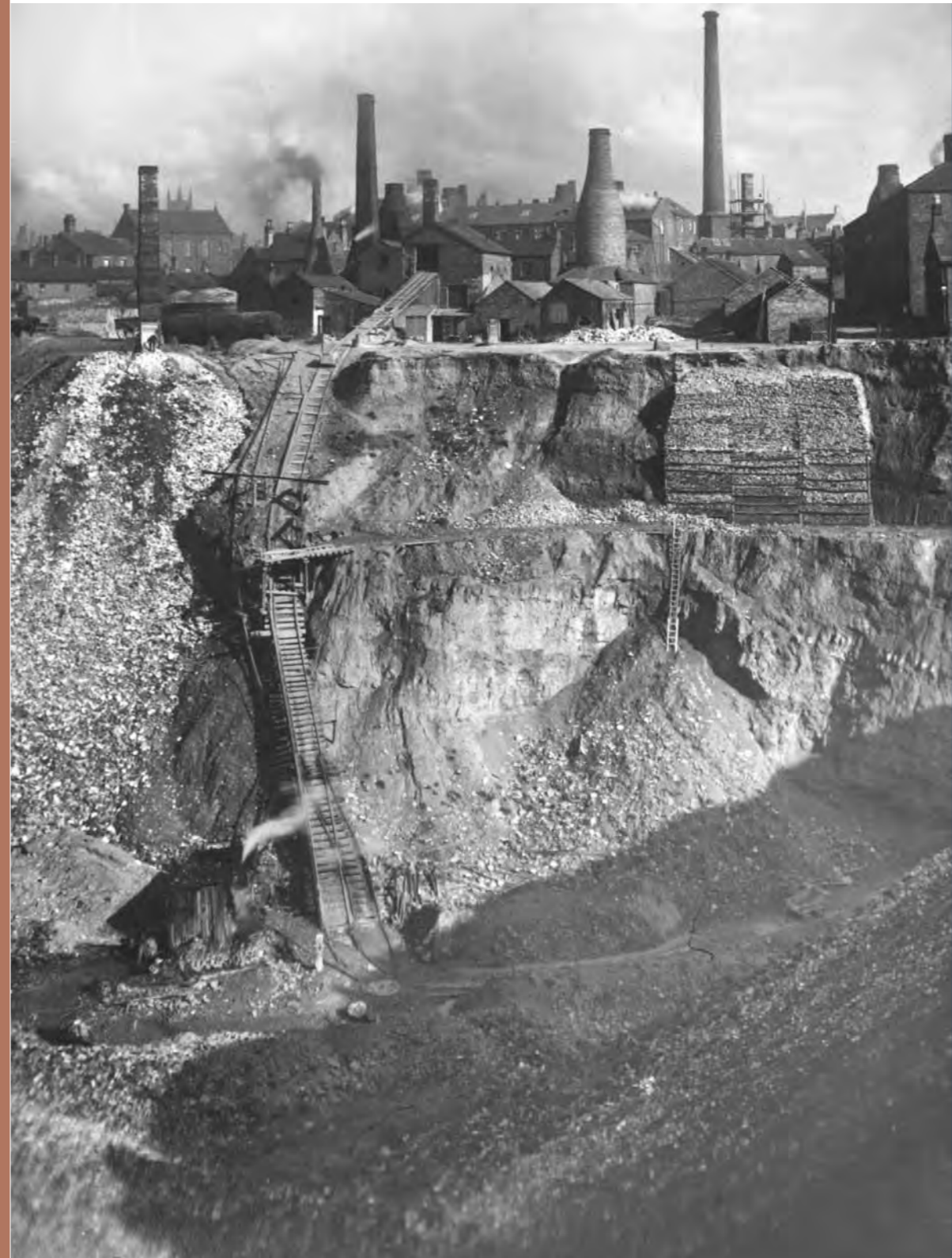




Summer 2007
Number 64

The ARCHAEOLOGIST



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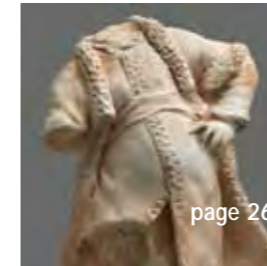


Institute of Field Archaeologists
SHES, University of Reading, Whiteknights
PO Box 227, Reading RG6 6AB
tel 0118 378 6446
fax 0118 378 6448
email admin@archaeologists.net
website www.archaeologists.net



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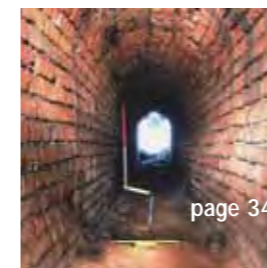
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This *TA* includes news of two significant initiatives that have reached the public arena and for which your views are valuable. First is the Heritage White Paper (p5), where we had to consult you with a separate mailing as the consultation finished on 30 May. This includes reforms that should be of real benefit if – a big if – implementation is properly resourced and executed. Secondly, we now have the PARN report (p6) on possible merger of IFA and IHBC. In the end this proved not exciting (partly, it seems, because archaeologists are perceived as aggressive and predatory, a fascinating thought). Your views on this report are needed by 26 July.

I chose the title of *Post-medieval archaeology* for this issue without much thought about its implications. Fortunately more sophisticated minds, such as Marilyn Palmer (p9), argue the case for the internationally-recognised term ‘historical archaeology’, with no end date. We have certainly moved far from the traditional cut-off at 1750, with articles in this *TA* alone that bring us into the 1990s (eg ‘The Van’, p19) and cover late 20th-century concerns ranging from domestic life in the 1950s to sites for manufacturing mustard gas in Wales, and spine-chilling Second World War and Cold War monuments elsewhere in Europe.

IFA’s Annual Conference, held this year on our home territory at Reading, was attended by a record 460 delegates who enjoyed the campus in spring sunshine except on the freezing day chosen for trips to Silchester and around historic buildings in Reading (yes, there are some. Reading Abbey has an impressive history, and many 19th-century houses and industries, such as the Huntley and Palmer biscuit factory, have survived dreadful late 20th-century decisions). Highlights included a session on *Great Excavations*, with misty-eyed nostalgia mixed

with fantastic discoveries, and mind-expanding stuff in *Archaeology and the Arts*. The next issue of *TA* will cover conference sessions, so do please send accounts of your sessions and/or talks you gave. Impressions from delegates who were there to listen would be interesting as well. Planning for the next conference (in Swansea) is already underway, with a call for papers already posted out. Session slots fill up fast, so respond to Alex Llewellyn as soon as possible to make sure you will be heard there.

There are now two changes to members’ services. Our Jobs Information Service can now be emailed to members for free, and if you are not already registered for this service and would like it, send your email address to beth.asbury@archaeologists.net. Also, SALON is no longer being emailed to IFA members and instead we have a similar arrangement with Heritage Link Update. However, from June regular issues of SALON can be downloaded from www.sal.org.uk, and if you would still like to be on the mailing list, email Christopher.catling@virgin.net. Send him too any news of discoveries, events and publications that will interest other archaeologists.

Alison Taylor



Alison.Taylor@archaeologists.net

Notes to contributors

Themes and deadlines	Contributions and letter/emails	EDITED by Alison Taylor, IFA, SHES, University of Reading, Whiteknights, PO Box 227 READING RG6 6AB
Autumn: IFA Conference papers and Annual Report deadline: 15 June 2007	are always welcome. It is intended to make <i>TA</i> digitally available to institutions through the SAL/CBA e-publications initiative. If this raises copyright issues with any authors, artists or photographers, please notify the editor. Short articles (max. 1000 words) are preferred. They should be sent as an email attachment, which must include captions and credits for illustrations. The editor will edit and shorten if necessary. Illustrations are very important. These can be supplied as originals, on CD or as emails, at a minimum resolution of 500 kb. More detailed <i>Notes for contributors</i> for each issue are available from the editor.	DESIGNED and TYPESET by Sue Cawood
Winter: Archaeology, sustainability and global warming deadline: 15 September 2007	Opinions expressed in <i>The Archaeologist</i> are those of the authors, and are not necessarily those of IFA.	PRINTED by Duffield Printers Ltd (Leeds)
Spring: Training in archaeology deadline: 15 December 2007		

FROM THE FINDS TRAY

Profiling the Profession 2007–08 & Discovering the Archaeologists of Europe

This year, IFA will again be gathering and analysing labour market intelligence on the state of archaeological employment in the UK. This will be the third in the *Profiling the Profession* series, following work in 1997–98 and 2002–03 (see IFA website). The creation of time-series data sets will allow us to see how our profession has evolved (in terms of numbers employed, salaries, skills issues and other areas) over the last ten years, and will help individuals and employers position themselves within the workforce. This exercise is part-funded by the European Commission as part of a wider project, *Discovering the Archaeologists of Europe*. Comparable data will be gathered in ten countries, with a further focus on transnational mobility and ways to overcome obstacles hindering individuals and companies seeking to work abroad. In the next few months, questionnaires will be sent out to employers. Please complete these as fully as possible – the better the data, the better the analysis!

Kenneth Aitchison
Head of professional development, IFA

Operators Commended in Marine Archaeological Awards

The British Marine Aggregate Producers Association (BMAPA) has announced special commendations for member companies following contributions to the advancement of marine archaeology and understanding of our past. The awards arrive in the wake of a new protocol, introduced in 2005, which has guided marine aggregate dredging companies in reporting archaeological finds more effectively and go to organisations that can make the most of the discovery. Developed in partnership with English Heritage, the protocol has helped the 800 staff amongst the sector’s operating companies to identify over eighty significant finds in one year. The awards, judged by Ian Oxley, head of Maritime Archaeology within English Heritage, went to Purfleet Aggregates for reporting a mammoth tusk dated around 44,000BC, to Solent Aggregates Ltd, Bedhampton Quay, for the efficiency and enthusiasm of staff in reporting to archaeologists and, for the most professional attitude in applying the protocol at sea, the marine aggregate dredger ‘*Arco Humber*’ operated by Hanson Aggregates Marine, whose staff had been regularly reporting small fossil fragments.

For further information on the Guidance Note, the reporting protocol and the finds that are being reported see www.wessexarch.co.uk/projects/marine/bmapa

Arco Humber, whose crew regularly report fossil finds



Mammoth tusk, c.44,000BC, reported by Purfleet Aggregates

Charlestown Shipwreck and Heritage Centre

The Archaeology Data Service/AHDS Archaeology has just launched a new resource, Charlestown Shipwreck and Heritage Centre, an important maritime collection located in the small harbour of Charlestown, near St Austell in Cornwall. This maritime museum houses many objects recovered from historic shipwrecks, ranging from the 16th century to the present day. The record includes a finds database, a provenance record detailing how the objects ended up in the museum and a detailed photographic record of the objects. See http://ads.ahds.ac.uk/catalogue/archive/charlestown_eh_2006/

FROM THE FINDS TRAY

Contemporary and Historical Archaeology in Theory (CHAT) conference 23–25 November 2007, University of Sheffield

Faith, Hope and Charity: finding belief, desire and benevolence in archaeologies of the recent and contemporary past is the uplifting topic of CHAT's conference next November. This will be an international conference exploring themes that will include colonisation of New Worlds, contemporary and historic slavery, peace movements, spread of world faiths, archaeologies of hospitals, workhouses and confinement, sport and leisure, urban regeneration and environmentalism. For further details, contact James Symonds, ARCUS, Graduate School of Archaeology, Westcourt, 2 Mappin St, Sheffield S1 4DT J.Symonds@sheffield.ac.uk.

Missing Yearbooks

For some reason we have not yet fathomed there seem to be several IFA members who did not receive the 2007 IFA Yearbook and directory. If this applies to you, can you let the office (Kathryn.Whittington@archaeologists.net, or 0118 3786446) know SAP and we will make sure you get one fast.

A new qualification in archaeological practice

On April 25 there was launched a new vocational archaeology qualification, the Qualification in Archaeological Practice (QAP). It is being offered by Education Development International (EDI) one of the UK's leading awarding bodies and was developed by IFA with the support of the Creative and Cultural Industries Sector Skills Council and EDI. QAP will allow archaeologists to accredit their skills against a nationally recognised framework, enabling all who work in archaeology to gain formal credits for informal training and on the job learning. Workplace skills and learning can be used to demonstrate competence, and aspiring archaeologists will be able to acquire vocationally relevant skills.

