Barrett, Emeritus Professor in the Department of Archaeology at the University of Sheffield and one of our Trustees and Research Committee members, who discusses the challenges of working in the sector and how we can change the way that archaeology is done for the better.

We then take a look at some of the policies and procedures that have been reviewed, and highlight why the review has been necessary and how the changes will help deliver results that will save our clients time and money and increase the research and public value of our work.

DELIVERING BENEFIT

The challenge faced by Oxford Archaeology (OA) is to increase the value of its work given the financial constraints within which it necessarily operates. This involves increasing the efficiency of its operations for its clients, increasing an understanding of the past whilst making this understanding available to the wider public, and increasing the career opportunities and rewards for those who work for OA. I have doubts that current procedures can deliver on these key requirements. This is because archaeological investigations are currently divided between, on the one hand, the client-funded field and specialist investigation of formation processes achieved by recording patterns of material deposition and reporting upon them in 'grey literature' and publications and, on the other hand, 'syntheses' of these results which, when they occur, are paid for by research funding, are designed to increase our understanding of the historical mechanisms that generated those formation processes, but is not necessarily undertaken within OA.

The lack of any established line of feedback between these two kinds of investigation means that field investigations, and those who undertaken them (and the curators who often design them), seem to be disconnected from the wider procedures aimed at increasing historical understanding. This may well result in fieldwork generating redundant data (at some expense to the client) whilst failing to target enquiries into new lines of historical understanding. It might also fail to enhance both the working environment within OA and the ease with which historical information is made available to the wider public.

Excavation at Heathrow Airport by Framework Archaeology, a joint venture between OA and Wessex Archaeology from 1998 to 2015. The collaboration was notable for its innovative approach to excavation and recording, which was developed by John Barrett and Gill Andrews

I suggest one option would be to realign field procedures towards the investigation of historical mechanisms, instead of limiting these procedures to the establishment of formation processes. On the face of it this sounds like adding an additional task, and therefore an additional cost, to field investigations. However, to counter this any realignment of field procedures must demonstrate that they will deliver benefits to clients, OA staff, and the wider public.

Is this possible? My optimistic response to this question is based upon the principle that the design of field investigations should be the responsibility of those who will undertake that work. Such designs are likely to evolve during their execution because they must address, and be

relevant to, the investigation of stated historical problems given the kinds of data that become available. They must also be accountable to the client, curators and the wider public. The aim of any such realignment should ensure that field investigations are targeted towards processes of historical understanding, more than towards the cataloguing of deposits and the repetitive collecting of potentially irrelevant data. The implied selectivity, whilst aiming to deliver financial efficiency, is likely to be met with considerable suspicion by the archaeological profession as a whole. But such suspicion is based, I would suggest, upon the false notion that data whose historical relevance is not currently understood will nonetheless contribute to some future historical understanding, a notion that was once embedded in the principle of 'preservation by record'.

By empowering OA staff with the responsibility to develop levels of historical understanding through fieldwork, the reasoning employed in those fieldwork commissions, along with their results, could be relayed to both the archaeological profession and to the wider community through a more extensive range of media than hard-copy reports. Current electronic media can form a bridge between on-site recording and the analytical development and the dissemination of that work to a wider off-site audience. One obvious benefit of such a bridging mechanism would be the feeling of immediate engagement and the enhanced level of understanding of archaeological procedures that could be gained by the wider audience.

The argument for redesigning field procedures is not presented here to throw any doubt upon the considerable achievements of OA in executing archaeological commissions, often under difficult circumstances, and its work in community outreach. Nonetheless, the competitive environment within which OA is operating, with its restricted financial returns, challenges us to develop a more direct, and therefore cost-effective, understanding of historical processes as a way of demonstrating archaeological value to the client and to the wider community (in whose name this work is undertaken), whilst also providing the environment necessary for career development amongst OA's staff.

John C Barrett

ENVIRONMENTAL SAMPLING

OA South has had in-house environmental sampling guidelines for many years, but the process review has allowed for a group-wide examination of these in order to streamline procedures across the organisation in line with national standards.

The aim of the process review for environmental archaeology was fairly straightforward, in theory at least: how to collect more intelligently on site in order to better focus resources on significant site-based, regional and national research questions, but also research avenues prompted by the significance of the material itself. Allied to this was the need to review sample processing methodologies to try to ensure that the material extracted is only that of interest to the various specialists who will be reporting on it, and to streamline the handing over of material to enable the post-excavation processes to proceed more swiftly.

The key to improving efficiency comes down to training – a more informed workforce is able to make more strategic choices. Improving communication at all levels is essential and a central part of this process review. The review has highlighted the need for specialists to visit sites wherever possible and to be more involved in the design of sampling strategies in order to avoid the collection and processing of low value 'routine' samples. Specialists will also be able to provide training on-site during visits.

The standardisation of recording systems across all offices will also enable data to be collected in a manner which is easily accessible to researchers outside OA, as well as our own specialists. Consequently, a new OA database for the recording of animal bone and an archaeobotanical database promoted by Historic England are being trialled.

Rebecca Nicholson (Head of Environmental Archaeology, OA South)

POST-EXCAVATION ASSESSMENT

Post-excavation assessment (PXA) is an important stage in most medium to large excavation projects, carried out after completion of the fieldwork and before the final analysis and publication. The PXA establishes the potential of the excavation archive to contribute to understanding of the past. It also updates the project design – that is, it presents revised research aims for analysis, a plan for meeting these aims, and proposals for dissemination of the results and curation of the archive. Although the basic principles of PXA are well established in guidance from Historic England and other national bodies, in practice varying approaches have been taken to the PXA process. 'Mission creep' can be tempting, with more recording and reporting undertaken than is appropriate at this stage of work. This is problematic, as it limits the ability to focus work most effectively at analysis stage, thus reducing the archaeological value produced by the project. OA's new PXA guidelines and report template aim to ensure that ef-

fort is tightly focused on efficiently assessing the evidence and updating the project design. The guidelines stress that the most important part of the PXA process is producing a well-considered, meaningful set of research aims. This is key if our projects are to fulfil their potential by generating new insights into the past.

Leo Webley (Head of Post-Excavation, OA South)

ANIMAL BONE

Being largely hand-recovered, animal bone is often considered to be a 'find', but unlike many artefacts, the significance of most faunal remains is dependent on assemblage size and context. Large assemblages are usually the most informative, but recovering, storing, reporting and archiving large assemblages are time-consuming and costly. The process review identified a need for specific guidance for animal bone, which has now been produced in draft.

Foremost among the recommendations is that animal bone should be collected with the research aims of the project and regional and period-based research agendas in mind. Assemblages may also prove to have additional, unforeseen, research value, so too prescriptive a collection policy should be avoided. The costs of marking and weighing bone are considerable and most specialists do not require this to be done, especially as marking can obscure important evidence, such as fine tool marks or pathologies. Unfortunately, many museums remain wedded to the idea of marking. Further dialogue is clearly needed, but some savings can be made by only marking bone recommended for retention after the assessment has been completed.

Rebecca Nicholson (Head of Environmental Archaeology, OA South)

OSTEOARCHAEOLOGY

Unlike other finds and environmental categories, archaeological processes relating to human remains are closely governed by legal and ethical considerations. This is reflected in OA's existing policy document for the treatment of human remains in our care, which conforms to national codes and guidance.[1]

The primary aims of the document are to ensure that human remains are treated with the utmost care and respect and in a manner that does not cause offence, and to maximise scientific value. While the spirit and intent of the document still holds, it was drafted almost 10 years ago, so is being reviewed in respect of changes that have taken place in legislative (for example, revised licence application forms), scientific (for example, the more common use of isotopes and DNA), ethical (for example, the increase in destructive sampling), and heritage (the introduction of NPPF) spheres.

The revised policy will also incorporate changes we have made to our processes over the last 10 years, from the

introduction of digital recording (on-site photogrammetry and post-excavation osteology database), to the collection of bone from site and the retention/disposal of small cremation residues. In addition, it will build on our efforts to share our results by making our data more accessible,[2] collaborating on new and innovative research projects,[3] and by engaging the public.[4] While challenging, it is hoped this review will help us in our goal to create and disseminate knowledge about past humans in a highly innovative and effective manner.

Louise Loe (Head of Heritage Burial Services)

For your information:

1 http://oxfordarchaeology.com/images/pdfs/oa%20human%20remains%20policy%20document%20update%20dec%202012.pdf
2 Eg http://pastpeopleoxon.uk/about.php
3 Eg https://www.biorxiv.org/content/early/2017/05/09/136176
4 Eg Wellcome 'Hidden Lives Revealed' exhibition

THE ENVIRONMENTAL TEAM

Inter-office working in environmental archaeology dates back to 2001 when Oxford Archaeology and the Lancaster University Archaeological Unit (now OA North) joined forces, bringing expertise in archaeobotany, palynology and ecology. Since then, the Cambridge office (OA East) has been established, and the archaeozoologists in each office are now also part of the environmental team. Together with our geoarchaeologists, we provide a comprehensive in-house palaeoenvironmental and palaeoecological service across all three offices.

For this short piece we are turning the spotlight on a range of largely archaeobotanical projects undertaken by each of our offices. We look at the role of experimental archaeology to answer questions raised during projects, demonstrate the need for intelligent research-focused sampling on-site to enable multi-proxy evidence to be used, and show how, even in the absence of archaeological artefacts or features, the heritage of a site can be recorded and documented.

Core 3, extracted from turbine location 3, showing contact between organic sediments and mineral sediments

THE WHOLE STORY: THE ADVANTAGES OF MULTI-PROXY ENVIRONMENTAL ANALYSIS

The value of incorporating a wide range of palaeoenvironmental evidence, provided by both our internal team of specialists and our external specialists, cannot be underestimated, especially where a range of feature types containing charred and/or waterlogged deposits exist. The Bay Gateway, a road built to the north of Lancaster by Lancashire County Council and substantially funded by the Department for Transport, is a recent example. The information about the site obtained from analysing a range of evidence, including pollen, fungal spores, waterlogged and charred plant remains, insects, and charcoal, together with animal and fish bone, provided a comprehensive account of the agricultural landscape and the various food and plant-based preparation activities carried out at Howgill Brook, which has now been identified as being part of Beaumont Grange, an estate belonging to Furness Abbey and dating to the 12th-17th century.

Along with the dating results, changes in the environmental data were seen to reflect periods of reduced activity, followed by subsequent shifts in agricultural practices. This was probably linked to significant local and national historical events (for example, the 15th/16th century climatic downturn). Alongside the building and documentary evidence, a complete 'package' was produced, which has provided an extremely detailed account of the life and conditions of this small agricultural settlement in north Lancashire.

The Bay Gateway project exemplifies just how rich the archaeological record can be through proper investment, intelligent sampling and inclusive and creative site narratives. Thankfully, the time of specialist reports being confined to separate sections or (worse still) appendices, is nearly a thing of the past!