EDI were chosen to award the qualification as they have the background, expertise and experience that meshed with IFA's requirements to deliver the qualification to professional archaeologists, students, and unpaid participants. EDI understood the particular needs of our sector, having successfully delivered Cultural Heritage NVQs in museums and galleries. The qualification will be offered by existing EDI heritage centres, IFA and new assessment centres. Those working towards the qualification will study core units in areas such as research, conservation and health and safety. The Nautical Archaeology Society will be offering the qualification as part of their own internationally recognised training programme. Future plans for the qualification include possible incorporation into volunteer training projects and excavations such as Dig Manchester.

Kenneth Aitchison and Kate Geary

Adapting Archaeology: foresight for climate change in the UK

Tuesday 10 July at the British Academy, organised by CBA with the Council for Scottish Archaeology and the Centre for Sustainable Heritage, University College London.

This conference will bring together thoughts on the likely effects of climate change for the historic environment and how archaeology and conservation need to adapt to meet this new challenge. The programme includes current research from the UK Climate Impacts Programme, UCL Centre for Sustainable Heritage, English Heritage, the National Trust, the Environment Agency and others on the effects of climate change on coastal management, soils and water, agriculture and the landscape.

Fee: £65 (including lunch and literature). Tickets from Sue Morecroft, CBA, St Mary's House, 66 Bootham, York YO30 7BZ.

Heritage protection for the 21st century

Peter Hinton

The Heritage White Paper, largely restricted to England and Wales but in some important aspects affecting the entire UK, has been heralded as a 'once-in-a-generation' opportunity to reform a complex and confusing aggregation of laws and instruments into a coherent, transparent, effective and efficient system for providing legal protection to the most important physical remains of the human past. It is principally concerned with reforming the regimes for designating and managing change to important historic assets.

IFA has responded to all the consultations that have fed into the White Paper and I have been involved in the committee advising on its drafting, as have other IFA members wearing other hats. To view the White Paper, see www.culture.gov.uk/Reference_library/Consultations/2007_current_consultations/hpr_whitepaper07.htm; for analysis by IHBC see www.ihbc.org.uk/papers/herwp_ihbc_cons.pdf, and for a view from the The Archaeology Forum see www.britarch.ac.uk/archforum/index.html

As recounted at the last two IFA AGMs, the White Paper seeks to unify the present disparate approaches to the legal protection of the historic environment, to maximise accountability and public involvement, and to 'support sustainable communities by putting the historic environment at the heart of the planning system.'

Key reforms for England and Wales are

- replacement of the existing designations for listed buildings, scheduled monuments, parks, gardens, battlefields and World Heritage Sites with a single register of assets
- a single set of criteria for designation based on 'special architectural, historic or archaeological interest'
- English Heritage and National Assembly of Wales (through Cadw) to be responsible for designation
- improved records of designated assets, accessible through a new internet portal
- improved public consultation about designation
- encouraging local designations by local authorities
- interim legal protection for assets being considered for designation – to prevent unscrupulous owners from (for example) demolishing buildings before they are entered on the Register

- rights to appeal designation decisions
- bringing protection of buildings in Conservation Areas back to pre-Shimizu levels (ie removing a loophole that can permit demolition)
- giving protection to World Heritage Sites within the planning system
- reform of the class consents that permit ploughing of many (presently scheduled) archaeological sites
- a unified consent regime for registered assets in England, administered by local authorities: in Wales Cadw will continue to make decisions on currently scheduled monuments and local authorities on those that are currently listed buildings
- potentially merging Conservation Area Consent with planning permission
- encouraging pre-application enquiries
- the option for EH/Cadw, local authorities and owners of designated assets to enter into 'Heritage Partnership' management agreements to avoid time-consuming repeat consent applications for foreseeable works
- a statutory requirement for local authorities to maintain or have access to Historic Environment Records (provided in Wales by the four Trusts)
- guidance on local authority historic environment services

Reforms covering the UK comprise

- broadening the range of maritime heritage assets that can be designated
- new criteria for designation on the basis of 'special archaeological or historic interest'
- interim protection for assets being considered for designation
- improved records for maritime heritage
- consideration of a more flexible consents/licensing regime
- a statutory responsibility for the Receiver of Wreck to report marine historic asset to heritage bodies (over-riding confidentiality constraints)

The consultation period is now over, although no doubt there will be other opportunities to express opinions when legislation is proposed. To see IFA's response, which was guided by Council and by members' views sent after our postal consultation, see www.britarch.ac.uk/archforum

Peter Hinton
Chief Executive, IFA

Merger with IHBC?

Your views are needed

Peter Hinton

The potential and need for fuller integration of archaeologists and building conservation professionals have never been greater. Incentives for exploring a strategic partnership – or more – between the two institutes are the opportunities for

- more coherent advocacy on behalf of professionals in the sector
- more efficient working by the professional institutes in a range of standard setting, self-regulatory functions and membership services
- reliable and recognised systems for accrediting professional competence and ethics, potentially including chartered status
- a professional sector capable of meeting rapidly changing public demands, including those reflected in the Heritage Protection White Paper (p16)
- closer correlation with integrated historic environment practice, as reflected in the heritage agencies, Royal Commissions, many local authorities and private practices

Last year IFA and IHBC (Institute of Historic Building Conservation), with financial support from English Heritage and encouragement of the All-Party Parliamentary Archaeology Group, commissioned Professor Andy Friedman and Christina Williams of PARN (Professional Association Research Network) to look at options for the institutes ranging from full merger via a federation model and joint service provision model (eg for accreditation) to 'do nothing'.

Following consideration of a preliminary report on interviews between PARN and key officers of the institutes and their stakeholders (revealing some interesting perceptions of what both archaeologists and building conservation professionals do and how they think), an elaboration of the options and a study of mergers by professional associations, PARN convened a joint meeting of representatives of the two Institutes' councils with a view to recommending a way forward about which they

could consult with their memberships. At that meeting IFA Council expressed its strong view that the two institutes' members work in closely related disciplines in a single professional sector and that we should explore the possibility of merger (the intermediate options were considered potentially a fudge, not strategic progress). IHBC Council's view was that although a holistic approach to the historic environment is needed, its membership strongly opposed any consideration or discussion of merger or federation, though 'closer working' would be acceptable.

In that context a new option has been proposed by PARN: a joint committee to

- review the Memorandum of Understanding between the two institutes
- develop further understanding of each other's memberships, strategic objectives and values
- produce joint responses on relevant consultations
- review joint projects with a view to improving the process, and initiate new projects particularly in training, career development and best practice guidance
- define occupational roles within the historic environment
- review options for accreditation and consider whether a scheme would be better undertaken together or separately
- establish shared Special Interest Groups where the two memberships overlap
- explore shared member benefits

PARN's report can be read at www.archaeologists.net/modules/news/article.php?storyid=156. Council is seeking IFA members' opinions and recommendations on the proposed way forward. Please reply to the office address or alex.llewellyn@archaeologists.net by 26 July 2007 (any feedback relayed to IHBC via a joint committee can be made anonymous on request).

Peter Hinton

Introducing IFA's

Beth Asbury

This year IFA is celebrating its 25th anniversary. From its inception in 1982, we now have almost 2400 members and 55 Registered Archaeological Organisations, including avocational archaeologists and a significant number of students. In 2006 we received 461 new and upgrade applications, and membership rose by an impressive 12%, a net gain of 247.

Because of the increased number of applications, Validation Committee now meets every six weeks to consider applications for PIFA, AIFA and MIFA grades, with Rachel Edwards as Chair. The joining pages of the IFA website provide step by step information on the application process and the documentation needed. Beth Asbury and Kathryn Whittington look after those who apply for membership, existing members who are upgrading their membership, rejoiners and the RAO scheme. We are the ones who you should contact if you ever want to speak to anyone about these subjects.

We know that the application process may appear daunting, but the Applicants' Handbook is updated roughly every year and we try to make the information in it as straightforward as possible. In the current version we have adapted a table to better define the differences between levels of membership, moving from the common misconception that the required levels of responsibility for different grades are just about management of people, but instead management of processes and the archaeological resource as a whole.

The 'Join/register' pages of the website contain dates of future Validation Committee meetings, a template for the essential Statement of Archaeological Experience, a template reference form, and Validation Committee's guidelines. In the near future, Validation Committee will incorporate

Membership Team

the new NVQ in Archaeological Practice and the National Occupational Standards (NOS) into its procedures, following consultation with the Professional Training Committee.

We hope that the increase in applications and the service we provide to members and prospective members continues. We are always available to answer the questions of applicants, referees and anyone who simply has an interest in knowing more about the IFA.

Beth Asbury
IFA Membership Team
SHES, The University of Reading
Whiteknights, PO Box 229
Reading RG6 6AB
Beth.asbury@archaeologists.com

Beth Asbury (right) and Kathryn Whittington (left) in their office. Photograph: Alex Llewellyn



Patrick Clay and Kate Geary

CWPA stands for the Committee for Working Practices in Archaeology, which is rapidly deflated when its acronym is so easily modified to 'Cowpat'. So what is it contributing? Covering such a wide subject as working practices it has a huge remit but, as working practices are fundamental to all our work, it is pretty important.

As the professional institute for archaeological and other historic environment work IFA is concerned with maintaining (and improving) standards. CWPA is the first port of call for new standard and guidance documents. Currently, important new S & G in preparation include *Conservation & management of the historic environment*, a joint IFA, IHBC, and ALGAO project looking at curatorial practice, and maritime archaeology documents on nautical archaeology recording and reconstruction, while the Maritime Affairs Group is looking at archaeological diving practices, concentrating on health and safety requirements for commercial divers. An S & G for archives is in progress and one for geophysical and measured survey is proposed.



'Conditions of contract' is a standing item on the agenda. Work is ongoing on model contracts for sub-contractors aimed at the self-employed specialist. *TA 63* included an article by Phil Mills on charge out rates for self-employed specialists.

Health and safety always figures high on the committee's agenda (as it should) especially at a time when new guidelines, procedures and legislation (and interpretation of all these) occur on a regular basis. Increasingly clients are requiring archaeologists to carry skills cards, whether 'Quarry passports' for the aggregates and mining industries or Construction Skills Certification Scheme (CSCS) cards for construction sites. Both require health and safety training. The committee has been looking into ways of entry to the CSCS scheme.

Nor can we ignore the long running issue of pay and conditions, as poor pay and conditions means poor working practices. IFA is pursuing a benchmarking exercise whereby pay scales for comparable responsibilities in other professions are used as a basis to calculate a pay scale for our own. I know this has taken some time but there is progress and we expect a result later this year.

So the committee is at the sharp end in attempting to change working practices in archaeology and the historic environment for the better. This cannot happen overnight but we are seeing progress. At present the committee comprises contracting staff from all levels, curators, consultants, finds staff, English Heritage and even a member from the continent. Expertly guided by Kate Geary, we cover a wide range of expertise but are always looking for other volunteers. So if anyone out there would like to be involved please contact me or Kate.

Patrick Clay
ULAS, University of Leicester
Chair CWPA

Kate Geary
IFA

Today's Working Practices in Archaeology. Archaeologists working alongside contractors during redevelopment at Sanvey Gate, Leicester. © University of Leicester Archaeological Services

NAMES AND AGENDA:

Marilyn Palmer

In the second half of the 20th century historical, post-medieval and industrial archaeology grew and developed side by side in Britain and America. Although Pedro Funari in his influential *Historical Archaeology: Back from the Edge* (1999) stated 'Americans will not agree to include medieval archaeology under the field of historical archaeology, as there no castles in the United States, nor will Europeans dissolve the specific identities of medieval, post-medieval and industrial archaeologies', recent conferences in both countries have indicated greater understanding of similarities in the various sub-fields than this would indicate. The Society for Post-Medieval Archaeology has abandoned its original terminal date of 1750, while industrial archaeologists now consider the social context of both consumption and production. This article will explore this increasing congruence in the hope that greater cooperation will follow.

■ **BRITAIN'S ROLE IN WORLD INDUSTRIALISATION**
Twentieth-century industrial archaeology was driven by the need to ensure that structures from the industrial past were recorded or preserved, and



industrial and post-mediaeval archaeology today

only in the 1990s were industrial sites routinely added to SMRs. Much of the impetus came from the voluntary sector, and CBA formed a Research Committee on Industrial Archaeology in 1959. Recognition has now been largely achieved, and Britain's role in world industrialisation recognised in the designation of six industrial World Heritage Sites since 2000. Industrial archaeologists can now take a more holistic approach to rural and urban industrial landscapes, an outstanding example being work by John Barnatt of the Peak District National Park Authority, working with the Peak District Mines Historical Society on the lead mining landscapes of Derbyshire, recognised by the Silver Trowel Award at the 2006 British Archaeological Awards. One only has to look at the entries for the 2006 awards to see the scale of work on industrial sites by both volunteers and professionals.