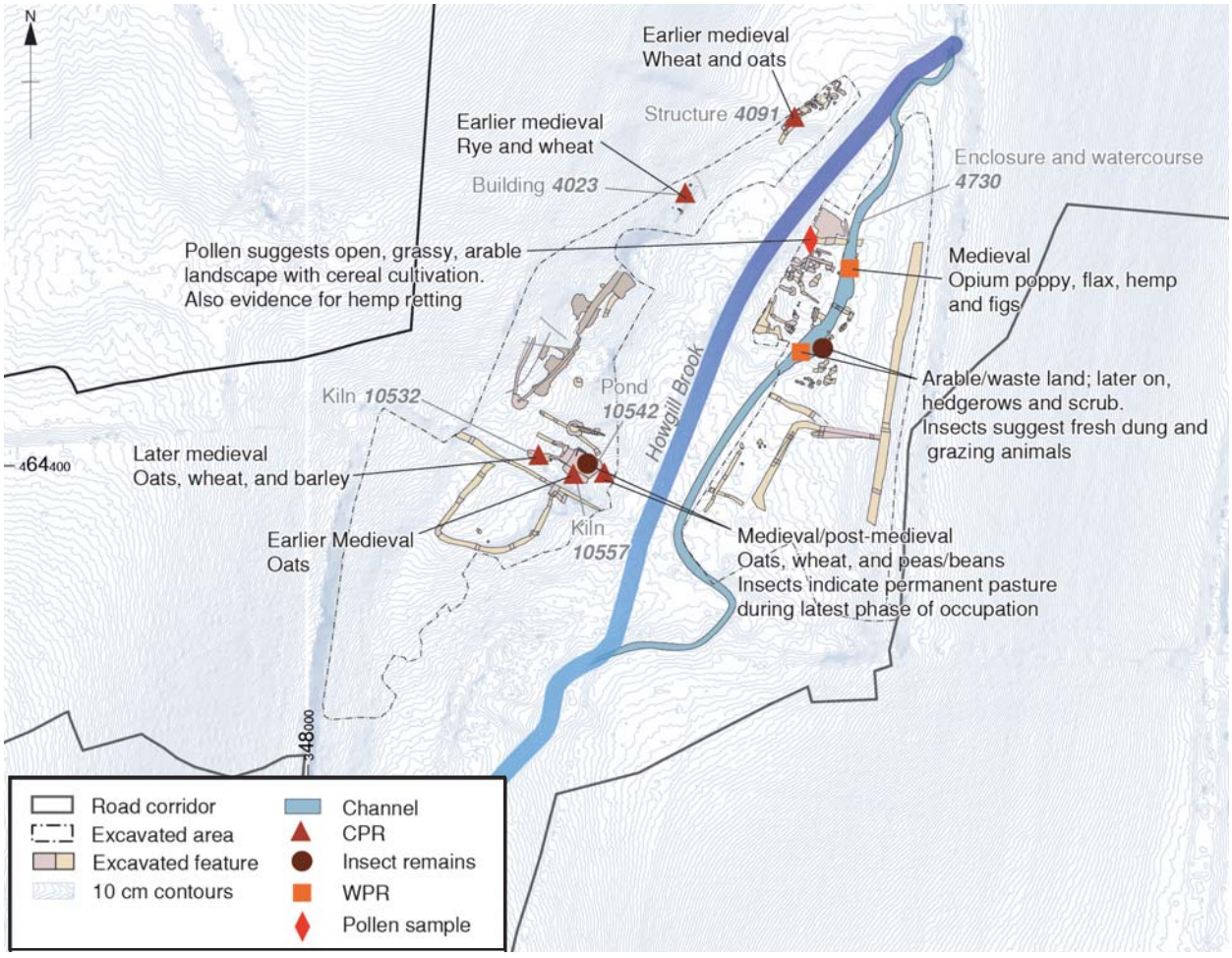
PALYNOLOGY AT BECK BURN, SOLWAY MOSS, CUMBRIA

Solway Moss in Cumbria is situated on an interfluve between the rivers Sark and Esk, 2.5km north-east of the Solway Firth. The site is an area of active peat extraction, resulting in a largely flat, brown and bleak landscape. During 2016, a windfarm was erected by EDF Energy Renewables at Beck Burn on the Moss. As part of the EDF work, OA North collected cores from three of the windfarm turbine locations (where peat had previously been extracted) and one from a nearby area of apparently uncut peat. Although aerial photographs had shown cropmarks indicative of prehistoric settlement in the wider vicinity of the site, there were no known archaeological features. Finds were limited to the recovery in 1991 and 1992 of the remains of the 'Solway cow' and 'Solway sheep', which were dated to the early medieval and post-medieval periods,

View of Beck Burn site, Solway Moss, prior to installation of windfarm

although the peat deposits within which the remains occurred were not contemporary with the finds.

The peat itself is a significant archaeological asset, especially in the absence of any other archaeological evidence. Through detailed palaeoenvironmental (pollen) work, data have been extracted, dated and interpreted to provide a chronology of vegetational and cultural change at the site, revealing that organic sediments as old as the earliest Holocene (*c* 9000 cal BC) and as young as the late medieval/early post-medieval period (*c* 1500 cal AD) are present in the cores.



FOOD OR DRINK? EXPERIMENTAL SPELT GERMINATION

Charred cereal grains are recovered from most archaeological sites where there has been human occupation. This is hardly surprisingly as cereals have been a staple food since they were first cultivated in the Neolithic period, but it is often unclear whether cereals were cultivated for food (bread) or for drink (beer).

Sprouted spelt from Over – showing attached coleoptile (left) and dorsal groove (right)

Archaeobotanists often find charred grains that show obvious signs of germination; that is, where the embryo has developed into a shoot. This shoot may still be attached and it is sometimes possible to see how it has grown along the back of the grain causing a groove. Often the shoot is absent, but the presence of the dorsal groove indicates that the grain has germinated and the germinated grain may also have shrunken sides. Barley is usually thought of as the cereal for brewing, but there is a mounting body of evidence that during the Roman period spelt wheat was malted. At Langford Lane near Bicester (excavated by OA South), and at two Roman sites excavated recently by OA East (at Over in Cambridgeshire and Kettering in Northamptonshire), large deposits of charred cereals have been identified and sampled, producing abundant quantities of germinated spelt grain and detached sprouts.

Germinated grain does not necessarily mean malting, however. Accidental germination can occur quite easily in stored grain that has become damp or even whilst the crop is still in the fields before harvest. It had been thought that an assemblage of deliberately germinated grain would have a high percentage of grains showing evidence of germination and that the degree of sprout development would be uniform. To test this theory, and so better understand archaeobotanical assemblages of sprouted grain, Rachel Fosberry at OA East grew and attempted to germinate several varieties of spelt wheat.

For the first experiment some grain was dehusked and the rest left as hulled grain. After steeping both batches in water overnight, germination started almost immediately, with the embryo emerging after 24 hours. There proved to be very little difference in germination rates between the hulled and clean grain, which was surprising, as it is usually assumed that storage of hulled grain would prevent accidental germination. The second surprise was the different germination rates within each sample. Again, it has been assumed that deliberately germinated grain would produce sprouts of roughly equal length, whereas the opposite seems to be true, with some sprouts developing much more quickly than others. Of particular significance, the experiment confirmed Rachel's hypothesis that the dorsal groove only develops in grain germinated whilst still hulled in a spikelet. This was clearly the case as in the clean, dehusked, grain the sprout grew up away from the grain whereas in the hulled grain the shoot was constricted and grew along the back of the grain to escape from the spikelet, causing the groove. The experiments also demonstrated that even under identical conditions deliberate germination is not guaranteed. Attempts to encourage germination by gentle heating were unsuccessful and smelt vile!

The results of these simple experiments have shown that it is not necessary to dehusk spelt wheat when malting for beer production and that uneven germination cannot be used as evidence that germination was accidental. This was consistent with Rachel's findings from the charred assemblages from Over and Kettering, and strengthens the likelihood that spelt wheat was used for brewing at these sites.

After drying, the malt the grains would be removed from the spikelets, along with the developing coleoptiles and roots, and the waste products most likely burnt as fuel. This is what we see at Langford Lane, where along with charred spelt grains showing the signs of germination within the spikelet there were charred deposits rich in detached coleoptiles and cereal chaff.

IN OTHER NEWS

Apart from the policy and procedures review, we have been investigating better ways of standardising our data to make them more accessible between offices and nationally. This has been achieved by the use of new databases to record both archaeozoological and archaeobotanical data, in the latter case utilising the ArboDat database now widely used across Europe and by Historic England.

Denise Druce, Rachel Fosberry, Julia Meen, Rebecca Nicholson and Mairead Rutherford

ALLER, SOMERSET

Last December, a team from OA South completed trial trenching and targeted excavation just west of the village of Aller, next to the Somerset levels. The work was commissioned by British Solar Renewables ahead of the construction of a new solar farm, and focused on two enclosures that had been identified by an earlier geophysical survey.

The larger of the enclosures had a rectangular plan, with a southerly entrance, and was defined by a boundary ditch, which contained early to middle Bronze Age pottery, and was overlain by a Roman trackway. Within its interior was a scattering of postholes, which may represent internal divisions, as well as a few small pits. Interestingly, one of the pits produced a pierced, worked stone object, a single fragment of animal bone, and a pot base, which may represent an intentionally placed deposit. Similarly, a second pit, near the enclosure's entrance, contained the near-complete skeleton of a cow. It is possible, therefore, that this enclosure functioned as a meeting place or corral.

The smaller enclosure differed from its counterpart in that it was square and was bounded by a continuous ditch containing early Bronze Age pottery. Importantly, at its centre were three cremation burials, two of which contained animal bone suggesting that they were associated with pyre goods. The cremation burials were all dated to between 1960 and 1760 cal BC, and represent the remains of three adults, of whom two are likely to be female. There are no known parallels with this type of mortuary enclosure from this date. Two round barrows in the immediate vicinity of the site have carbon dates either side of the Aller Court enclosure.

Martyn Allen and Gerry Thacker

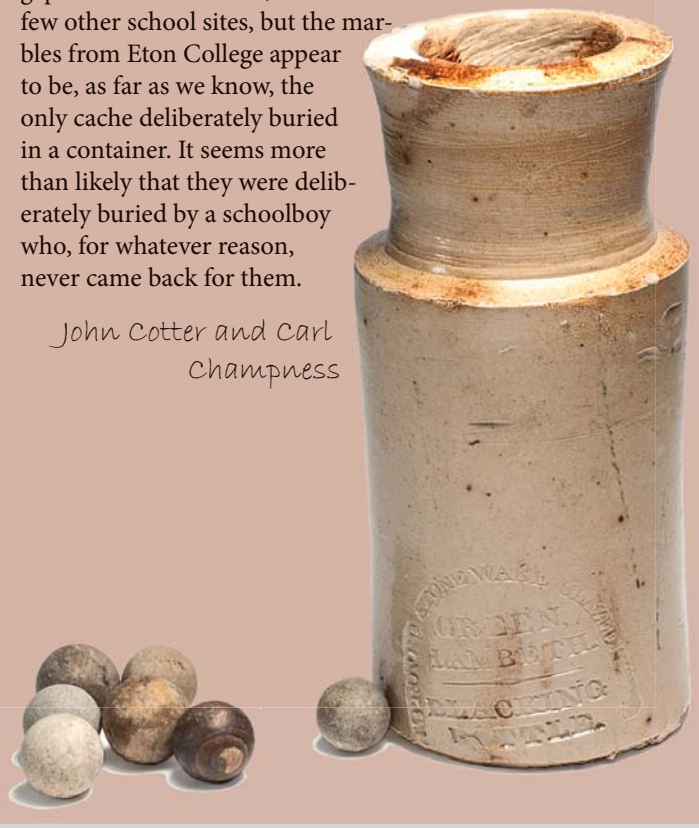
A CACHE OF MARBLES UNEARTHED AT ETON COLLEGE

An unexpected discovery was made during the resurfacing of the courtyard of Eton College in 2016. When workmen lifted a flagstone within the 17th-century colonnade as part of new drainage works, they uncovered a stoneware bottle, which seems to have been deliberately buried in a small pit dug into the rubble underlying the paving. A team from OA South was called in to investigate.

Manufactured by Stephen Green of Lambeth, the stoneware blacking bottle has two very closely datable marks which, combined with the presence of an internal glaze, place its manufacture between 1831 and 1834, the middle years of King William IV's reign. Blacking bottles, produced in their millions, were not recycled and were probably disposed of very soon after use, so it is likely that the bottle was buried here not very long after its manufacture. Blacking liquid, made from graphite, was used to blacken and polish boots, iron fireside grates and ovens.

The marbles are all made from very hard, mostly light grey, banded limestone or perhaps from a low-grade marble. Early marbles really were made from marble, hence the name. Glass marbles were produced from about 1850 onwards. Gaming marbles, probably lost over time through gaps in the floorboards, have been found at a few other school sites, but the marbles from Eton College appear to be, as far as we know, the only cache deliberately buried in a container. It seems more than likely that they were deliberately buried by a schoolboy who, for whatever reason, never came back for them.

John Cotter and Carl Champness



NEWARK-ON-TRENT, NOTTINGHAMSHIRE

Urban and Civic Plc began a large-scale development at Newark-on-Trent in August 2016. The development covered an area of 280ha, and aimed to deliver key infrastructure and mixed residential, commercial and communal facilities. Over a period of 12 months, OA North was on site to mitigate the potential impact of the development on the extensive archaeological remains.

Excavations on the east side of Bowbridge Lane identified the remains of a predominantly Iron Age settlement with the discovery of nearly a dozen roundhouses, pits and various other features nested within an extensive system of ditched enclosures and associated land divisions. A large enclosure appears to have formed the focus for significant activity during the Roman period. This phase saw intensive industrial use, with evidence of metalworking and six well-preserved pottery kilns recorded.

West of Bowbridge Lane, excavations were concentrated on a large circular ditched enclosure or potential hengiform monument, about 35m in diameter and provisionally dated to the late Neolithic/early Bronze Age. There is a hint of at least one entrance, and postholes, a gully, and pits were identified within its interior. Some of these features may indicate internal post-built structures, while others were the focus for funerary activity during the Bronze Age; 12 urned and 2 unurned cremation burials were found. A fragment of a socketed stone axe of early Bronze Age date was found in a pit outside the monument, while a beautifully decorated jet plate divider, presumably deriving from a necklace of Bronze Age origin, was collected as a surface find.

A feature of probable Iron Age date, a rather innocuous gully, produced a heavily patinated stone axe. Further chemical analysis of the axe will firmly establish its lithic source, but the axe appears to have been deliberately curated.

Adam Tinsley

CHESTERTON, CAMBRIDGE

OA East was commissioned by Lovell to conduct an excavation in advance of residential development for the Hundred Houses Society, on the outskirts of Chesterton. The site lies adjacent to a known medieval moat, and prior to the work it was anticipated that any archaeology present would be medieval in date. However, it was also suspected that much of this might have been destroyed during the construction of council houses in the 1930s.

Surprisingly, the work indicated that damage from the council houses was restricted, and so clear evidence for medieval activity was present. This comprised boundary ditches and several post-built structures likely to be agricultural buildings at the rear of medieval plots. More surprisingly, the excavations also revealed a dense swathe of Iron Age archaeology. This included ditches that formed parts of small sub-rectangular enclosures dating to the middle and late Iron Age, along with scatters of early Iron Age pits. These pits contained pottery, a relatively large number of sawn antler fragments and well-preserved animal bone that may represent 'ritual' deposits. Indeed, some confirmation for this was provided by articulated remains of at least six animals, including sheep, dog and pig, that had been carefully crammed into one of the pits.

Taken together, these Iron Age remains were clearly part of a larger settlement extending beyond the footprint of the development site. They are nonetheless an important discovery for this suburb of Cambridge, particularly as they represent the earliest, significant settlement yet to be discovered in Chesterton.

Matt Brudenell and Andy Greef

GRAVEN HILL, OXFORDSHIRE

OA South was at Graven Hill, near Bicester in Oxfordshire towards the end of 2016 and in 2017 to carry out an excavation for the Graven Hill Village Development Company (part of Cherwell District Council) in advance of the UK's largest self-build development.

The results were somewhat low-key to begin with. The team uncovered a Roman field system in use during the 2nd century AD, which, though not particular remarkable, adds to our growing knowledge of the Roman landscape in the Bicester area. This field system was probably associated with a contemporary Roman structure with evidence of *opus signinum* floors identified some 500m away during an earlier evaluation. Further excavation uncovered evidence for a late Iron Age settlement characterised by, among other features, ditches, pits, postholes and enclosures.

More spectacular, and rather unexpected, was the discovery of the remains of a deserted medieval village. Investigation along a road corridor revealed at least four medieval buildings with shallow stone foundations and stone and earth floor levels. One building is terraced, with a raised platform to one side and a stepped foundation or wall that stands several courses high. Another building is circular and of uncertain function, though environmental samples taken from this and other features may provide clues as to the use of this and other buildings. Among the finds are a copper finger ring, a decorated floor tile, and plenty of domestic pottery dating to the 12th and 14th centuries.

Excavation has moved onto another Iron Age site on the higher slopes of Graven Hill. Post-excavation analysis will commence once fieldwork has been completed, and this will doubtless reveal further secrets of this multi-period site.

Steve Lawrence and Becky Peacock

RAF Brampton, Cambridgeshire

Following on from a phase of work in spring 2016 ahead of housing development, OA East returned to RAF Brampton in autumn 2016 and winter 2017 to excavate two additional sites. The excavations, funded by JCAM Commercial Real Estate Property VII Ltd, unearthed a range of medieval features and finds, which may represent parts of a settlement that formed the medieval precursor to nearby Brampton House.

The sites produced evidence of medieval timber structures, gravel extraction pits and enclosures. More significantly, at one of the sites, the remains of a late medieval wooden tank were revealed. This was set within a pit that had been capped in the 16th century when the area was converted to parkland. This tank was composed of stakes and many reused planks derived from carts and structures, and also contained plant remains and pieces of leather. Similarly, at the other site, two late medieval tank-like pits were also revealed. The larger of these was the most intriguing and, although it did not contain a wooden structure, it did contain charcoal, plant remains, and 25 pieces of well-preserved leather, including shoe fragments dating between the 14th and 15th centuries.

Regarding the function of the tanks, analysis of the recovered waterlogged plant remains has proved highly informative. This suggests that the tanks were used for retting hemp, whereby bundles of this plant would have been submerged in the water-filled tanks in order to facilitate the separation of the hemp fibres from the stems.

Kat Blackbourn

SUTTON COURTENAY, OXFORDSHIRE

A team from OA South returned in 2017 to Bridge Farm, a mineral extraction site in Sutton Courtenay with which we have been involved for over a decade. Previous excavations revealed extensive archaeological remains dating from the Upper Palaeolithic to post-medieval period. The most recent excavation, for Hanson Aggregates, focused on a very well defined ring-ditch and a cluster of linear features.

Stripping the topsoil revealed an entrance in the ring-ditch, along with several pits and a three-sided enclosure ditch. Pottery from the pits indicates that the features are of Iron Age origin and likely to have been used as storage pits. The enclosure ditch was also dated to the Iron Age.

The curve in a segment of the enclosure respected the ring-ditch, suggesting that both features were in existence at the same time.

Further excavation of the ring-ditch revealed it to be formed of three intercutting ditches, with an internal diameter of 11m and external diameter of 16m. Two possibly contemporary phases, an inner wide ditch, were superseded by a later steep-sided and deeper ditch. Artefactual evidence from the feature all dates to the Iron Age, but as the lower fills are incredibly sterile, a Bronze Age origin cannot be ruled out.

A small cluster of pits to the west of the enclosure ditch produced Saxon pottery and a small knife. A sunken-featured building with two external postholes was also excavated. Two crouched inhumation burials were also found. Work continues at Sutton Courtenay on a further phase of excavation.

John Boothroyd

NORTH CAVE, EAST YORKSHIRE

During the latter half of 2016, archaeologists from OA North worked alongside a team from Humber Field Archaeology (HFA) to excavate and record several sites in North Cave, East Yorkshire. These excavations, located within a busy sand and gravel quarry, continue a programme of works that HFA has been involved with for over 15 years.

Previous works at the Humberside Aggregates quarry site had uncovered an extensive network of boundary ditches and enclosures relating to an Iron Age/Romano-British 'ladder' settlement. During the expansion of the quarry, HFA was given the opportunity to 'fill in the gaps' with new excavations targeting fields adjacent to prior phases. This new work unearthed large quantities of pottery and other domestic refuse, along with several inhumation burials, the last with remarkably good preservation for a site with sandy soil. One of these burials was apparently interred sitting partially upright in a large rectangular wooden chest or box, with the recovery of hinge straps, corner braces and studs, suggesting that this was a well-constructed receptacle. Chest burials are characteristically mid-Anglo-Saxon, with a date range of the 7th to 10th centuries. Further interesting finds came to light in a large refuse pit which produced parts of leather shoes complete with hobnails, laces and a radiate motif decoration.

Aidan Parker

One of the leather shoes

OXFORD FLOOD ALLEVIATION SCHEME

Oxford Archaeology continued work on the £120m Oxford Flood Alleviation Scheme for the Environment Agency throughout 2017. The scheme, which runs over 5km across flood meadows behind OA South's office at Janus House, includes the excavation of a new channel with flood storage areas, embankments and several new bridges.

The team from Geoarchaeological Services has been supporting the fieldwork team during the excavation of nearly 200 evaluation trenches. The work builds on the previous stages of work that included extensive deposit modelling with boreholes and electromagnetic survey, aimed at building a map of the prehistoric topography buried beneath a thick blanket of river silt.

Evaluation trenching on the floodplain of a major river such as the Thames is particularly challenging. This is in part due to the high-water table, which requires a lot of pumping equipment, and the health and safety implications of opening deep excavations through soft sediments. In addition, the network of buried channels, some dating back thousands of years and associated with archaeology of multiple periods, can be very complex. The range of archaeological remains spans the Mesolithic to post-medieval and includes flint scatters as well as trackways and settlement evidence.

Our geoarchaeologists have been helping to record and interpret the sediments as well as sampling for palaeoenvironmental remains and radiocarbon dating. We have also been using the Cobra power auger to extract cores from deeper sequences when access to trenches has become difficult to water ingress.