Ken Smith and John Barnatt of the Peak District National Park Authority, with Jon Humble of English Heritage, receiving the prestigious Silver Trowel Award from Mick Aston at the 2006 British Archaeological Awards. Their work has included mapping mining sites in conjunction with the Peak District Mines Historical Society and the production of *The Lead Legacy*. © PDNPA



Albert Dock, Liverpool, before its restoration and nomination as a World Heritage Site as part of the Liverpool Waterfront in 2004. Photograph: Marilyn Palmer

Industrial archaeology needs to contribute to our historical understanding of the processes of industrialisation, not just in landscapes and buildings but its human impact.

■ HUMAN IMPACT

Industrial archaeology needs to contribute to our historical understanding of the processes of industrialisation, not just in landscapes and buildings but its human impact. In the last 250 years, everyday life has been radically transformed, with upheavals in patterns of class, status, identity, exercise of social power and of resistance, but the necessarily fragmented nature of archaeological work can rarely illuminate these important questions. There are some notable exceptions, such as the methodology devised by Michael Nevell and John Walker of the University of Manchester Archaeological Unit to relate the introduction of new monument types to distinct social classes in their region. Jim Symonds and his team at ARCUS, University of Sheffield, have carried out extensive work to unravel the relationship between workshop-based and large-scale production in the steel industry, while Peter Neaverson and I also worked to a similar agenda in *The Textile Industry of South-West England: a Social Archaeology*.

■ RESEARCH CONTEXTS AND QUESTIONS

To enable deeper meanings to be extracted from fieldwork, the Association for Industrial Archaeology took part in English Heritage's project to develop research frameworks in archaeology. *Understanding the Workplace: a Research Framework for Industrial Archaeology in Britain*, published as Vol. 27(1) of *Industrial Archaeology Review* in 2005, formulates a research context. As well as methodological concerns, themes were geared to understanding social change. These themes included

- **continuity and change.** How far did industrial production replace or supplement production in

the home? Did new patterns of settlement displace existing ones or did existing settlements respond to changes in working patterns? Is social continuity among the workforce more characteristic of Britain than the patterns of transience and mobility seen, for example, in the USA?

- **production and consumption.** How was technological change in production reflected in patterns of consumption? Were changes technologically-driven or consumer-led?
- **understanding the workplace.** How did changes in power and lighting sources change the use of space? How far did new mills and factories determine working patterns within them? Are there identifiable patterns in the surveillance and control of the workforce? How far did the workforce resist such changes? Is there evidence for survival of workshop production and how did this interact with factory production?
- **industrial settlement patterns.** What were motivations for new settlements? Did existing settlements change to accommodate manufacturing processes? Can archaeological investigations accommodate the household, the neighbourhood, the town and even specialised manufacturing villages?
- **class, status, gender and identity.** How is social class affected by industrial developments? How important was status in creating manageable hierarchies in working communities? Did the role of women change in the household or workplace as a result of industrialisation? How far was a sense of identity developed by entrepreneurs and among working groups? Is this identity expressed in buildings and structures which indicate patterns of leisure, practice of religion and commemoration of death?
- **social control, paternalism and philanthropy.** How far are paternalism and philanthropy reflected in the historic environment? Was it restricted to employers in certain industries? How far did employers manipulate the workplace or settlement to achieve social control? What evidence is there for resistance to control and paternalism?
- **international context.** Can we exchange data on an international scale, to assess the significance of surviving sites and monuments? Can we identify patterns of international technological exchange in buildings or artefacts? What evidence is there for mobility of the workforce on a global scale?

Such a comprehensive framework will not be easily achieved, especially as the term 'industrial archaeology' is sometimes seen as restricted to a preservation movement. Contributors to *Understanding the Workplace* suggested terms such as

'the archaeology of the modern period' or 'the archaeology of the later second millennium AD' or 'later historical archaeology', leading to howls of protest. As Keith Falconer of English Heritage has said, 'just as Britain is perceived to have pioneered the industrial revolution and have bequeathed industrialisation to the world two centuries ago, so, in the last half century there is a similar perception that this country has pioneered and given the subject of industrial archaeology to the world'.

■ CHANGING TERMINOLOGY?

The heritage aspects of industrial archaeology have ensured its strong representation at both national and local levels. English Heritage has an internal Strategy Group as well as an external Advisory Group on industrial archaeology and the discipline has long been represented in the National Trust, which maintains many industrial sites. Numerous regional panels bring volunteers and professionals together to advise on conservation issues, and there are many county industrial archaeology societies. The discipline has a less strong, although growing, foothold in the academic world where both industrial and post-medieval archaeology tend to be classed under the generic term of 'historical archaeology'. How far should Britain accept the terminology in use in America, South Africa and Australasia rather than, as Funari says, refuse to 'dissolve the specific identities of medieval, post-medieval and industrial archaeologies'?

In April 2008, the Society for Post-Medieval Archaeology, the Irish Post-Medieval Archaeology Group, the Association for Industrial Archaeology and the group for Contemporary and Historical Archaeology in Theory meet in Leicester University to discuss what we have called 'Crossing Paths and Sharing Tracks', not dissolving our identities, which do have contemporary relevance, but acting in our common interests. Meanwhile, industrial archaeologists may have to use a term such as 'historical archaeology' for academic study, but a continuing professional and popular recognition of 'industrial archaeology' as the study and

The strong-armed women or balmaidens employed to break up ore at tin and copper mining sites of Cornwall. The role of women in mining is often neglected but they played a major role in preparation and dressing work on the surface while their menfolk extracted ore underground. (author's collection)



conservation of the monuments of past industrial activity, generally synonymous with 'industrial heritage'.

Industrial archaeology has been extremely successful in achieving recognition for the importance of remains of the industrial past and their survival in the contemporary landscape. But industrial archaeology has also developed into a scholarly discipline which seeks to contribute to the debates on the nature and outcomes of industrialisation. It has also spread beyond industry into the archaeologies of warfare, agriculture, religion, gardens, settlements and buildings. Could a name change strengthen all our studies of archaeology in the modern period?

Marilyn Palmer
Professor of Industrial Archaeology
University of Leicester, Leicester, LE1 7RH
mai@le.ac.uk

(contact James Gardiner jeg17@le.ac.uk for details of 2008 conference)



...industrial archaeology has developed into a scholarly discipline which seeks to contribute to the debates on the nature... of industrialisation.

Wellbrook Beetling mill in Northern Ireland, a small water-powered mill for beetling or refining woven linen cloth, now in the possession of the National Trust. Photograph: Marilyn Palmer



Post-medieval archaeology in *Ireland:* a 2007 perspective

Audrey Horning

The development of post-medieval archaeology in Ireland, north and south, was never going to be straightforward or painless. Long overshadowed by spectacular remains from more ancient times, post-medieval sites have also been tarred by their association with the turmoil of recent years, turmoil rooted in the early modern period. Unavoidably viewed through sectarian lenses, it is hardly surprising that the study of the archaeology of the last five hundred years was pioneered in the north, as 20th-century nationalist sentiment in the Republic directed archaeological attention to periods deemed untouched by British colonialism.

(above)
Household
archaeology,
Slievemore Deserted
Village, Achill
Island, Co. Mayo.
Photograph: Achill
Archaeological
Field School

This situation has altered over the last decade, particularly since the founding of the Irish Post-Medieval Archaeology Group (IPMAG www.science.ulster.ac/crg/ipmag.html) in 1999. Its inaugural conference in Belfast was so well attended that there have been five more, including one jointly with the UK Society for Post Medieval Archaeology (Derry 2004) and with the Group for the Study of Irish Historic Settlement (Cork 2006).

Counting the post-medieval

One incentive is the need to cope with the vast amount of post-1550 material culture being unearthed throughout Ireland, particularly in the Republic where massive motorway and development schemes, coupled with strong legislation to protect the archaeological heritage, require 'mitigation' for archaeological sites up and down the country, as will be obvious to anyone who reads the job adverts. Excavators are hampered by lack of basic knowledge about material culture and

history, exacerbated by widespread misunderstanding of archaeological legislation because, although protection can be extended to these sites, county inventories and surveys employ 1700 as a cut-off date, leaving the impression that later sites 'don't count.' Clearly, Irish universities need to expand course offerings while government agencies need to promote post-medieval sites and structures as legitimate archaeological resources.

Despite these difficulties, recent growth of the discipline in Ireland reflects expansion of historical archaeology around the world. Once mainly the preserve of North America and the UK, archaeologists in most countries now study the 'traditional' post-medieval period (1550–1750) and also periods up to and including the 20th century. Similarly, discussion over how to interpret this rich and complicated material heritage has become more informed (and sometimes divided!) by theoretical approaches borrowing from anthropology,

sociology, history, and even literary criticism. A wide range of papers presented at IPMAG conferences, as well as at the 2005 Dublin conference of CHAT (Contemporary Historical Archaeology in Theory), suggests that this situation is evolving, albeit characterised by intense debate.

Public engagement and contested past

While post-medieval archaeology in Ireland may have much to learn from more well-established practices world-wide, it also has much to contribute by way of a model. For example, from its inception IPMAG has sought to encourage interdisciplinary cooperation. On an island as small as Ireland, where heritage plays an important economic role, such linkages are, if not inevitable, certainly advantageous. Furthermore, a proactive approach to public engagement is evolving within the discipline that is both pragmatic and practical, particularly given the contested nature of the Irish past.

In a land where history really does matter, post-medieval archaeologists have to balance responsibilities to the past and to the present. As a demonstration, the upcoming IPMAG conference is marking the 400th anniversary of the Flight of the Earls of Tyrone and Tyrconnell in 1607 – an event that opened the north of Ireland to British plantation settlement under James I (VI). The conference will be held in a community centre in Rathmullan, Co. Donegal, 26–28 April, near the location where the Gaelic leaders and their followers set sail on their flight to the continent. Neither a celebration nor a lamentation, the conference aims to explore the character of Ireland on the eve of the Ulster Plantation, encouraging a dialogue about the complex legacy of the events of 1607. In a year of anniversaries, the Irish approach to commemoration seems more sensitive and mature than the patriotic rhetoric currently employed in Virginia to 'celebrate' the 1607 establishment of Jamestown (despite the concerns of the native population), and the paucity of public discussion about racism in Britain in light of the anniversary of the 1807 abolition of the slave trade.

[Audrey Horning](#)
Secretary, Irish Post-Medieval Archaeology Group
Lecturer in Archaeology
School of Archaeology and Ancient History,
University of Leicester
University Road, Leicester LE1 7RH

Ulster TV filming excavation at Movinagher, an abandoned 17th-century Plantation village (extant bawn wall in background).
Photograph: Environment and Heritage Service, Northern Ireland



Portora Castle, Co. Fermanagh. Ulster Plantation castle and bawn built by Sir William Cole, Constable of Enniskillen, c.1613, now in state care. Photograph: author.



Urban archaeology in Belfast: Waring Street. Photograph: Environment and Heritage Service, Northern Ireland



After 'The Change': recent military heritage in Europe

John Schofield

Over the past decade our understanding of recent military heritage in the UK has increased dramatically. Building on work by enthusiasts and professional archaeologists, new research – much of it undertaken through English Heritage's Monuments Protection Programme, Research and Standards and the Characterisation Team – has provided valuable new insight. We now know far more about what was built for the defence of Britain and which sites have survived. We are in a better position to judge the relative merits of these sites; we understand what they mean to society, and to local communities. We have an agreed research framework which can guide future directions. And we have a better grasp of relevant conservation principles and practice. The subject is being incorporated into taught courses in historical archaeology and heritage, and the potential for undergraduate and postgraduate research projects is being realised. Much of this new information is accessible through www.english-heritage.org.uk/military.

Alltengrabow,
Brandenburg – mural
showing the progress
of the '3rd Soviet
Shock Army during the
Great Patriotic War'
Photograph: Wayne
Cocroft



Networks for the Cold War

Now heritage networks are starting to emerge across Europe and beyond, across the former borders of the Cold War. Early progress included conference sessions at the World Archaeology Congresses in 1999 and 2003, and at various EAA conferences. A new book emerging from WAC 2003 (*A Fearsome Heritage: diverse legacies of the Cold War*, ed John Schofield and Wayne Cocroft) documents and deconstructs the legacies of the Cold War on four continents as well as in outer space and under the sea. Authors include archaeologists, heritage professionals, anthropologists, museum curators, a cultural historian and four artists including one composer. Another example of successful networking is the SHARP project, described in TA 62.