Prior to the inception of the scheme in 2008, there were fewer than a dozen reliable data points across the western floodplain; the 3D deposit model now holds several hundred. This scale of data collection is quite unprecedented for the floodplain surrounding Oxford. We expect to add significantly to this database to help assess the potential impact of the scheme on buried archaeology and formulate future mitigation strategies.

Liz Stafford

Iron Age cat paw print

The imprint of the paw of a small animal was discovered on a sherd of pottery from an early Iron Age settlement site at Shinfield in Berkshire during excavations by OA South for CgMs Consulting. The sherd is part of an assemblage recovered from a feature within an intercutting group of shallow, irregular pits.

The print is on a basal sherd of a flint-tempered vessel, which, although of uncertain form, is associated with coarse jars with fingertip decorated rims and shoulders and small carinated bowls with flaring rims. The print was left on a newly-formed vessel, left to dry in an inverted position (the most stable position for an unfired pot). The pottery corresponds stylistically and in fabric to a recently published assemblage from Moore's Farm, a short distance to the west of the Shinfield site, where it was dated to *c* 700-400BC on style and associated radiocarbon dates.

The species of the animal which wondered over the drying pot is uncertain, but is a small mammal. A likely candidate is domestic cat, considering the size and shape of the print, and the absence of claw marks. Wildcat (*felis silvestris*) must be considered, but wildcats are notoriously shy forest dwellers, unlikely to stray into an area of human activity, and the print is too small to have been a mature wildcat. It is also too small for a mature dog or fox, animals which anyway do not retract their claws, and there are no visible claw marks on the Shinfield paw print.

Evidence of domestic cats in Iron Age contexts is uncommon but not unknown. Further research is required, but the Shinfield paw print, if left by a domestic cat, could be amongst the earliest evidence for their presence so far recorded in Britain.

Lisa Brown and Alex Davies

BINCHESTER ROMAN FORT, COUNTY DURHAM

When the Auckland Castle Trust wanted to find out more about the historic environment around Binchester Roman Fort in County Durham before it drew up plans to enhance the visitor and display facilities, it commissioned OA North to undertake the work – a two-phase, non-intrusive archaeological study of some 130 hectares of land.

The first phase of the study, a desk-based assessment, sought to gather, collate and present all known information about the site's historical and archaeological resource, and ran concurrently with the field surveys. In total, 44 archaeological interventions and 86 sites of archaeological or historical significance were identified within the study area or its buffer zone. The majority are certainly or possibly Roman in date and relate to the various phases of occupation within the Roman fort and the associated settlement (vicus) that grew up outside its walls.

Away from the Roman fort and settlement, however, there is comparatively little evidence for sites of potential historical and archaeological importance. The non-invasive field surveys forming phase 2 of the study focused on this less well-known area. LiDAR data were collated and aerial photography using a drone was carried out. The work revealed that features of the late medieval/post-medieval rural landscape are preserved over large areas, principally in the form of ridge and furrow and field boundaries. A magnetometry survey augmented the results of the other survey techniques.

Taken together, the different elements of the project demonstrated the great importance and longevity of Binchester's archaeological and historical resource.

Alan Lupton

HATFIELD FOREST, ESSEX

Hatfield Forest is one of the few remaining medieval Royal Forests. It has been heavily managed, with areas used for coppicing, livestock, farming and hunting. Given the importance of this area, over the winter of 2016/2017, OA East was commissioned by the National Trust to complete the mapping of earthworks in the forest which was started by English Heritage in 1999.

The focus of the survey was four coppices that had become accessible since the original 1999 survey, and also the 26-hectare Wall Wood and 18-hectare Woodside Green, which had recently come into the ownership of the National Trust. Technically, the work proved challenging, as some of the survey areas comprised very dense woodland. However, most features in these areas were surveyed with an error of less than 50cm.

The majority of the surveyed earthworks comprised medieval, and more recent, drainage ditches, dug to enhance the land for growing hardwood. The survey also recorded several sizeable coppice boundaries consisting of banks and ditches up to 2m wide and high. The survey recorded, too, several significant features in Woodside Green and Wall Wood, which related to medieval field systems. These included boundary ditches that been cleaned out and reused as drains. Most of the survey areas were open to the public, and OA East's surveyors regularly consulted local people during the course of the work, who provided many useful insights into the landscape features that were being recorded.

Gareth Rees

TRINITY BURIAL GROUND, EAST YORKSHIRE

In 2015, OA North was commissioned by Balfour Beatty on behalf of Highways England to investigate Trinity Burial Ground in Hull. The cemetery was in use between 1783 and 1861 and the parish registers indicate that it contained many thousands of burials. The archaeological investigation was completed in partnership with Humber Field Archaeology, and aimed to assess burial remains in part of the cemetery likely to be affected by a Highways England scheme to improve Hull's main arterial route (A63) to the docks.

The investigation initially included a survey of the burial monuments within the proposed impact zone, and also enabled the grave headstones to be recorded. After this, 195 gravestones were removed, so that a ground-penetrating radar survey and geotechnical ground investigation works could proceed. This was then followed by archaeological trial trenching. This entailed the excavation of one trial trench across the site of a mortuary building, and three others positioned around the impact zone, where the differences in the surviving grave monuments hinted at variations in the social and economic status of those buried beneath them. As these last three trenches lay within the burial ground proper, sensitivity was a key issue and, as such, during excavation a large tent was used to screen off the work from public view. The density of burials in the different trenches will enable a better mitigation strategy to be devised when the proposed road scheme is commissioned.

Stephen Rowland

CHERRY HINTON, CAMBRIDGE

Recent excavations carried out by OA East in advance of a residential development by Weston Group Plc (commissioned by CgMs Consulting) in Cherry Hinton uncovered a landscape utilised from the Iron Age to the post-medieval period. Occupying an area of higher ground was a long-lived burial ground. First used during the early/middle Roman period, this subsequently became the focus for a richly-furnished early Anglo-Saxon cemetery.

Excavations revealed 126 inhumations predominantly dating to the 6th century AD, with burial continuing until around 560. Although several graves showed evidence of robbing, many still contained an array of finds, including glass and amber beads, brooches, buckles, shield bosses, spears and knives. Several graves also had whole pottery vessels, and one contained a rare glass claw beaker. Although these finds are generally typical of Cambridgeshire, some are more commonly found in Kent or the Continent and are suggestive of a mixed population with some recent migrants. Another notable aspect was the large number of multiple burials, with up to four individuals to a grave, often buried sequentially. The cemetery also included two relatively early examples of Anglo-Saxon barrow burials, in addition to the remains of a rare, possibly contemporary, timber structure.

The post-excavation assessment stage is complete and it is hoped that following analysis the results of this important multi-period site will be published within the East Anglian Archaeology series as an occasional paper or small monograph.

Richard Mortimer and Stuart Ladd

WOOLWICH STONEWARE KILN, LONDON

A team from OA South completed the re-excavation of a 17th-century stoneware kiln at Woolwich, with some of the kiln's original excavators on hand to watch proceedings.

The kiln was originally excavated in 1974. The excavators revealed a brick-built structure and large quantities of bellarmine jugs and other stoneware forms. Apart from being a remarkably well-preserved kiln of its type, it is potentially the earliest stoneware kiln in Britain, having been dated to the mid-17th century.

After the kiln was exposed and recorded, it was covered in protective foam and sealed in a wooden box. It was then lifted in bulk and stored at various locations before being moved to the Greenwich Heritage Centre.

Forty-three years later, OA staff were on site to carefully re-excavate and record the kiln over a period of a week before it was removed completely by Berkeley Homes ahead of redevelopment. Some of the kiln's original excavators were invited to view the work, and shared their experiences of the 1974 dig with the team. The work also generated a lot of interest among pottery specialists, some of whom were also present to observe the excavation.

Post-excavation work followed the fieldwork and addressed questions about the construction, date and duration of the kiln (apparently the kiln was short-lived, with a mass of fused pottery, cracks in the fire bars and firing chamber, and the slumping of the kiln floor hinting at structural failure). A digital 3D model of the kiln was created using data from a photogrammetric survey of the kiln.

Edward Biddulph

3D model of the kiln
https://sketchfab.com/models/5e0309bedac7418ea9b25344c9a2712b

ST JOHN'S COLLEGE, OXFORD

Excavations undertaken by OA South in advance of the construction of the new library extension at St John's College in Oxford revealed a series of dense inter-cutting pits and rubbish deposits that date back to the establishment of the college during the mid-16th century. The pits probably originated as gravel quarries during the initial building works and were then in-filled with rubbish and other materials to help level the ground. The objects found shed light on life at the college during its early years. They include a book clasp, the lower half of a tin-glazed earthenware medicine jar (or albarello), the stem of a glass goblet and a bellarmine jug, as well as moulded stove tiles bearing classical figures that must derive from some high-status accommodation.

An unexpected discovery during the final phases of the dig was a large defensive ditch that follows the line of the parish boundary. The ditch was approximately 5m wide and 3m in depth, with a sharp V-shaped profile. Finds from the upper fills dated to the 11th-13th centuries AD, but the lower part was completely sterile. Clearly the ditch had been silting for a considerable period of time before artefactual material began to be deposited into it, but we do not know how long.

Interestingly, the ditch follows the same alignment as an early medieval bank located on two previous OA investigations at Saville House and New College. This discovery raises the possibility of the presence of a previously unrecognised defensive bank and ditch 300m north of the defences of the Saxon burh and medieval city, a hypothesis previously proposed by David Sturdy but not generally accepted until the new evidence. Possible historical contexts for the defence include the Viking raids between the 9th and early 11th centuries or the civil war known as the Anarchy during AD 1135-1153, although it is alternatively possible that the lower part is an earlier, perhaps prehistoric feature, since the site lies only 100m from the Oxford henge.

Carl Champness and Andy Simmonds

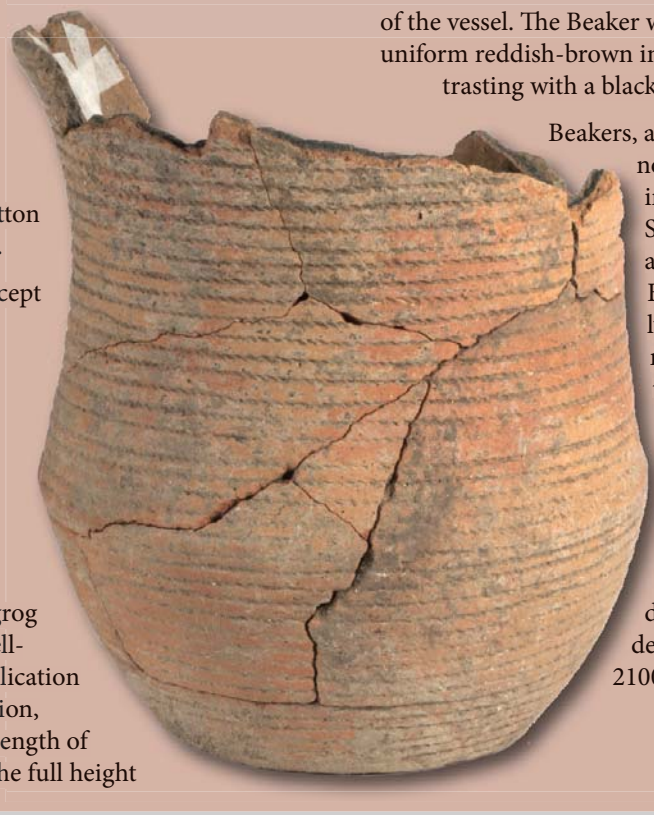
WHS NOMINATION, CARIBBEAN

In February 2017, OA North was invited to participate in an UNESCO-funded workshop on the Caribbean island of Carriacou, which forms one of the 32 islands that make up the Grenadines. The islands are divided between the nations of St Vincent and Grenada, and the workshop was to provide training and guidance in setting up an inventory of the heritage resource on the islands as part of the process of application for World Heritage Site status for the Grenadines. It was largely a gathering of local delegates, whose areas of expertise lay with cultural heritage and the environment. The five-day workshop consisted of a series of seminars on the cultural and natural resources of the islands, along with visits to sites of possible interest.

The workshop proved highly successful, in that it highlighted that any WHS application should be expanded to include both the main islands of St Vincent and Grenada, which contain important French and British colonial defences. Importantly, it also brought the respective delegates from St Vincent and Grenada together for the first time to discuss their shared cultural heritage and to formulate a strategy for its preservation and protection. OA was very pleased to be able to share its expertise and help to facilitate such a successful outcome.

Jamie Quartermaine

An early Bronze Age Beaker from Sutton Courtenay



A near-complete early Bronze Age Beaker was discovered in a shallow pit during continuing excavations by OA South at the Hanson Aggregates quarry at Bridge Farm, Sutton Courtenay in Oxfordshire.

The Beaker is complete except that it is missing most of the rim, probably due to later disturbance rather than burial of a partial vessel. The total height is just under 180mm. The Beaker is handmade in a soft, soapy-textured, fine clay fabric tempered with common angular orange grog pieces. The surface was well-smoothed prior to the application of all-over-corded decoration, executed by impressing a length of fine twisted cord around the full height of the vessel. The Beaker would have been open-fired, but uniform reddish-brown inner and outer surfaces, contrasting with a black core, were achieved.

Beakers, a pan-European ceramic phenomenon, were manufactured in a wide variety of forms. The Sutton Courtenay example is of a low-carinated, All-Over-Cord Beaker, a type that was commonly associated with burial or burial monuments. It was this type that was found with the Amesbury Archer from Boscombe Down, Wiltshire. More locally, low-carinated' with 'All-Over-Cord Beakers have been found by OA at Radley Barrow Hills and the Dorchester cursus. The date range, based on radiocarbon determinations, is broadly *c* 2400-2100 cal BC.

Lisa Brown

GREAT GRANSDEN POST MILL, CAMBRIDGESHIRE

The windmill, located on the outskirts of the historic village of Great Gransden *c* 18km to the west of Cambridge, is of 'open trestle' design set on low piers. OA East was commissioned by the owners, Cambridgeshire County Council, to undertake a photographic record before vital restoration work was undertaken by the Cambridgeshire Windmills Consultancy.

The Grade II* listed building may be the oldest post mill in the country, dating from some time prior to 1694. The mill was last worked in 1911 and had become disused and derelict by 1925, although it was later owned by Queen Marie and her son, King Peter of Yugoslavia, who lived in the mill house during World War II. In 1950 the mill was given to the county council but by the 1970s it was again in a state of disrepair, supported by scaffolding. Restoration was last undertaken between 1982-4, when two common and two patent clockwise sails were installed.

As well as photographing the structure and its (remarkably well-preserved) internal workings, the project involved making a photographic record of the various graffiti. Once restored to full working order, it is hoped that the mill will be preserved for many more years to come and perhaps may even produce flour once again.

James Fairbairn

RAF MEMBURY TRAINING BUILDING, DEVON

A crumbling mid-20th century building adjacent to the M4 motorway has a somewhat unprepossessing character, but this disguises the structure's origins as a bombing teacher building, constructed at the former RAF Membury to train new crew for Bomber Command. OA South recently undertook the investigation of the building for Berkshire Pallets and discovered more about its interesting history.

Construction of RAF Membury began in 1941. The base included a complex of buildings intended to be used to train the crew members for the bombing campaigns over Germany. Bombing teacher buildings were constructed at many airfields during this time and had a standardised design.

The structure at RAF Membury was designed to house three identical bombing trainers, each one comprising a tall open space and a projector above which projected a large aerial photographic mosaic image onto the floor. This image would show a section of landscape and would move to simulate the flight path of an aircraft. The bomb aimer being trained would then have lain on a balcony overlooking the mosaic and used a bomb release mechanism to target specific features.

By the summer of 1942 the military situation of the war had considerably altered with the US entering the conflict, and shortly after its construction, RAF Membury was passed to the US Air Force. It is uncertain whether the bombing teacher building was much used for its original purpose, but the building nevertheless provides an interesting fragment from a relatively little-known airfield that now incorporates motorway services.

Jon Gill

HISTORIC BUILDINGS

HEADSTONE MANOR, LONDON

Since 2014, OA South has been carrying out a watching brief for Cultura London at Headstone Manor as part of restoration works. This scheduled site is thought to have been built for the Archbishops of Canterbury in around 1310, and, in early 2017, the watching brief focused on the works occurring in the Outer Court, and also directly adjacent to the manor house.

The Outer Court contains the late medieval Great Barn and the Small Barn (though the latter is not in its original position) and the watching brief recorded 18th- and 19th-century brick structures, belonging to buildings shown on historic maps. Close to the Small Barn, the remains of a large pond or tank were also recorded. This feature had a timber revetting, appears to date to the 16th or early 17th century and may have been related to the moat.

The watching brief area adjacent to the manor house also proved productive, as there a series of mortared walls were exposed that were associated with 16th-century pottery. Significantly, these appeared to form the external walls of a northern wing, or later extension to the manor house, and, interestingly, they occupied the supposed site of a medieval kitchen. Other walls were also recorded closer to the moat, which may again relate to an ancillary building, possibly a gatehouse.

Tim Allen

FIND SPOT

Unusual sandstone-tempered pottery from Kent

Back in 2009, a team from OA South excavated a late Iron Age and early Roman settlement at Leybourne Grange, a former hospital in the village of Leybourne, near West Malling in Kent, on behalf of Taylor Wimpey SW Thames. The ceramic assemblage comprised, as would be expected, grog-tempered wares (pottery tempered with crushed fragments of fired clay or pottery) and to a lesser extent sand. Initial assessment of the pottery, however, revealed that some of the sand-tempered pottery also contained distinct white and grey rock fragments. These were thought to be ragstone, a stone that was quarried in Kent from the Roman period and used in the buildings of Kent and London.

Analysis revealed that the rock-tempered fabric was mainly used for bead-rimmed jars. A sherd of the pottery was also submitted for petrographic analysis. Dr Patrick Quinn of UCL examined a thin-section of the sherd and found the rock fragments to be siliceous, not calcareous. In other words, they were sandstone, not limestone, and therefore not ragstone.

The result was exciting. The sandstone was extracted from the Hythe Formation, a geological band that runs past the site, suggesting that the pottery was locally produced. What is more, the apparent absence of sandstone inclusions in later Roman assemblages in the region points very strongly to the use of sandstone being short-lived, perhaps relating to a period of experimentation in the choice of tempers at a time of significant flux in pottery repertoires, styles and technology.

Edward Biddulph

NEWARK, NOTTINGHAMSHIRE

Considering the somewhat reactive and organic way in which excavations developed at Newark, it was a challenge to establish any form of community outreach programme in relation to the project. However, as soon as we realised the scale and significance of what we were dealing with, a quick call to OA's Community Archaeology Manager, Clemency Cooper, soon had channels to the Young Archaeologists' Club in place. Soon after that we were able to offer an introduction to eager members of the Newark and Nottingham branches of the club, including a short talk about the development and our discoveries, a show-and-tell session with some of the finds, and a site tour of the excavation area east of Bowbridge Lane.

Following on from these well-received site tours, Oxford Archaeology and the developer, Urban and Civic Ltd, were invited to give a joint presentation on the development and the archaeological finds to individuals in the community and members of local groups. This was made possible with the help of eminent local archaeologist Daryl Garton, and held at the community centre in Farndon, where it was extremely well attended. Inquiries were made at the meeting as to the potential for further site visits and soon after we were able to host a visit by members of FARI Archaeology during excavation of the hengiform monument and area west of Bowbridge.

The fieldwork programme relating to the Phase 1 parcel of the Newark development has come to a close, but works relating to Phase 2 and 3 areas are imminent. During the course of these, it is hoped that there will be further opportunity to involve the local community in survey work and a mooted community excavation.

In the meantime, a recent news article was recently published in the Newark Advertiser, featuring the site and its findings. In addition, Urban and Civic invited Oxford Archaeology to participate in a presentation to be delivered to local secondary schools sometime in the new year. This will, showcase the Newark development and, more generally, careers in the design and construction industry, during which OA will present the results of excavations so far undertaken, and talk about the planning process and archaeology's place within it. Looking forward, Newark continues to offer great opportunities to enhance community engagement in the project.

Adam Tinsley

DUDDON, CUMBRIA

After 2016's enormously successful excavation of a late medieval or early post-medieval longhouse, OA North returned in 2017 to the Duddon Valley to investigate another longhouse and provide training in archaeological excavation and surveying for people from West Cumbria.

This year, staff from OA North and volunteers from the Duddon Valley Local History Group examined a settlement of two (or three) longhouses and two later stock pounds, all set within a small enclosure on the side of the valley.

The longhouse excavated was a cross-passage type, set within a long narrow boat-shaped 'pound', which raised the question of whether the pound could actually be an earlier longhouse. If so, it would have been very large for a simple, domestic house, and its boat shape may be suggestive of a Norse communal longhouse.

The result of the excavation is that our small longhouse was late in the sequence and had three floors underneath it, the floors all relating to the outer pound. By the close of the excavation, the general feeling was that the pound probably was an earlier longhouse. It is hoped that radiocarbon dates will cast light on the site, and we have also resolved to return and complete the excavation of the longhouse/pound next year.

Jamie Quartermaine

CUNSEY FORGE, CUMBRIA

Cunsey Forge was first documented in 1549, and in its heyday in the 17th century, it was a significant bloom forge and finery forge. From this, a blast furnace was created at Cunsey in the early 18th century, precipitating the development in Cumbrian iron working, culminating with the blast furnaces of Barrow which, in the late 19th century, was the largest iron production site in the world.

As impressive as that sounds, what there was to see on the ground was anything but impressive. At the outset of a community project, set up by the Lake District National Park and run by OA North in collaboration with Salford University, the site was just a large hollow, located within an area of woodland, with a gully feeding in and another feeding out, but otherwise it was just a dump for modern rubbish. There was little on the ground that would provide any credence to the documented story.

Once the rubbish had been cleared, the community dig could begin. The team, quickly came down to an incredibly hard hammerscale surface which was contained within a rectangle, conveniently showing us the extent of the former timber building. Despite the enormous amount of hammerscale, we had no slag, so this confirmed that we had found the finery forge but not the bloom forge. But better than that, we discovered a rather magnificent anvil and mounting for a trip hammer, driven by water power. We also found a water wheel, but nowhere near our head and tail races, leaving us mystified.