These collaborative ventures promote interest in countries where recent heritage remains in its infancy and place sites within their global contexts. The well-documented cruise missile site at Greenham Common for example is one of six to have been built in Europe – how well do the others survive? What can we learn from a comparative study of them, and their influence on local communities and landscape? There are now three initiatives that are furthering international co-operation and paving the way for further pan-European and even global studies in this new and emerging field.

ICOFORT

In 2005 ICOMOS established an International Scientific Committee on Fortifications and Military Heritage to promote knowledge of military heritage, including its 'historical, architectural, artistic and

scientific values, and to encourage the preservation and maintenance of fortifications, military structures, fortress landscapes and other objects and sites connected with the military heritage'; to help ICOMOS accomplish its role in the context of international convention (specially the World Heritage and Hague Conventions); to carry out specialised studies, promote use of professional expertise; and pursue international co-operation over historic military sites. Expertise comes from countries such as the US, Poland, Hungary, the Netherlands, France, Spain and the UK. I am the UK's voting representative. We held a full meeting on the Channel Islands in 2006.

CULTURE 2000

Culture 2000 is funding 'Landscapes of War', which will generate and promote a public inventory of recent military sites and landscapes in Europe, documenting conservation policies, approaches and attitudes. It will establish a pan-European research framework, building on England's *Modern Military Matters* 2004. The project has barely started, but the resulting online archive (a virtual atlas is anticipated), books, and other publicity material will promote this subject. The lead partner is Regione Calabria (Italy) with English Heritage and the University of Coventry involved from the UK. Much of the English resource for this project is currently accessible through www.english-heritage.org.uk/pastscape.

EAC Cold War Group

The European Archaeological Consilium (EAC) is a network of those responsible for heritage matters amongst the states of Europe, providing opportunities for special interest working groups in topics such as aerial archaeology, maritime archaeology and now the Cold War era. In establishing this last group I was interested in promoting awareness amongst countries – especially in eastern Europe – for whom this heritage was either unfashionable, difficult (and dissonant), or just too recent. An inaugural meeting of the Cold War group in Krakow in 2006 agreed to focus on military sites, landscape and issues within the wider context of Cold War era society and politics. We anticipate an expanding group as this initiative gathers momentum.

We hope these three initiatives will work together, given the common interests in conservation, publicity and research. Several people are involved in two of these three initiatives, while I am involved with all three. With careful handling there is the potential for recent military heritage to emerge as a significant new area of cultural heritage and



Blankenburg, Harz
mountains, Germany.
1980s entrance into an
underground storage
complex for an East German
motor rifles division.
Photograph: Wayne Cocroft

conservation interest across Europe, paving the way for a wider consideration of the 20th century, something English Heritage is promoting through the Change and Creation programme (www.changeandcreation.org) (p16).

John Schofield
Head of Military Programmes
English Heritage
John.schofield@english-heritage.org.uk

ICOFORT members crossing
the causeway to Fort
Clonque, Alderney.
Photograph: John Schofield



Thamesmead. Photograph:
Matthew Walter



Thorpe Park. Photograph:
Anna Nilsson



The M1 in Herts.
Photograph: Matthew Walter



The Nicky Line Underbridge
of the M1 in Herts.
Photograph: Matthew Walter



IMAGES OF CHANGE

Sefryn Penrose

It is sometimes said that the post-war generation has witnessed more change than any other. True or not, access to this living history allows an archaeological eye to excavate the flotsam and jetsam of its haves and have-nots, its built environment, its brownfield wastescapes reclaimed for a new century. *Images of Change: An archaeology of England's contemporary landscape* (English Heritage 2007) provides a starting point for a deeper, more authentic, excavation of this landscape with an archaeological eye, but also an invitation to look harder at the post-war journey through a wider lens.

FAST-LIVED LANDSCAPE

Old quarry pits became country parks, theme parks, business parks; war time barracks became hospitals, holiday camps, prisons; the houses of the aristocracy became fossilised for the people along with the workings of the industrial revolution: the later 20th century has seen so much of the old world re-landscaped, re-sculpted as the economic and political status quo has ebbed and flowed. The old landscape of creeping villages, ribbon suburbs, railway growth, industrial towns and wealthy resorts has been replaced by the networks of 1945–2005 – most obviously the motorway system – that have created a fast-lived landscape of joined up self-contained units of designated space – industrial estates, shopping estates, housing estates – both public and private.

BLIGHTS, BLOTS, SCARS AND SCOURGES

After the Second World War, England's population began to be housed as never before, and was endowed with a mobility and autonomy that transmuted through affluence, miniaturisation, disposability into a series of landscape types. These were designed to sit in the emptying industrial landscapes or declined rural corners and to provide orbiting services to defence and commercial centres. England's later 20th century, like any period before, tells a story of changing circumstances, of shifting desires, moving people. Its hidden corners tell as many stories: the underpasses and spaces between cement blocks became empty canvasses for the 'outsiders' of this transformed population. As we walk through these sites now, the temptation is to dismiss them, tut at the mass-produced inelegance so influenced by modernism, curse the power station and super-shed as eye sores. Our vocabulary names them blights, blots, scars and scourges and so soon

after they were built they are being replaced by a new fast-build vocabulary of glass and steel. *Images of Change* offers the space to consider that our later 20th-century heritage is tomorrow's archaeology. The lifestyle of mass-production is now being dismantled and reworked even faster than it went up. Controversy over listing the Sheffield Park Hill estate or Newcastle's Byker may grab headlines but the Norfolk and Norwich District General Hospital, a bold monolith proclaiming all-inclusive national health has disappeared with a whisper, its land more valuable as a high-end private housing estate.

FRAGMENTS OF EXPERIENCE

Images of Change has sorted these landscape types into four fragments of the period's experience. *People* offers a ground-up view of social lives. Each type entry focuses first on a particular site, the here and now of Thamesmead, the M1, Saturday at Brixton Market, before zooming out to examine the chronological evolution of England's edge towns, new towns, motorway system, patterns of immigration. *Politics* unravels the activities of authority and government that have shaped our landscape since 1945: army barracks into open prisons as at Leyhill, Gloucestershire, the neatness of death in classical memorials, lawn cemeteries and the post-war boom in cremation. *Profit* examines how the landscape of profit has shifted from the high labour fields of industrial towns and agricultural areas into the contained units of service and support space: cotton towns to computer towns – Basingstoke and Swindon epitomise the growing and adapted work worlds that have triumphed over manufacturing and raw materials. *Pleasure* sees how the units of time that characterise the later 20th century's leisure time – from 45 minute pitch rentals, an hour at the gym, to a bank holiday at Thorpe Park – have left their traces in the spaces between our work-life and home-life.

Images of Change is the next step in the *Change and Creation* programme (www.changeandcreation.org): an archaeological dialogue on England's later 20th-century landscape. It brings the conversation to a wider audience, a tool for understanding our own journeys in our own landscape, to understanding the recent past from within.

Sefryn Penrose
Atkins Heritage



In addition to the authors, the Change and Creation Team are Victor Buchli (UCL), Dan Hicks (University of Bristol), Janet Miller and Andrea Bradley (Atkins Heritage) and Graham Fairclough and John Schofield (English Heritage)

The Van:

Screws and Christmas Crackers...

Adrian Myers



The Ironbridge Gorge Museum van. Photograph: Cassie Newland

Questions about the role of archaeologists and the methods we use were recently brought into focus by researchers at the University of Bristol, who in July 2006 meticulously excavated a 1991 Ford Transit Van (*British Archaeology* 92). The vehicle was donated by Ironbridge Gorge Museum, where it was used by archaeologists and then by works and maintenance people. With the excavation of this 'particular place' completed, analysis and interpretation is now underway. The exacting treatment of such an assemblage by archaeologists is, to our knowledge, unprecedented and so, as we work, we debate the different ways we might treat the assemblage, and the questions we might ask.



Fifteen years of deposits

At the time of excavation 'the Van' was a grouping of artefacts unique in time and place from diverse spatial and temporal provenances. Initially created at the Ford assembly plant in Southampton, the site became rich with fifteen years of intentional and non-intentional depositions. Most artefacts can be placed into one of two initial categories: parts of the van itself, and subsequently deposited artefacts.

Many of the parts of the van have unique manufacturer numbers and date stamps. Working to trace where and when each part was made, it is evident that assembly of the van was dependent on a complex, worldwide network of suppliers, from the UK to the US to India. With identifying marks, we could investigate the material evidence of maintenance, establishing if replacement parts are Ford products, or cheaper 'aftermarket' replacements. Should we categorise replacement parts as original components of the van, as deposited artefacts, or both?



Crackers and confetti

The assemblage of small finds represents the gamut of the van's usage: archaeology, maintenance, and 'play'. Certain finds don't fit within a strict interpretation of the 'official' mandate of a work van: fragments of a Christmas cracker, a single piece of confetti, dog hair, and cigarette butts (machine and hand rolled). Such finds suggest that the van was sometimes co-opted for unofficial uses.

The assemblage is dominated by artefacts associated with Ironbridge's works and maintenance department. Nuts, bolts, washers, screws, and nails, representing metal and woodworking, are ubiquitous. These are rivalled by the detritus of the work of electricians: bits of wire insulation, fuses, set screws, light bulb glass, a fluorescent bulb



Artefact surface scatter. Photograph: Cassie Newland

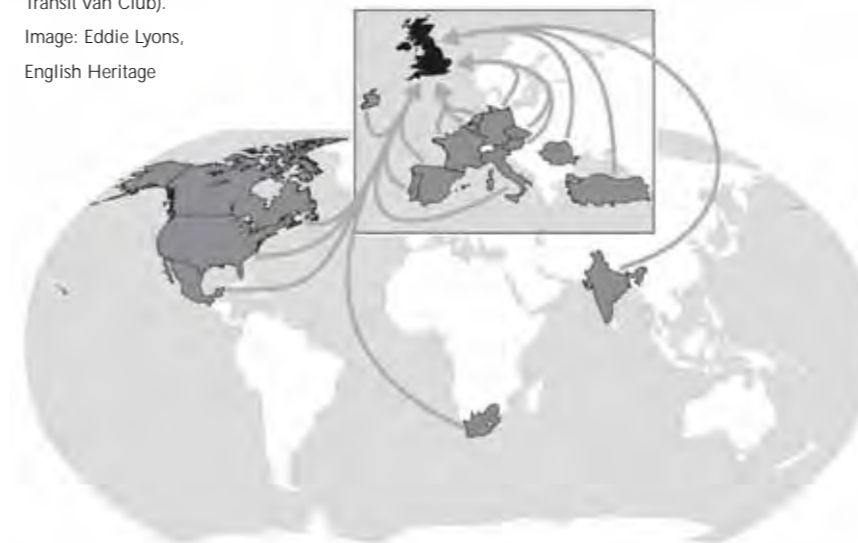
starter and various speciality fasteners. Electronics technicians from Bristol University's engineering department helped assess this artefact group, identifying items and testing fuses and bulbs. Preliminary findings demonstrate that about 30% of these discarded electrical artefacts are in perfect working condition. This would certainly inform a discussion about waste in the construction trades.



Misplaced artefacts

Something that is commonly found under a car's floor mats was strangely absent in the van: small change (whether this indicates something about archaeologist's low pay, we haven't yet determined!). In the entire van, only one coin was found: an 1893 silver threepence. The coin is part of a group we are calling the 'misplaced artefacts': finds from other archaeological sites that were excavated by Ironbridge archaeologists, and subsequently redeposited in the van (though the coin, traditionally included in Christmas puddings, could even indicate what diggers were eating in the van, as well as pulling crackers). The group includes a clay pipe stem fragment, bits of slag, and various ceramics. Perhaps these items simply fell out of finds trays. One interpretation is that these were in fact intentionally deposited – the little bits every archaeologist comes across that 'don't matter'. If this is so, then their presence may tell us something about how we ascribe value to archaeological finds.

Countries that supplied parts (source: Peter Lee, Transit Van Club). Image: Eddie Lyons, English Heritage



Fragment of a fluorescent bulb starter. Photograph: Adrian Myers



An 1893 silver threepence: evidence for Christmas pudding or lost small find? Photograph: Adrian Myers

Pioneering work by 'garbologist' WL Rathje, and more recent investigations by Victor Buchli and Gavin Lucas, have demonstrated that recently abandoned contemporary materials are a viable resource for social trends and values. The Van Project humbly aims to follow in this tradition. In applying our particular skills not only to the archaic, but also to the 'recent and contemporary past', archaeologists will continue their tradition of contributing to the better understanding of the present day.