By the end of the excavation, we had revealed a remarkable 17th-century finery forge, with all its component features, and we now have a fantastic insight into iron working of the period. All in all a remarkable result.

Jamie Quartermaine

CHESTER FARM, IRCHESTER, NORTHAMPTONSHIRE

Chester Farm comprises an 80 acre site with a complex of 17th- to 19th-century farm buildings, several of which are Grade II listed. Northamptonshire County Council owns the site, most of which is scheduled, and which includes a buried Roman small walled town. With help from a Heritage Lottery Fund grant, the council is converting the buildings to provide a heritage and archives centre for the county.

A community excavation at the site last summer found evidence for both Roman and post-medieval occupation. However, the discovery of two circular stone-lined wells led Northamptonshire County Council to commission a small team from OA East to excavate the features. The first of the wells was excavated in October 2016 and the second in November.

Both wells had very small internal diameters (less than 0.7m) and in order to excavate them safely the level of the surrounding ground was reduced in stages by machine. The bases of both wells were reached successfully, at 3.75m and 3.35m below ground level respectively. Their fills produced a wealth of finds, including animal bone – mostly cattle horn cores, skulls (one complete with its horns from the second well) and long bones. This may represent waste from a nearby tannery. The vast pottery assemblage from the first well in particular includes two complete jars and a number of near-complete vessels, including a pentice-moulded beaker and an Oxfordshire red-slipped bowl.

Louise Bush and Aileen Connor

THE BAY GATEWAY, LANCASTER

Several significant sites were identified on the northern outskirts of Lancaster during the construction of the Bay Gateway. The road, substantially funded by the Department for Transport, developed by Lancashire County Council, and built by Costain, links the port of Heysham and junction 34 of the M6. The complex history of one site, located on a gentle slope overlooking the confluence of the Howgill Brook and the River Lune, was unravelled through detailed analysis and radiocarbon dating.

The earliest remains, a row of small features, contained worked flint and burnt material that was radiocarbon dated to *c* 4500 cal BC. Subsequently, Mesolithic hunter gatherers moving up and down the valley visited the site on several occasions to prepare and repair tools. They left an occupation horizon within three distinct concentrations of flint-working debris and broken tools.

The focus of middle Neolithic (*c* 3400 cal BC) settlement activity was a simple sub-circular building, up to 6m across and supported by posts at the centre and south-east-facing entrance. It was associated with two external fire pits and, although it may have been a dwelling, there was little pottery or contemporary flintwork. Instead, several nearby pits were filled with burnt stones and charcoal, material that is analogous to the make-up of burnt mounds. Collectively, this might suggest that the building had a specific function, perhaps as a dry sauna. The remains represent an example of a structural form that remains nationally scarce and barely represented in the Neolithic of north-west England.

Following the abandonment of the structure, the site seems to have been occupied on at least two further occasions in the Neolithic, as well as in the Bronze Age. Clearly this small piece of Lancashire was an attractive spot for millennia.

Stephen Rowland

BELHUS PARK, M25 WIDENING SCHEME, ESSEX

Analysis of Pleistocene deposits uncovered during the M25 widening project at Belhus Park in Essex in 2011 for Skanksa Belfour Beatty has been completed. It reveals an intriguing story of early hominin occupation.

The project recorded a sequence of interglacial organic deposits dating to the Purfleet interglacial, otherwise known as Marine Isotope Stage (MIS) 9e. These deposits, associated with the former courses of the Thames/Medway rivers, date from 338-322 thousand years ago. Lithic artefacts, among them handaxes, a cleaver and a small discoidal core, had been recovered from the cutting of the M25 in 1980-1, while in-situ waste flakes were identified during the new phase of work. Our analysis has now placed these finds within a more secure dating and environmental framework.

Hand axes

Teeth of white-toothed shrew

The faunal and palaeoenvironmental evidence indicates that the deposits were formed when temperate conditions prevailed. At this time, a dense woodland existed, with herbaceous vegetation along the riverbanks and patches of open grassland. This provided suitable habitats for shrews, voles, and mice. The deposits also produced a juvenile tooth from a sabretooth cat, a top level predator and a very rare find from the British mainland. It is clear from this evidence that the climate was notably warm during this period.

This is an important piece of the overall jigsaw, demonstrating that our ancestors had moved sufficiently far north to have colonised Britain, before increasing warmth and rising sea-level isolated it as an island, and that they continued to prosper in this rich interglacial environment.

Carl Champness

STOKESAY CASTLE, SHROPSHIRE

In 2017, Julian Munby, Head of Buildings Archaeology at OA South, was commissioned by English Heritage to write a conservation plan for Stokesay Castle. This represented a welcome return to the site for Julian, as he wrote the first guidebook in 1993 when the castle was bequeathed to the nation.

Located just north of Ludlow in the southern end of Shropshire, the castle is seen from the Newport to Chester railway as a spectacular medieval hall and towers rising above a small lake, and surrounded by its own dry moat. The castle and its evocative timbered gatehuose was built more for show rather than defence in the late 13th century by Lawrence of Ludlow, the fabulously wealthy wool merchant and banker. A prolonged assault on the hall would probably have broken through the wide windows protected only by shutters, and what looks like a fierce gatehouse at the south end is a stack of noble bedchambers with picture windows.

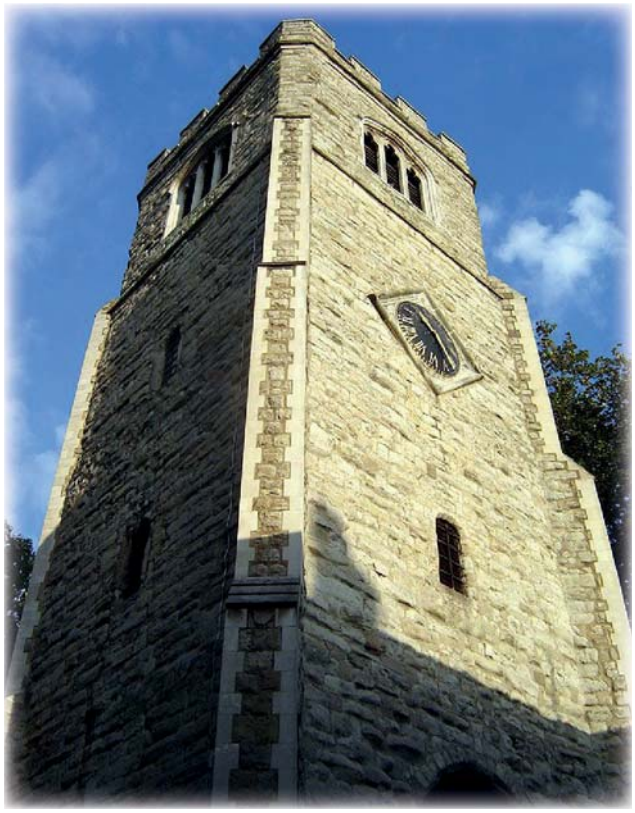
The lake is intriguing, for it makes a feature to be seen from the castle, and falls in the principal view of the castle from its parkland to the west. Whether this was a medieval romantic/chivalric landscape, or a creation of the 17th-century gentry tenants is uncertain at present.

The study looked at the fabric of the castle, gently conserved by the new owners in the 1990s, its natural setting (with the collection of exotic Rowan trees), and the record of archaeological interventions. There are abundant records, especially of the later history of the castle, and being of such visual interest has always attracted artists.

Julian Munby

GREATER LONDON ARCHAEOLOGICAL PRIORITY AREAS

The Greater London Archaeological Priority Areas (APAs) were originally created in the 1970s and 1980s to define areas with a significant known archaeological interest or the potential to contain previously unidentified archaeological remains. Since their creation they have been used to inform the application of local and national planning policies.



Over the past two years, Oxford Archaeology has carried out a systematic review of the APAs within the London boroughs of Redbridge and Hackney. The aims of both of these projects were to refine the extent of the existing APAs in line with the new Greater London APA Guidelines, define new APAs based on recent discoveries, and assign each APA a tier based on its significance.

In accordance with the guidelines, Tier 1 APAs are considered to have the potential to contain nationally important remains, Tier 2 APAs are areas considered to have the potential to contain heritage assets of archaeological interest, and Tier 3 APAs are landscape-scale zones with the potential to contain surviving areas of archaeological interest.

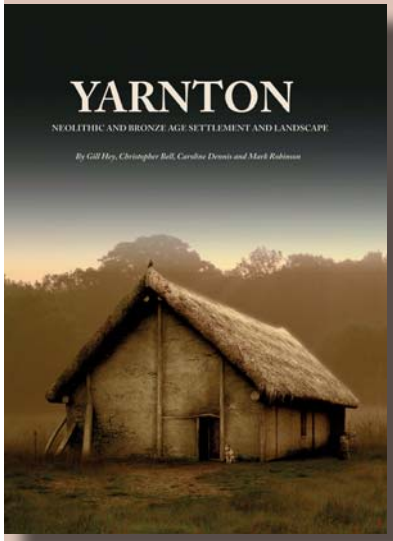
To understand the archaeological potential of both of these London boroughs, OA staff carried out an extensive programme of desk-based research, supplemented by rapid site visits. The results of this work were used to map areas of archaeological potential and to produce statements of significance describing the archaeological potential and significance for each of the new APAs.

Following completion of these projects, the APA coverage in Redbridge increased from 22% to 42% while in Hackney it increased from 30% to 43%.

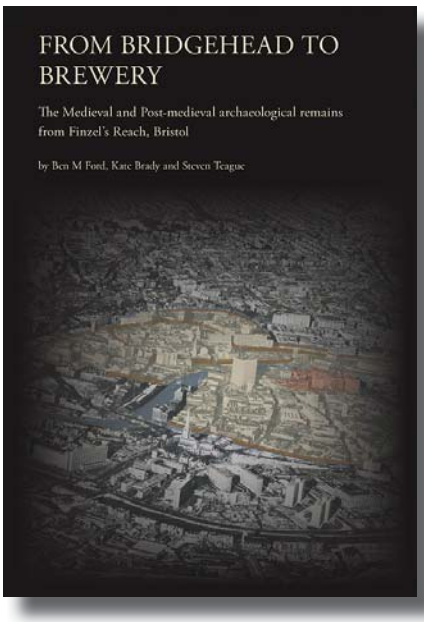
Charlotte Malone

A YEAR IN PRINT

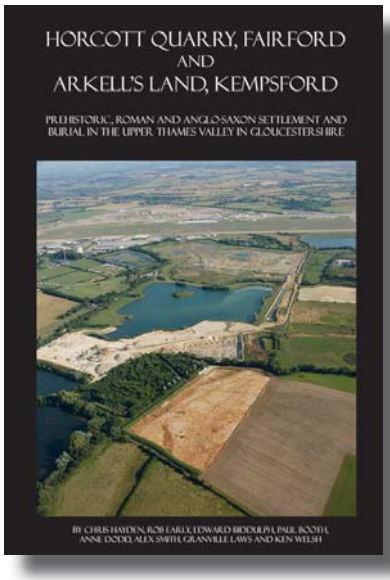
The past 12 months has seen the publication of several books and journal articles.



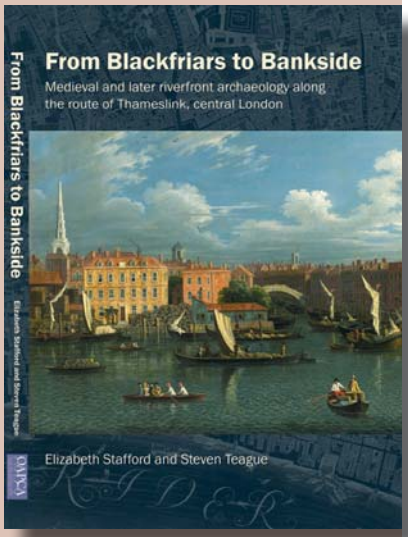
Yarnton's prehistoric landscape is described in **Yarnton: Neolithic and Bronze Age settlement and Landscape**, by Gill Hey, Christopher Bell, Caroline Dennis and Mark Robinson. The book examines a 2500-year settlement history that includes an early Neolithic rectangular, post-built house and later Bronze Age settlement.



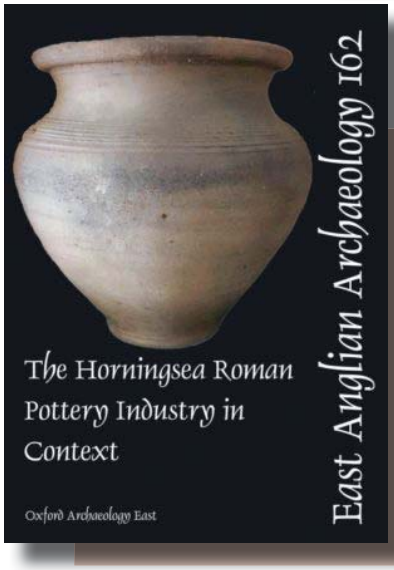
Moving into the medieval period, **From Bridgehead to Brewery: the medieval and post-medieval archaeological remains from Finzel's Reach, Bristol**, by Ben M Ford, Kate Brady and Steven Teague, presents the results from OA's major examination of the heritage of Finzel's Reach, the site of the former Courage and Bristol breweries.



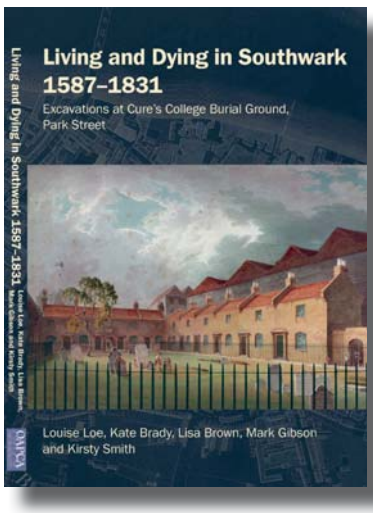
In **Horcott Quarry, Fairford, and Arkell's Land, Kempsford: Prehistoric, Roman and Anglo-Saxon settlement and burial in the Upper Thames Valley in Gloucestershire**, by Chris Hayden, Rob Early, Edward Biddulph, Paul Booth, Anne Dodd, Alex Smith, Granville Laws and Ken Welsh, excavations at two adjacent sites in the Upper Thames Valley revealed a contrasting picture.



From Blackfriars to Bankside: Medieval and later riverfront archaeology along the route of Thameslink, Central London, by Elizabeth Stafford and Steven Teague, presents analysis by OA South of fieldwork undertaken by MOLA as part of the Thameslink project. The volume includes a deposit model, and describes evidence relating to the riverfront.



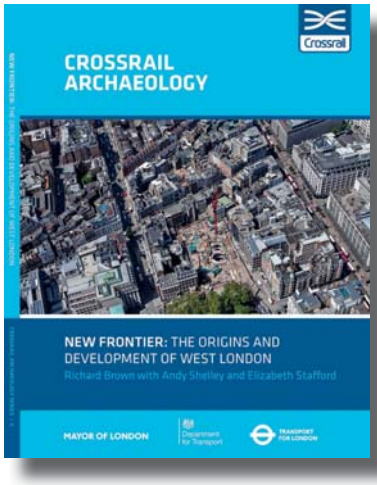
The Horningsea Roman pottery industry in context, by Jeremy Evans, Stephen Macaulay and Philip Mills, and prepared by OA East for the East Anglian Archaeology series, examines the industry's ceramic products, kiln sites, and chronology, and maps the distribution of the pottery in the region.

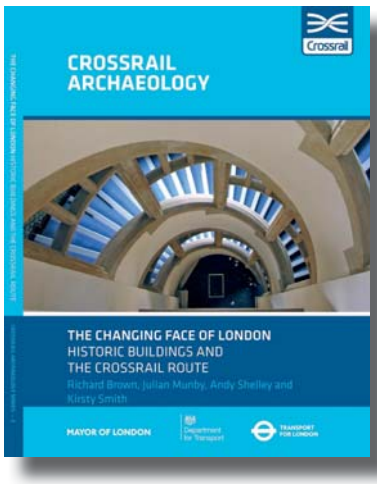


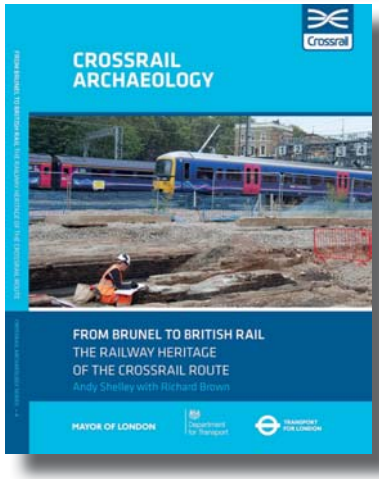
A second volume on the Thameslink work, **Living and Dying in Southwark 1587-1831**, by Louise Loe, Kate Brady, Lisa Brown, Mark Gibson and Kirsty Smith, is also out. This monograph focuses on the investigation of the 16th- to 19th-century burial ground associated with Cure's College Almshouse.

PUBLICATIONS

Staying in London, three books by OA and Ramboll in a series of volumes that describe the heritage of the Crossrail project were published. **New Frontier: The origins and development of West London**, by Richard Brown with Andy Shelley and Elizabeth Stafford, uses historical research, site excavation and archaeological monitoring to shine a light on the history and archaeology of West London. Andy Shelley and Richard Brown describe the many railway structures – stations, tracks, bridges – affected by the Crossrail works in **From Brunel to British Rail: The railway heritage of the Crossrail Route**. The industrial, commercial and residential buildings encountered along the route, meanwhile, are discussed in **The changing face of London: Historic buildings and the Crossrail route**, by Richard Brown, Julian Munby, Andy Shelley and Kirsty Smith.







Reports on our work have also appeared in county and national journals, including Transactions of the Essex Society for Archaeology and History, Oxoniensia, Transactions of the Bristol and Gloucestershire Archaeological Society, the Archaeological Journal, and Nature Communications.

In addition to our books and journal articles, we have produced many client reports or so-called grey literature. Many of these are available to download free from our online library (https://oxfordarchaeology.com/oalibrary).

Edward Biddulph

TALKS AND CONFERENCES

TALKING ABOUT ARCHAEOLOGY

Each year, our staff give talks to local societies and conferences, and speak at forums that shape archaeological practice. Here is a flavour of some of our talks and meetings over the past twelve months.

In 2016, CEO Gill Hey organised a conference on the Neolithic of Northern England on behalf of the Royal Archaeological Institute, the Prehistoric Society, and the Cumberland and Westmorland Antiquarian and Archaeological Society. Those attending the sell-out event in Carlisle enjoyed talks by eminent and popular speakers, including some of our own staff, while the Chair of our Research Committee, Richard Bradley, gave the keynote lecture.

Rachel Newman, Senior Executive Officer at OA North, serves as the Early Medieval Period Co-ordinator for the review and update of the North West Regional Archaeological Research Framework. In 2016, she spoke at the inaugural conference and led a subsequent workshop, and wrote the updated resource assessment text.

In the latter part of the year, staff from OA East presented the results of several years' work on the Anglo-Saxon Rendlesham project at a conference organised by Suffolk County Council, the Sutton Hoo Society, Council for British Archaeology East, and the University of Suffolk, at Bury St Edmunds, and spoke at the Cambridge Antiquarian Society's autumn conference on recent archaeology in Cambridgeshire.

Delegates at this year's Current Archaeology Live! event in London heard presentations about OA South's excavation of a Roman-period mass burial in Gloucester from Louise Loe, and our training excavation of the Roman town at Dorchester-on-Thames from Paul Booth. Also this year, Rachel Newman attended a meeting of the Hadrian's Wall World Heritage Site Management Plan Research delivery group, which has been reviewing the Management

TALKING ABOUT ARCHAEOLOGY

Plan's Action Plan for archaeological research. Becky Peacock spoke at the European Association of Archaeologists' conference in Maastricht on the Oxford Westgate pop-up museum.

Meanwhile, staff have spoken about our many investigations and post-excavation projects to archaeological societies and groups up and down the country, among them the Cambridge Archaeology Field Group, the North Hertfordshire Archaeological Society, the Oakington and Westwick History Society, Radwinter Parish Council, Sawtry History Society, Lancaster University, Woodstock Museum, the Lathom Trust, the Roman Finds Group, and the Kent Archaeological Society.


Becky Peacock (right) and Ben Ford (left) with session organiser Gerry Waite at the EAA 2017 Maastricht conference

Edward Biddulph

OA IN THE NEWS

Oxford Archaeology's work often attracts the interest of the local, national and, occasionally, international press and media, and the past 12 months have been no exception.

The Daily Mail and the BBC News website featured stories about OA East's work on the Norwich Northern Distributor Route. The Daily Mail also ran an article on our excavation at Beaulieu, Essex. There was local press coverage of OA North's community projects in the Duddon Valley and at Cunsey Forge, and a story about an excavation, also by OA North, at St Anne's Well, Rainhill, appeared in the Liverpool Echo. The Oxford Mail featured a story about the St Ebbe's project, with which OA South has been involved through the Westgate project.

Oxford Mail

Oxford Archaeology East's fieldwork at Cherry Hinton in Cambridge particularly made a splash. News of the excavation, which revealed an Anglo-Saxon cemetery and settlement, appeared on the Cambridge News, Heritage Daily, and Sci News website, and even made the news on Horsetalk, a New Zealand-based website dedicated to horses.

The cover story of the November/December 2016 issue of British Archaeology magazine reported on three aDNA projects that looked into identity and migration in England. One of the projects, which focused on Cambridgeshire in the early-mid Anglo-Saxon period, used data from OA East excavations, and staff from OA were also involved in the research.

BBC

CAMBRIDGE news

Turning to the broadcast media, the BBC's 'Digging for Britain' team visited OA South's site at Ardley Quarry in Oxfordshire to film the excavation and learn about the exciting results. Forces TV broadcast 'Remembering a Pilot and his Spitfire', a feature on the Great Fen Spitfire project carried out in 2015. Stephen Macaulay, meanwhile, talked about Stonea Camp on the Stonea Camp YouTube channel.