Excavation of the van was undertaken by Cassie Newland, Greg Bailey and John Schofield (University of Bristol) and Anna Nilsson (Atkins Heritage). Greg Bailey's film *In Transit* was recently screened at IFA's conference at Reading. Follow this continuing venture at www.stillintransit.blogspot.com. Thanks go to: John Schofield, the Automobile Association, Sims Metal, the University of Bristol, Ironbridge Gorge Museum, Bristol Institute for Research in the Humanities and Arts, and the Transit Van Club.

Adrian Myers
University of Bristol
adriantimothymyers@gmail.com

Beetles from The Van

Steve Davis



Excavation of the Transit Van produced a variety of non cultural materials, including over one hundred dead beetles. By far the most abundant species was woodworm, a common and occasionally serious pest of seasoned timber. Some of these were well preserved and partially articulated, suggesting recent death. Thirteen other characteristic woodland taxa included taxa whose larvae develop in old timber, taxa characteristic of heavily decomposed timber, taxa which live upon the timber itself, taxa which are predatory upon primary timber feeders and woodland canopy taxa.

Human-dependent taxa were well represented, including three common and occasionally serious pests of stored grain; *Oryzaephilus surinamensis* (L), *Sitophilus granarius* (L) and *Cryptolestes ferruginus* Steph. All are common in urban archaeological contexts and have a long history of association with humans. A wide range of mould beetles were present, particularly those common in decaying plant debris. The assemblage included ten taxa characteristic of decomposing plant refuse, a single individual of the slow water genus *Helophorus* and relatively few phytophagous taxa. Of these, only two have specific habitat requirements; one lives on members of the borage family, and *Phyllotreta undulata* Kuts, a common pest of the *Brassica* family. Excellent preservation of woodworms implies these derived from a breeding population within the van. The composition of the wood, synanthropic and mould taxa also suggest these lived in the van. Woody taxa include several predators.



Cartodere constricta. Photograph: Steve Davis

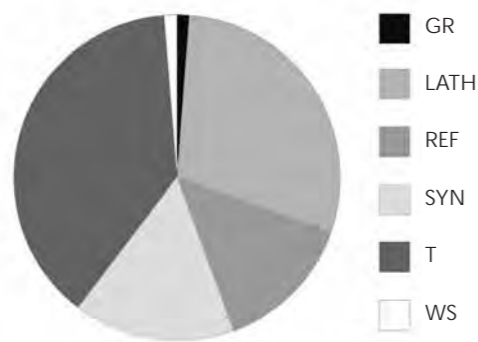
Synanthropic taxa are abundant and diverse enough to argue for deposition in situ. Perhaps the decomposing wood acted as an alternative habitat for 'grain beetles'. All three grain taxa have also been recorded from decomposing wood, albeit more rarely than their usually assumed environment. If the majority of phytophagous, hydrophilous and ground-dwelling taxa, comprising c 20% total individuals, have arrived accidentally or post-mortem, this implies that c 80% of the individuals were actually derived from within the van – in which case the vehicle supported a thriving coleopteran community including wood-borers, mould-feeders and predators.

Archaeologically this represents a building assemblage, containing relatively few obviously 'outdoors' taxa and a number of taxa characteristic of a 'house fauna'. The number and pristine state of the woodworm suggest an infested timber construction (presumably the plywood interior). An environmental context for the 'building' is suggested by the phytophagous taxa, characteristic of waterside environments. Finally, the assemblage includes components characteristic of stable manure, including taxa indicative of stored hay, grain, 'house fauna' and stable manure decomposition. This implies a nutrient rich compost containing traces of foodstuffs and deposited within a building, apparently the detritus of many years' field service.

Steve Davis
University College Dublin
stephen.davis@ucd.ie



Percentage breakdown of classifiable individuals within the van fauna (GR = grassland; LATH = Lathridiidae [mould beetles]; REF = Refuse; T = woodland; SYN = Synanthropic; WS = Slow Water. Image: Steve Davis.



Edinburgh's TRON KIRK

Martin Cook & John A Lawson

Development of the Tron Kirk on the Royal Mile in Edinburgh provided opportunities not just to record and laser scan the Kirk (IFA *Yearbook 2007*) but to complete the excavation of a section of post-medieval Edinburgh preserved beneath it.

The Tron Kirk was constructed between 1637 and 1655 for the congregation of St Giles' when the latter was made a cathedral. Earlier excavation had demonstrated that the Kirk sealed basement remains of post-medieval tenements either side of Marlyns Wynd, where the artefact assemblage provided a rare opportunity to study from an urban context a tightly dated and sealed assemblage of late 1630s domestic artefacts. In 2006 we revealed remnants of the post-medieval High Street of Edinburgh, with the foundation of a shop frontage and at least five cellars/rooms of associated buildings. These survived up to 2m in height and each room contained in-situ floor surfaces and occupation deposits. One produced seven Charles I 'taylor' coins.

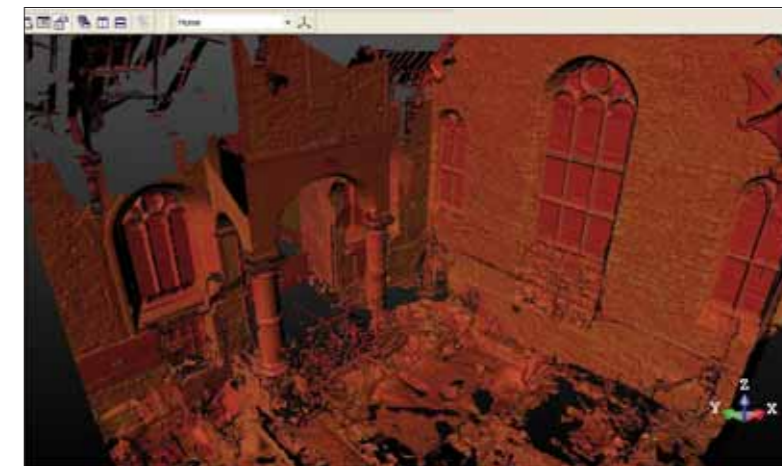
It was felt that the best way to display the site would be to cover the remains with a central glass floor with interpretative facilities at ground floor. 3D plans of the structures will be presented in the interpretation scheme, exploring the history of the site and the wider archaeology and heritage of Edinburgh's Old Town. During excavations, the Tron Kirk attracted over 1500 visitors, and this redevelopment should bring many more people through its doors.

Martin Cook
AOC Archaeology
martinc@aocscot.co.uk

John A Lawson
City of Edinburgh Council Archaeology Service
john.lawson@cecas.freeserve.co.uk



Former street frontage of Edinburgh High Street © AOC Archaeology Group



Screenshot of Tron Kirk Laser Scan Survey © AOC Archaeology Group

Atherstone:

The decline of a Warwickshire industrial town

David Gilbert

Excavations of slum tenement dwellings and converted industrial buildings in the centre of Atherstone, Warwickshire plotted the decline of working-class housing and industry within a small market town in the Midlands. The importance of such courtyard tenements to Britain's industrial heritage has been highlighted by the National Trust's presentation of 50–54 Inge Street and 55–63 Hurst Street, Birmingham.

Burgage plots

Maps of 1716 and 1786 show that the town retained its medieval character into the 18th century, with the area divided into burgage plots. Information about these plots on manor rolls held by

Warwickshire County Record Office document the development of Atherstone from the 1640s to the 1840s, the people who lived here, local industries and the building they erected. Maps from the 1880s still show narrow yards perpendicular to the main road, Long Street, containing terrace and back-to-back houses and factory buildings. The yards are named after either the public houses fronting Long Street or adjacent factory buildings. Photographs held in the Record Office still show some of these buildings in the early 20th century. The area remained relatively untouched until clearance orders of 1935. The Sanitary Inspectors map of 1956 shows that much had been demolished by this time.

Felt hats

Atherstone has always been famous for its manufacture of felt hats, and manor rolls that list smaller local industries of the 18th and 19th centuries paint a vibrant picture of cottage industry and market gardening, citing such activities as baking, potting, felt making, tanning and fellmongering, as well as associated shops.

Mixed uses

Excavations across eight of the terraces or yards showed varying levels of preservation. Remains of post-medieval buildings dating to the late 17th to 18th century were found underlying 19th-century housing and factory buildings, and sixteen large 19th-century buildings and several small out-buildings were recorded. The best preserved buildings were six houses of two rows of back-to-backs with associated outside toilets. Some 19th-century industrial buildings had later been converted into houses. One notable feature of the terrace houses were unusual arched foundations. It is not clear if this was a way of saving materials on already cheap housing or an attempt to prevent rising damp.

The terrace houses and out-buildings had been demolished to make way for a 50-man air raid shelter during the Second World War. This was itself demolished when a modern factory was built. For such a large building its foundations were quite minimal and it helped to preserve underlying archaeological remains. It also highlighted the need for careful excavations as the structures were very close to the surface and could easily have been mistaken for made ground or make-up layers for the factory floors.

Remains of local industries included a pottery kiln, tanning pit, rubbish pits and preserved dyed felt from felt or hat making.

Industries come and go

The excavations showed that as the town grew in the late 18th to early 19th century, the cottage

industries declined and their infrastructure was demolished and replaced with factories and housing for its workers. As the population rapidly expanded the sizes of the houses decreased. The industrial boom period came to an end by the early 20th century, with declining industries having their factory buildings demolished or converted to housing. This indicated the population was also declining during this period, which is backed up by census returns. In 1891 the population was 15,441 and in 2001 only 8293.

By the Second World War many of the slum terraces had been demolished, and in their place stood air raid shelters for the remaining inhabitants. These shelters were still standing in 1956 but were replaced with a textile factory trying to reclaim Atherstone's industrial glory. This closed in 1998 and was demolished in 2005 prior to the excavation followed by construction of an Aldi supermarket.

David Gilbert
John Moore Heritage Services
dg@jmheritageservices.co.uk

Excavation in progress of the converted industrial buildings.
Photograph: D Gilbert (JMHS)

A row of terraced houses excavated to floor level. This floor surface only survived in patches.
Photograph: D Gilbert (JMHS)



Alvins Yard, Atherstone c.1910. © Warwickshire County Record Office (PH213/30)



Arched foundations of the terraced houses. Photograph: D Gilbert (JMHS)



Recording in progress of 19th-century industrial buildings. Photograph: D Gilbert (JMHS)

THE PORTWALL LANE GLASSWORKS, BRISTOL

Reg Jackson



Part of the post-1785 cone. © BaRAS

Portwall Lane glassworks were established in 1768 by the firm of Warren, Cannington and Company on open land to the rear of houses and industrial premises on Portwall Lane and St Thomas Street. Documentary evidence shows that the firm were producing 'crown' or window glass which they exported in large quantities to North America. The business flourished, their premises were expanded and a second glass cone was built shortly after 1785. However, following the War of American Independence glass from England was heavily taxed to encourage the growth of America's own glass industry, and the war with France at the end of the 18th century disrupted Bristol's overseas trade. There followed a serious drop in glass production, and owners of the Portwall Lane glassworks went bankrupt in 1798.

• UNIQUE SURVIVAL

Although glass production was a major industry in late 17th- and 18th-century Bristol part of only one glass cone survives. Sites of most others have been destroyed by later buildings, a situation reflected in glass producing areas nationwide. The few previous excavations of glassworks have concentrated on the cones themselves, so Portwall Lane was perhaps a unique survival in that the majority of the glassworks, including the two cones, workshops, storerooms and yards, altogether covering about

When we excavated the site of the 18th-century Portwall Lane glassworks in central Bristol in 2006 the brief was unusual – remains of these nationally important glassworks must be preserved intact below the new development.

3500 sq m, lay beneath the development area. Under English Heritage's Monuments Protection Programme these were classed as 'nationally important'.

• PRESERVING *IN SITU*

The decision was made by Bristol City Archaeologist, Bob Jones, to preserve the remains below a new office building. Obviously this had serious implications for the design: there could be no basement car park, bases of lift shafts must avoid archaeology, the ground floor would need to be high enough to span the tops of 18th-century walls and pile positions must avoid or bridge the 18th-century structures. A rolling programme of archaeological and design work was implemented to avoid costly delays and extensive last-minute redesign. This meant Bristol and Region Archaeological Services, Deeley Freed Estates the developers, Sir Robert McAlpine the main contractors, Arup the engineers, and King Sturge the agents all working closely together before and during nine weeks of archaeological excavation.