Our website and social media accounts are constantly used to promote our work and events. Why not check out our website (http://oxfordarchaeology.com/), or visit us on Twitter (@oatweet) and Facebook (@oxfordarchaeology) to read the latest news and join the thousands of people who follow or 'like' our pages?

Edward Biddulph

A YEAR OF COMMUNITY ARCHAEOLOGY

North, South and East… OA continues to deliver community archaeology across the UK.

As a charity focused on heritage and education, we aim to ensure that the archaeological heritage doesn't just belong to archaeologists, but to everyone – encompassing a wide range of audiences and participants. Whether engaging with volunteers, school visits, site open days, or community projects, staff across all three offices have been working on exciting outreach initiatives in the past year.

At OA East, two of our long-standing partnerships have led to new community outreach projects. Following 25 years of excavations at the Wellcome Genome Campus in Hinxton in Cambridgeshire, we collaborated with its public engagement team on a schools' project called 'Strands of Time' in 2017. OA's Community Archaeology Manager developed and delivered workshops for over 450 pupils at eight local primary schools, which analysed the archaeological discoveries at Hinxton and linked them to the pioneering work of the genomic scientists at the campus.

Similarly, OA East has had a well-established association with Stonea Camp since excavating there from the early 1990s and after its restoration when it was opened to the public. Situated near March, it is the lowest-lying 'hillfort' in Britain. In 2017, we have been the heritage partners in a new Heritage Lottery Funded (HLF) project to develop, promote and research the site. Staff from both OA East and OA North have been involved in three open day events, and contributed content to a new website and mobile visitor app.

Another HLF scheme for OA East is a new Young Roots project with Cambourne Village College in Cambridgeshire. This is the fifth HLF project OA East has run in partnership with Cambridgeshire schools in the past 10 years as a result of development-led projects. Students at the secondary school carried out their own excavation of a late Iron Age/Roman farmstead on the outskirts of the new town of Cambourne in September 2017. Over 250 visitors attended the public open days and each of the four feeder primary schools visited the excavation and received visits in-school from our archaeologists. We are now developing an interactive online resource where the residents of the new town will be able to search what archaeology was excavated under their houses and streets. We hope this will become a tool OA can use on any project in new towns.

A community dig was also run by OA East next to the medieval Leper Hospital Chapel in Cambridge in November 2016, as part of an evaluation in advance of the Chisholm Trail cycleway. The Cambridge branch of the Young Archaeologists' Club took part in the excavation, as did volunteers from local historical and archaeological groups. Further community archaeology is likely to take place on the site as the Leper Chapel is enhanced as part of the wider project.

In Oxford, OA South has had a busy programme of public events. Staff took part in the annual Oxford Open Doors event, setting up displays and activities in the Key Learning Centre at Oxford Castle and bringing

back the popular Westgate pop-up museum, which showcased finds from OA's excavation of a medieval friary.

Staff also set up a display of ancient stone axes and arrowheads as part of the Being Human festival at the Pitt Rivers Museum, and were invited to return again to the museum with activities during the Festival of Archaeology. At the Museum of Oxford, members of the public were given a chance to explore medieval life in Oxford as part of a public open day for excavations in the old Jewish quarter in St Aldate's and Queen Street. The project manager gave a talk and there was finds handling and activities for all ages.

Later in 2017, OA South took an information stand, finds and activities to Cheney School's 'Ancient and Modern Science Festival', and to the annual Oxfordshire Past event presenting recent archaeological work in the county.

The ongoing Dorchester-on-Thames training excavation held its annual open day in July 2017 and, more recently, OA South welcomed over 200 primary school students to its excavations at Slade End Farm in Wallingford for a tour of the site.

As already profiled in this review, OA North has also had a successful year of public outreach in their commercial and non-commercial ventures. A team returned to the Duddon Valley in the Lake District for the second excavation season of the three-year HLF project to investigate three longhouses, and was also involved in another HLF community project in the Lake District, at Cunsey Bloom Forge, in collaboration with Salford University.

The Headlands to Headspace project around Morecambe Bay, in which OA North has participated over the last few years, is now coming to an end, with reports being completed on the various pieces of fieldwork. However, OA North has now begun working with the partnership of the Friends of the Lake District and the Yorkshire Dales National Park on a pilot project in the area of Asby Common, where the two protected areas now converge. Commercial excavations by OA North at Newark-on-Trent included a programme of community outreach, which is described in this review.

In addition to the projects briefly touched upon here, many OA staff across the organisation have given talks to schools and local groups about their work and have facilitated placements on site and in the office for volunteers and work experience students. Many of these take place at weekends and evenings, often in staffs' own time. The 2017 Day of Archaeology was a great collective effort to share updates from the three offices and in the field. A Twitter take-over coordinated by OA's Heritage Burial Services department resulted in over 4,000 visits and over 240 new followers.

Finally, it's a great testament to Oxford Archaeology's community archaeology strategy that two projects (Jigsaw Cambridgeshire and Jubilee Colliery in Oldham) featured as case studies in Historic England's 2017 Heritage and Society report, which shows how heritage contributes to personal well-being, the wider community and the economy.

Clemency Cooper

WHO IS OXFORD

OUR CLIENTS

Our clients include multinational and national companies, planning consultancies, government bodies, charitable organisations, educational institutions, and many private individuals. We can't mention everyone here, but large or small, your business is appreciated.

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Beechwood Solicitors
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Ely North Consortium LLP
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Environmental Resources Management Ltd
Essex County Council
Eton College
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Everton Stadium Development Ltd
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Genome Research Ltd
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Historic England
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Hopkins and Moore (Developments) Ltd
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Hull City Council
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Identified Developments Ltd
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J A Pye (Oxford) Ltd
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Jacobs UK Ltd
JCAM Commercial Real Estates
John Fyfe & Son (Ely) Ltd
John Young's Ltd
Jones & Sons Environmental Services
Keepmoat Homes Ltd
Kent County Council
Kier Construction Ltd
Kings College School
Knowsley Metropolitan Borough Council
Ladson Westbar Ltd
Lagan Homes Ltd
Laing O'Rourke
Lake District National Park Authority
Lancashire County Council
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Land Use Consultants Ltd
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LG Park HT1 Ltd
Linden Homes
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Little Paxton Parish Council
Liverpool Football Club
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Morecambe Bay Partnership
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Nexus Planning Ltd
North East Lincolnshire Council
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Northumberland National Park Authority
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Old Ginger Developments Ltd
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Oxford Castle Ltd
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P J Livesey Holdings Ltd
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R Taylor and Sons
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RSK Environment Ltd
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Rural Solutions Ltd
Salmon Harvester Properties Ltd
Savoy Construction
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SC Osney Lane Ltd
SDC Builders Ltd
SEGRO UK
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Sibelco Europe
Signature Quality Refurbished Homes Ltd
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Southrope Developments Ltd
St Ebbs's Parochial Church Council
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Yorkshire Dales National Park Authority

ARCHAEOLOGY ?

OUR STAFF

Oxford Archaeology employed some 370 staff across its three offices between April 2016 and September 2017. Many thanks to everyone for their contribution to the success of the company.

Senior Management
Aileen Connor
Anne Dodd
Gill Hey
Alan Lupton
Stephen Macaulay
Rachel Newman
Simon Palmer
Dan Poore
Elizabeth Popescu
David Score
Paul Spoerry
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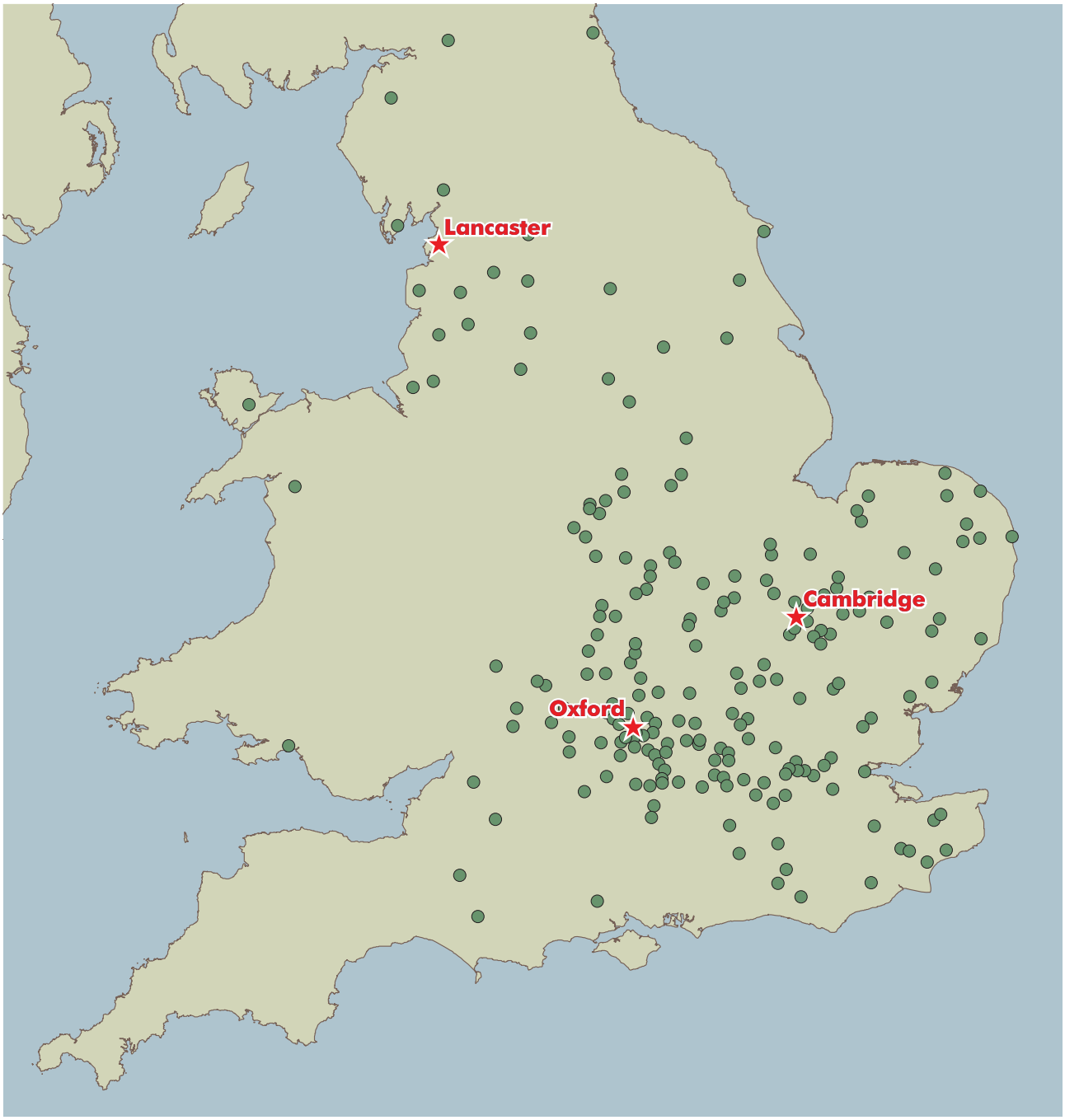

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