• INACCURATE PLANS

Initially Arup produced a plan of pile positions and ground beams designed to avoid walls shown on an 18th-century plan of the glassworks. Drawbacks to this strategy were that the accuracy of the plan was in doubt and it also failed to show the location of the cone walls or internal detail such as the flues, fireboxes, furnaces, air passages and the massive central supports for the crucibles, known as 'sieges'. As the technology of glass cones was constantly evolving the internal workings of the cones and preservation of those structures was of crucial importance.

Despite the engineers' preliminary work final designs depended on what was found during archaeological work. Every alteration to the pile positions, the design of the piles and their grouping had large financial implications to the developers. It was also critical that alterations were finalised before completion of the excavation in order that the piling contractors could start work immediately, avoiding expensive delays.



The Portwall Lane glassworks: post-1785 cone bottom centre and the 1768 cone above and to the right. © BaRAS

• SOLUTIONS

As preservation was the priority, excavation was restricted to defining the extent and state of survival of the glass cones and other buildings, although more excavation was required within the cones to determine how they operated and how their complex internal structures could best be preserved. As soon as the various components were exposed they were recorded by archaeologists and their detailed plans passed to the engineers to compare with proposed pile positions, with amended pile plans produced. At weekly meetings, which included the City Archaeologist, solutions were sought which would ensure preservation but enable minimum alteration to the design. To the credit of all parties it did all work smoothly. Reasoned, though sometimes lively, discussions enabled solutions to be found, albeit sometimes expensive ones, such as the re-positioning or re-aligning of piles, pile caps, ground beams and services, and the use of steel beams to bridge glasswork structures.

Only half the 1768 cone lay within the site, but it was 21m in diameter which suggests the cone was at least 30m high. Sufficient of the furnaces, flues



and sieges survived to enable specialists in glass technology to determine how they operated. It is significant that there had been a radical change in the technology used between the 1768 cone and the post-1785 one, which was fully uncovered. This change in technology is just the type of information that is missing from the documentary record but can be revealed by archaeology.

The two Portwall Lane glass cones are shown on the left of this 1801 painting. Courtesy Bristol City Museum and Art Gallery

For more information about this site contact baras.org.uk.

Reg Jackson
Bristol and Region Archaeological Services

Excavating the Bow Porcelain Factory of London

Tony Grey and Jacqui Pearce

Excavations at Stratford, London E15 identified nine phases of occupation which included operation of the Bow Porcelain Manufactory, which was set up to imitate and undercut the trade in imported Chinese porcelain that was reaching Britain in considerable quantities. The factory produced some of the best known and most characteristically English porcelain made in this country, and was longer-lived and more prolific than almost any other 18th-century porcelain factory. It was in production c.1747 until the mid-1770s

Kiln furniture

The factory (also called the New Canton Works and Bow China Works) was founded by five partners, the most prominent and influential being Edward Heylyn and Thomas Frye. The existing site was redeveloped for the porcelain factory but it is uncertain whether existing structures were adapted or completely new ones initiated. There was no trace of kiln remains but large waste dumps included vitrified kiln bricks and other building material. Kiln furniture that had been employed within the kilns was widespread within these waste dumps. Prodigious quantities of kiln furniture included saggars (cylindrical containers for pots being fired within the kiln) of various kinds made either from coarse, heat-resistant, white-firing clay similar in character to refractory kiln bricks or from red-firing clay mixed with fine white clay. Other kiln furniture comprised the various stilts and supports needed to separate saggars and pots from their immediate neighbours including pegs of round section or triangular section, setter rings, pads etc. The pegs fitted through holes pierced in the sides of some of the saggars. Firing accidents could be discerned such as pottery fragments and contact scars stuck to saggars.

Bone china precursor



Part of the moulded figure of a Turk in biscuit porcelain

Fragments of moulds for shaping the porcelain were also present in the waste dumps in copious amounts. Some were used for producing whole pieces, such as figures, while others formed attachments such as handles. There were also moulds for relief decoration, including the distinctive and popular prunus sprigs. The ceramic body developed at Bow, incorporating calcined animal bone as an essential ingredient in the paste, was the precursor of English bone china.

Porcelain wares

Great quantities of unfinished or faulty porcelain and wasters were present in waste dumps, including biscuit-fired pieces (the first firing before painted decoration and glazing) and wasters from the second glaze firing. The assemblage included plain white porcelain made in imitation of Chinese *blanc de chine*, many sherds decorated in underglaze blue, imitating the ever-popular Chinese export porcelain, wares decorated in polychrome enamels and rare sherds with transfer-printed decoration. Tea wares predominate, and sherds from sauceboats, plates, baskets, cutlery handles and sweetmeat dishes were also found. Several fragments of figures included a Turk, a nun and a pug dog, in both biscuit and glazed ware. Many clay tobacco pipe fragments were excavated including a pipe bowl with the Hanoverian coat-of-arms, possibly made by Henry Blundell of Southwark (1745–64) and a pipe bowl bearing the stamped name J. JONES BOW within a shield,

possibly John Jones recorded as working in Mile End in 1799.

English Ceramic Circle

The factory ceased operation by the late 18th century and some of the dumped kiln furniture and ceramic wasters were incorporated in hardcore for ground-preparation for later buildings. The finds are currently being processed and assessed at MoLAS by in-house ceramic specialists working closely with members of the English Ceramic Circle. This is the oldest society dedicated to the study of British ceramics, aiming to advance knowledge by promoting and publishing new research, and

including amongst its membership collectors, curators, archaeologists, potters and social historians.

The excavations on the site of the Bow porcelain factory are of considerable importance internationally, presenting an invaluable opportunity for active collaboration between archaeological ceramicists and acknowledged experts from the English Ceramic Circle.

Tony Grey
Jacqui Pearce
Museum of London Archaeology Service

Moulded figure of a pug dog in plain white glazed porcelain



Sherds from cups and lids in plain white porcelain with sprigged prunus decoration



Porcelain sherds marked underneath the base with painter's numbers



Part of a cup and a teapot lid decorated with polychrome enamels

Part of a cylindrical mug with Chinese-style chrysanthemum and fence (left) and patty pan with scroll decoration (right), both decorated in underglaze blue



Complete mould for sprigged prunus decoration used on plain white porcelain

All photographs by Andy Chopping, MoLAS



RESIDUES of INDUSTRY and EMPIRE:

urban archaeology in the post- colonial age

James Symonds

19th and 20th-century industrial sites produced an enormous amount of waste material. Daisy Bank, a marl pit in Stoke-on-Trent was infilled with waste from the Potteries. Photo courtesy of David Barker, The Potteries Museum and Art Gallery, Stoke-on-Trent

'Just keep machining the overburden until you get to something interesting.' A harmless enough instruction one might think, but as anyone who was involved in urban archaeology in the '70s and '80s will tell you, this usually meant truncating sites to reveal medieval or earlier deposits. The shortages of time and funding that characterised urban rescue digs are well known, but the extent to which this led to the destruction of post-medieval deposits is a moot point. The changes brought about by planning guidance and the introduction of commercially-funded investigations have led to more work on urban post-medieval deposits, but the situation is still far from satisfactory and deposits from the last 250 years continue to be destroyed at an alarming rate.

Too plentiful deposits?

Some would argue this is no great cause for concern. The scale of production of many industries, along with the enormity of changes to urban landscapes by Victorian engineers, has left plentiful

deposits. It is easy to dismiss such large mixed deposits as having low archaeological potential, but they are finite and non-renewable. Their abundance and the difficulty that this may pose for sampling strategies, notwithstanding health and safety issues on previously developed land, should not be excuses to avoid appropriate archaeological resource management. It is heartening to see that English Heritage has recently published guidelines for investigation of 17th- to 19th-century industries (Dungworth & Paynter 2006).

Why do so many British archaeologists dismiss post-medieval archaeology? It is curious given that Britain's role as the birthplace of the industrial revolution has been recognised as its unique contribution to world heritage. It may be that post-medieval sites are simply too *familiar* to attract interest. The term *post-medieval*, traditionally AD 1450–1750, is also unhelpful, leaving the modern world isolated as a kind of *post-post medieval* period.

Global archaeology

One way forward, as Marilyn Palmer suggests (p9), is to embrace the internationally-recognised term *historical archaeology* for the period 1500 to present. This term has been adopted by several university departments, leading to a proliferation of taught

postgraduate courses and the appearance of several text books. The idea that the Post-Columbian period, which saw the development of capitalism, and the impact of European colonialism upon indigenous peoples around the world, could form a coherent field of study was advanced by the American archaeologist James Deetz, and more recent scholars have developed this idea to suggest that the focus of study within this period should be the archaeology of capitalism. Others have called for a 'global' archaeology of the modern world, with the instruction 'think globally and dig locally' (Orser 1996). Critics of this approach have stressed that such ambitious schemes smack of neo-imperialism, and tend to gloss over local responses to capitalism and colonialism in favour of grand narratives (Gilchrist 2005).

Webs of interaction

One of the main points arising from this academic debate is that the clay pipe stems and transfer-printed sherds that litter the spoil heaps of urban excavations can no longer be dismissed as the least interesting aspects of a purely local story. They should instead be recognised as vital material evidence for the webs of interaction that linked Bristol merchants to the Caribbean, Sheffield knife-makers to the American West, or Stoke-on-Trent potters to the gold fields of southern Australia (Lawrence 2003, 2006). Advances in information technology and internationalisation of academic and world heritage networks have encouraged closer cooperation between different regions. It is becoming clear that when we attribute a low cultural significance to an 18th- or 19th-century deposit and machine it away then we are erasing one element of a network of global interaction.

But isn't historical archaeology just an expensive way of finding out what we already know from history? Well, no, and we should have the confidence to point out that the material histories that archaeologists assemble offer different but valid representations of the past. Archaeologies of the British imperial age meanwhile need to avoid the risk of being unintentionally triumphalist. It is certainly necessary, for example, to resurrect the concept of the 'workshop of the world', but only to reunite this industrial powerhouse with the global markets which it served, and the places where British manufactured goods were consumed. The movement of people and things took many forms in the colonial world, and the wider challenge is to show how successive British governments and entrepreneurs scoured the globe for raw materials, foodstuffs, and profit, and how this impacted upon the experience of everyday lives.



Mug and bowl from Stoke on Trent, excavated in Halifax, Nova Scotia. On their return journey to the timber colony of Nova Scotia ships often carried British manufactured goods. Photo courtesy of Steve Davis, St Mary's University, Halifax, and Davis Archaeological Consultants Ltd



By re-discovering traces of the 'world in the workshop' our work has the capacity to contribute to contemporary post-colonial debates on identity, multi-culturalism, and sustainable development.

James Symonds
Director
ARCUS
University of Sheffield

Ceramics from an Australian whaling station in Tasmania. In 1839 shops in Hobart sold imported English transfer-printed plates at six shillings per dozen, less than half the cost of tin plates. Photo courtesy of Susan Lawrence, La Trobe University, Melbourne

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THE ALDERLEY SANDHILLS PROJECT

Eleanor Conlin Casella

How did ordinary English rural working-class households maintain and improve their conditions of everyday life from the late 17th to the mid-20th century? This project focused on the domestic and residential sides of the Industrial Revolution, reflecting a new interest in the 19th- and 20th-century archaeological assemblages.



Hagg Cottages in the 1930s. Photograph: courtesy of R Barber

HAGG COTTAGES, ALDERLEY EDGE

Alderley Edge is a natural rocky outcrop looking across Greater Manchester and the Cheshire plain. The region was mined for copper during the Bronze Age and Romano-British periods. During the 1850s, a series of Italianate 'villas' was constructed and sold to mill barons desperate to escape industrial Manchester. At the same time, an early rail line linked central Manchester to the growing service town, making Alderley Edge one of the first commuter suburbs of Great Britain. From the 1780s to the 1890s, the Edge was extensively mined for copper, lead and cobalt. The region thus supported a mix of agricultural, industrial and service based economies.

MEMORIES OF COTTAGE LIFE

Parish records indicate that the main cottage was built during the 1740s in a local style known as a Stanley type cottage. This was a two-storey brick Georgian structure, characterised by chimneys on each end and a central entrance gable. Around the Alderley region these were originally built for agricultural tenant farmers by the local squire as an estate improvement. The date of construction and original function of the second building was unknown, although excavations revealed an unexpected pipe-stem date of c.1650-1670, suggesting a possible late 17th-century origin.

During the early 19th century the cottages were internally subdivided and leased to four households of workers from the Alderley Edge Mining Company. By the turn of the 20th century, mining activity had ceased, and occupants of the cottages,

Roy Barber, Edna Younger (nee Barrow), and Molly Piltcher (nee Barber), site visit September 2003. Inset: Edna Barrow, Roy Barber and Molly Barber at the Hagg, c.1930. Photograph: courtesy of E Younger



Flooring types at Alderley Sandhills, 2003. Photograph: Alderley Sandhills Project



the Barrow, Ellam, Perrin, and Barber families, all worked in the service economy of Alderley Edge village. Members of these families were enthusiastic project participants, their childhood memories providing an intriguing oral history collection now archived at Manchester Museum. The cottages were occupied until after the Second World War, and were demolished during the early 1950s.

EXTENSIONS AND INCOME GENERATION

Following geophysical and topographic surveys, excavation trenches were opened over structural remains of Hagg Cottages. While the cottages were constructed and occupied at a time of socio-economic continuity, and reflected the durability of community presence within the landscape, they and their inhabitants soon had to adapt to change.

Economic flexibility required of working-class inhabitants was materially expressed through sequential vernacular additions, adjustments and adaptations of the built environment. Excavations revealed a brick lean-to addition on the southern side of the 1740s Stanley cottage, floored with a patchwork of mid-Victorian black and red stoneware quarry tiles. With the mid-19th century establishment of railroad distribution networks, locally produced building materials, including the excavated sandstone flagged floors of the Stanley cottage, were gradually replaced by decorative architectural ceramics manufactured by Midlands' industrial potteries. Since access to the vernacular extension was gained through a kitchen, we interpreted it as an elaboration of domestic workspace added to the 18th-century cottage, probably related to diversification of income-generating activities by household members.

MOTHERS AND WASHING

Oral histories related to the southern cottage demonstrated similar patterns of continual architectural additions, recycling, and reuse. The immediate exterior space around the cottage was particularly adaptable for income-generating activities. When questioned about the location of the front door, Mrs Edna Younger instead related her mother's use of the area for laundry. Contributing to the family income by taking-in laundry from local elite households, her mother had positioned her washtub and mangle next to the exterior drain, thereby adapting the paved courtyard as an extension of her workplace. Mrs Younger could not remember the location of the front door; as a child, she had always used the kitchen entrance. Her memory illuminated a crucial point regarding working-class settlements: the fluidity between domestic spaces and work-related spaces. These

residential sites operated as places of production as much as of consumption. By interpreting the Hagg Cottages as representations of a flexible strategy for socio-economic survival, the Alderley Sandhills Project has produced new perspectives on the durability of occupation, material culture and status in the working-class worlds of rural England over the recent Industrial to Post-Industrial transition.

Undertaken in partnership with Manchester Museum, and funded by English Heritage through the Aggregates Levy Sustainability Fund, this was the first project funded by English Heritage to focus on domestic and residential sides of the Industrial Revolution, and reflected a new interest in the collection and conservation of 19th and 20th century archaeological assemblages. The project has maintained a website for on-line delivery of results. Popular zones included a 'dig diary,' updated weekly during the 2003 excavation season, and a 'collections gallery'. For a digital tour see www.museum.man.ac.uk/ASP/index1.htm. A final report will be published through Manchester University Press in 2008.

Eleanor Conlin Casella
Senior Lecturer in Archaeology
School of Arts, Histories and
Cultures
University of Manchester

Amber glass Boddington's beer bottle, with 'internal screw' finish from Alderley Sandhills. Photograph: G.10 (University of Manchester), courtesy Alderley Sandhills Project



Porcelain doll, with polychrome paint. Photograph: G.10 (University of Manchester), courtesy Alderley Sandhills Project



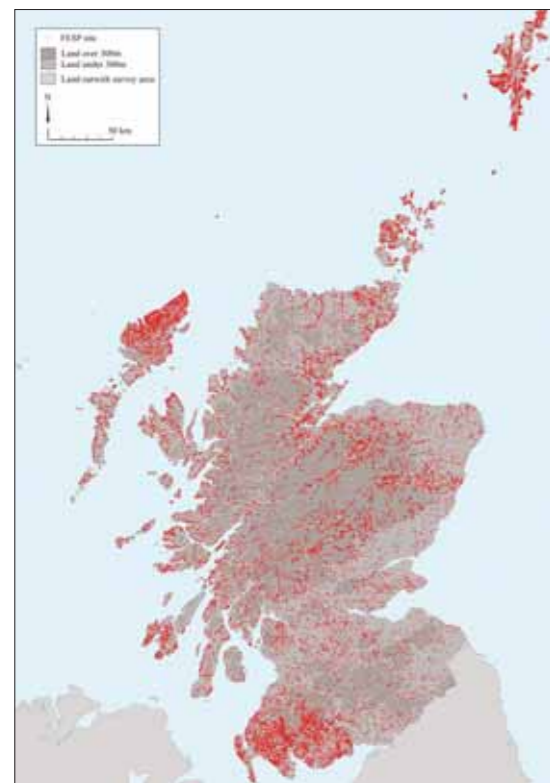
A typical rural dwelling with thatched roof, many of which were recently inhabited. Crown Copyright: RCAHMS



Abandoned rural settlements, such as these buildings on Eigg, are familiar sights in the Scottish landscape. Crown Copyright: RCAHMS



What's happening to Scotland's rural past? Tertia Barnett



Although many parts of Scotland are sparsely inhabited today, this is quite a recent pattern. Until 200 years ago, around 80% of the population lived and worked close to the land. Literally thousands of abandoned buildings, overgrown walls, old field systems and enclosures litter the countryside, an eloquent reminder of this rural past. However little is known about these settlements or the lives of the people that occupied them. Until recently, historic rural settlement remains have not been considered archaeologically significant and have rarely formed the focus of serious academic study. The vast majority are unprotected, and this incredible material resource is rapidly fading away through neglect, the impact of construction work and changing demands of modern farming. There is now growing concern to locate, identify and document abandoned rural settlements across the country if we are to better understand this important part of Scotland's past, make it available for further study and preserve it for the future.

■ Abandoned townships and farmsteads

Between 1995 and 2001, RCAHMS completed the First Edition Survey Project (FESP) to address this shortfall in our knowledge. This project

The distribution of settlements depicted as 'unroofed', and therefore abandoned, on Ordnance Survey maps (1843-1878). Crown Copyright: RCAHMS



A range of archaeological survey techniques are being used to record sites at different levels of detail, including measured survey and photography. Crown Copyright: RCAHMS

recorded all structures depicted as unroofed – ie abandoned – when Ordnance Survey maps were created between 1843 and 1878. Over 22,000 abandoned townships and farmsteads were recorded, representing over a fifth of known archaeological sites in Scotland. Although locations have been added to the RCAHMS database, very few have been visited or surveyed in any detail. Many more remain undocumented, either because they were deserted since the creation of the First Edition OS maps, or because they were overlooked by 19th-century surveyors – a not uncommon occurrence. The wealth of archaeological material encapsulates a vital period of social history, including dramatic changes during the agricultural and industrial revolutions.

■ Training volunteers

Building on the results of FESP and following the incentive of the Historic Rural Settlement Group (a research organisation comprised of academics and heritage agency representatives), RCAHMS, HLF, Historic Scotland, the National Trust for Scotland and Highlands and Islands Enterprise are funding Scotland's Rural Past (SRP), a five year, nationwide initiative to enable local communities to research, record and promote abandoned rural settlements in their area. The four-strong SRP team will work closely with local volunteers to design and develop projects based on their ideas and areas of interest – whether this is recording sites or researching the history of the area and the lives of past rural communities. The current estimate is for forty local projects, each lasting 1-2 years on average. This number may rise if enthusiasm is high. Techniques will include field survey and recording, historical document research, oral history and place name analysis. Training and guidance are offered, and RCAHMS surveyors and archaeologists are providing support through intensive field courses. SRP field officers will also provide bespoke training for each local group. Survey equipment, including plane tables, hand-held GPS and digital cameras, will be available.

The intention is also to train volunteers in historical document research, drawing on the unique and abundant archive material in Edinburgh and on local archive sources. As SRP matures, there may be training in areas such as palaeography and 3D recording. People will therefore build up skills, expertise and confidence to facilitate their own research in addition to contributing to a better understanding and awareness of Scottish rural history. Volunteers will be encouraged to promote access to rural history through heritage trails, publications, photographic projects, plays, poetry, and much more.

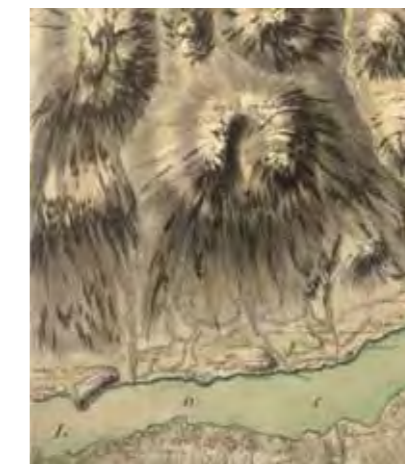
■ New audiences

The SRP interpretation officer will work with schools to develop educational material integrated into the National Curriculum. Ideas and experiences will be shared through the project website and group interaction. An annual workshop will provide a context for discussion between volunteers and practitioners, and the SRP team will tour Scotland publicising projects.

SRP has started to tap into the immense enthusiasm for rural history. Volunteers have already demonstrated huge commitment to the project, boding well for a successful project over the next five years.

Tertia Barnett
SRP Project Manager RCAHMS
John Sinclair House, 16 Bernard Terrace
Edinburgh 0131 662 1456

www.scotlandsruralpast.org.uk
srp@rcahms.gov.uk



Historical documents such as this map of Loch Tay form a crucial part of volunteer investigation. Copyright: British Library, Licensor SCRAN



Chemical weapons production and filling sites in Britain

WAR & PEACE:

recording sites from the post-medieval world

Kirsty Nichol and Kevin Colls

Post-medieval development in Britain shaped much of the rural and urban landscapes we see around us. Birmingham Archaeology has been involved in excavation and recording many sites of this date of widely different natures, using historical research and archaeological fieldwork together to build up comprehensive pictures of past landscapes.

Chemical warfare in the Welsh valleys: Rhydymwyn, North Wales

North Wales is well known for lead mining and the valley of the River Alyn, in which Rhydymwyn sits, is no exception. Mining in the area was extensive, and a mid-19th century geological section through



A small section of Rhydymwyn today

the workings depicts a number of shafts with associated adits. Following closure of the mines in the early 20th century land reverted to agriculture but, in 1939, it was purchased by the Ministry for Supply and developed as one of the first purpose-built chemical weapons facilities in the UK: the innocuously named MS Factory Valley.

Provision for mustard gas

Industrial chemical warfare had begun in 1915, when the Algerian Division of the French Army at Ypres was attacked with chlorine gas. The effects were devastating and the front collapsed. Development of mustard gas followed. During the interwar period most research was directed at more effective respirators and other forms of protection but, as war clouds gathered, it was decided that the ICI Randle site, Runcorn, should be used for gas production, and in 1939 Rhydymwyn was purchased for below-ground storage, with provision for manufacture of chemicals, as well as the charging and packing of artillery shells, air bombs and sprays. The area was scientifically planned and divided into distinct and separate zones characterised by the activities or processes undertaken within them, ensuring that cross-contamination was kept to a minimum and that secrecy was maintained. Staff and welfare facilities were also of a high standard.

Testing for the atom bomb

Over a hundred specialised buildings were constructed, linked by an extensive rail network established around a spur off the Chester to Denbigh mainline. Other major landscaping included canalisation and culverting of the River Alyn, and excavation of a complex of interlinked subterranean tunnels and caverns into the limestone hillside for storage. Building P6 was completed but the plant never installed; instead the building was taken over by the 'Tube Alloys Project' (forerunner of the 'Manhattan Project') where mechanical testing of the gaseous diffusion process for the atom bomb was developed. Naturally, this research was at the highest security level, and the building was given its own separate compound within the factory site, where engineers and scientists worked.

Activities on film

MS Factory Valley was chosen as the backdrop for a training film in 1944, only recently rediscovered, which shows the now empty buildings bristling with people and activity. The process buildings were finally decommissioned in 1948, after which the site was used to store German nerve agents. In the late 1950s, when Britain unilaterally relinquished its



How the site at Rhydymwyn was utilised

offensive chemical weapons capability, the chemical storage facility became defunct. After a period of use to store emergency rations and foodstuffs, the site was finally closed in 1994.

The site is being developed as a nature reserve and remains a fascinating and evocative example of industrial and military archaeology, so an Historic Environment Management Plan was commissioned from Birmingham Archaeology by DEFRA. Documentary research, survey, and building recording revealed good survival of the relict industrial lead mining landscape, whilst the physical remains of the later chemical factory tell a wider story of Britain's intention to defend herself. Such a well-preserved group of buildings of this type do not survive elsewhere in the UK, and links with the earliest practical development outside a university physics laboratory of processes associated with the atomic bomb place Rhydymwyn on the international stage. It is planned to use this historical significance to increase the site's value as an educational resource.

Services for beauty: Aston Hall

Very different was Birmingham Archaeology's work at Aston Hall, Birmingham. The aim of this excavation was to rediscover the north range of

WAR

The below ground foundations of the north range, Aston Hall



The remains of an icehouse

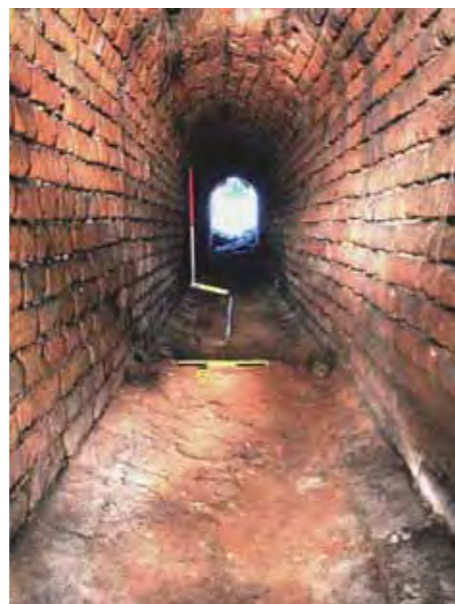
Aston Hall stable court, demolished over 135 years ago. Aston Hall is one of the finest Jacobean houses in the country, built by Sir Thomas Holte between 1618 and 1635 on a sandstone ridge. The next 200 years in the life of the hall, stables and gardens saw many changes that reflected the

varying fortunes of the family, as well as more general social changes in fashion and design, mores and technologies. By the late 1860s, the north service range was reported to be very dilapidated, and instead of repairing it the architect recommended demolition – ostensibly to open up another view of the main house.

No great house like Aston Hall could function without a vast array of services - the dirty work that underlay a privileged lifestyle for the rich and famous. We actually know far less about life in the service ranges than that in the great house itself, because few service ranges survived without considerable alteration, and many have been demolished. Demolition here has meant that foundations and floors have been preserved beneath the soil which, while it makes interpretation difficult, presents us with archaeological remains that offer a unique opportunity to revisit and reappraise historical documentation.

Washrooms and boilers

From records it is difficult to interpret precisely where things were located outside the main hall but they do tell us that in 1654 there were a wool house, laundry chamber, bake house, brew house, wash house and malt house. An inventory of 1794 has a similar list, with the addition of a granary, keeper's house, slaughterhouse, drying room and a chamber over a bake house, but these are only partial snapshots of the changes that took place. Excavations revealed a more complex picture. A large culvert



A culvert beneath Aston Hall

running underneath the building must have drained from the hall, and several drains feed into this culvert, the sheer numbers of which are suggestive of a laundry or washing function. Large spreads of ash, coal and clinker have also been found, possibly waste from a boiler, together with a succession of plaster, brick and cobbled floors. Several later additions have also been found to the north side of the range, including the brick dome of a possible icehouse.

The quality and style of the main build is similar to that of the earliest parts of the hall, although there are also several phases of later modifications right through into the 19th century. Archaeological work has added a great deal to our understanding of the development and everyday workings of the life of this great house.

Kirsty Nichol, Steve Litherland, Leonie Driver, Eleanor Ramsey, and Malcolm Hislop were involved in this work, while the complex project at Rhydymwyn included Grant Webberley (DEFRA), Paul Duffy, Dave Williams, and Sando Citra (Citex), Jeff Spencer and Ian Bapty (CPAT), Wayne Cocroft (English Heritage), Martin Brown (MoD), Peter Bone, Nigel Pearson and Timothy Peters, also Chris Hewitson and Phil Mann (Birmingham Archaeology). For further information about this site go to www.rvsweb.org.uk.

Kevin Colls
k.s.colls@bham.ac.uk

Kirsty Nichol
K.L.Nichol@bham.ac.uk

Birmingham Archaeology's specialist building recording team has just surveyed two remarkable buildings. These are contrasted in design and function but are both essential to understanding aspects of our industrial heritage.

The Royal Theatre, Cradley Heath, is an early example of a purpose-built cinema, constructed in 1912 and opened the following year. The building retained the stage of earlier theatres, which was utilised for performance of variety acts between films but, having been erected only three years after the Cinematographic Act of 1909, was custom built to reflect the safety standards required to house cinematic equipment. The Theatre had a simple layout, with a projection room at one end and a stage and screen at the other, the auditorium showing nothing of the fan-shaped plan that was to evolve as designers developed a distinct architectural type removed from theatrical influences.

Floor plans and analytical descriptions were prepared, but the most useful technology was a Leica laser scanner which captured the principal elevation in 3D, allowing more detailed drawings of the decorative terracotta and sandstone dressings to be produced in AutoCAD at a later stage.

Analytical assessment at Tutbury Mill, Rocester, Staffordshire revealed a site with a long history in the production and processing of textiles. Located on the outskirts of a Roman fort and settlement, the site is within the immediate environs of an Augustinian abbey and may have served as the abbey's watermill. It also contains structures built by Richard Arkwright, one of the key catalysts and personalities of the Industrial Revolution and credited with the invention of the spinning frame in 1769 (later renamed the water frame following the transition to water power). Knighted in 1786, he designed the world's first water powered cotton mill at Cromford, Derbyshire in 1871. Seven separate phases of post-medieval construction began with the mill constructed by Arkwright in 1781 and ended with 20th-century additions.

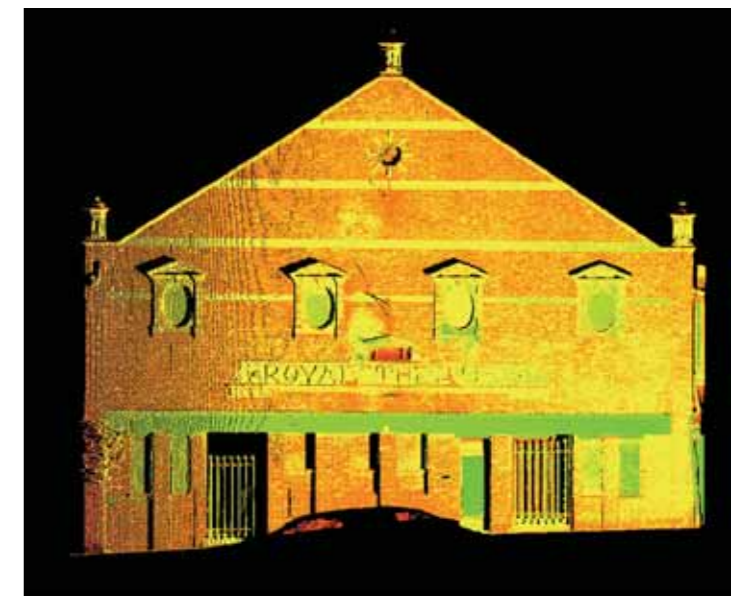
Michael Lobb
iaa-lobbm@adf.ac.uk

Shane Kelleher
fau-kellehers@adf.bham.ac.uk

WORK & PLAY:

recording post-medieval buildings of the Midlands

Michael Lobb and Shane Kelleher



Royal Theatre laser scan.
© Birmingham Archaeology

Tutbury Mill. © Birmingham Archaeology



The hidden history of Harris

Kevin Colls and John Hunter

Harris, one of the islands of the Outer Hebrides, has appeared less archaeologically-rich than its neighbours. One reason may be the extreme topography of Harris – from steep mountains to machair – in which earlier settlement remains may have been subsumed under blanket peat or sand blow. However, little attempt had been made to undertake a systematic analysis of the current Harris landscape until 2004, when partnership between the University of Birmingham (with Birmingham Archaeology) and the Harris Development Trust Ltd undertook a programme of survey and excavation. Important prehistoric evidence was identified, but also a wealth of post-medieval archaeology. **Blackhouses and shielings**

The diversity of post-medieval archaeology, much dating to the late 18th/19th century, forms an important data-set for interpretation of the complex present landscape and its evolution. Many sites had not been recorded elsewhere, even cartographically. The project recorded both upstanding and buried archaeology, the most abundant of upstanding remains being post-medieval houses and shelters, such as blackhouses and shielings. Some were in excellent condition in isolated locations.

Distillery?

The most striking below ground archaeology was along the coast at Borve, where field survey in 2005 encountered a substantial structure buried beneath the machair (fertile low-lying raised beach). Full excavation revealed a number of construction phases and, although only residual dating evidence was recovered, there were several features, including a large kiln. This may have been for drying grain but other interpretations, such as distilling, are also feasible, which suggest an early post-medieval date. However, postholes beneath the clay floor suggest a much earlier structure also stood on this site.

The work at Borve stands testament to the importance of recording and understanding such remains. Although relatively recent in date, there is no documentary or cartographic evidence depicting a settlement at this location. This area of Harris was abandoned in the early 19th century as part of the clearances, and no oral history account records an industrial complex here; nor is there evidence for settlement on First Edition Ordnance Survey maps. The pottery from within the building could date from any time between the 14th to 18th centuries, and many finds were from post-abandonment deposits.

Already the project has added some 800 sites to the SMR for the Western Isles, most of post-medieval date. The imbalance is beginning to be redressed and Harris will no longer be viewed as the poorer archaeological relation in the Hebrides.

Kevin Colls
k.s.colls@bham.ac.uk

John Hunter
j.r.hunter@bham.ac.uk



All images by Birmingham University

A beehive shieling complex



The remains of a Harris blackhouse

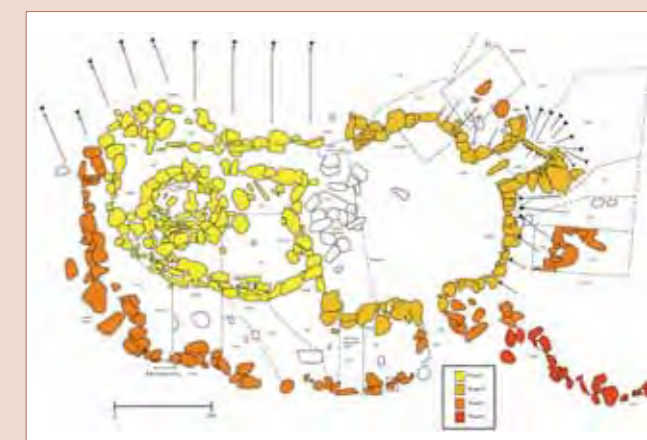


The Borve kiln or distillery

Harris



The Borve building within its landscape context



Phased plan of the Borve structure, by Caroline Sturdy

INDUSTRY, IMAGE and IDENTITY – archaeology on the Whitehaven coast

David Cranstone



A post-medieval landscape at Whitehaven, with varied industrial and military features and a harbour linked to the slave trade. Photograph: David Cranstone, Cranstone Consultants

A major theme of post-medieval archaeology is the rise of industry and industrialisation – the archaeology of industry in its broader context. That has come across strongly for me in a recent landscape survey at Whitehaven in Cumbria for the National Trust, commissioned to ensure that plans for development and management of this coastline were sensitive to the superb historic environment.

Most advanced colliery

This two-mile strip along the coast from Whitehaven Harbour to St Bees Head contains three major coal industry monuments (Saltom Pit, Haig Pit, and Duke Pit fanhouse), and a scheduled gypsum mine, but the landscape has turned out even more interesting than this. In the Middle Ages the area was divided between two townships, both under the control of St Bees Priory, and the Priory had an early coal-fuelled saltworks on the coast. After the Dissolution, the Lordship and mineral rights to one township (Sandwith) passed to St Bees School, and the other (Preston Quarter) passed through various lay hands until the 1630s, when it came to the Lowther family. The Lowthers (later the Earls of Lonsdale) were not well-loved in Cumbria, much of which they eventually owned. Within the Whitehaven area they ruthlessly built up their landholding, concentrating on coal mining. By the early 18th century the mines formed perhaps the

biggest and most advanced colliery in England, and the Lowther's colliery agent, Carlisle Spedding, was responsible for some important technical advances. Saltom Pit was the first undersea colliery in England and the deepest in the country. But Spedding's touch on the surface was not as competent – a new harbour at Saltom was an expensive mistake, and some of his wagon ways were unsuccessful.

Pretence of defence

Most of the standing colliery remains date from the 19th century. They include an 1820s vertical-winder engine house at Saltom, an enormous chimney modelled on one of Lord Lonsdale's candlesticks at Wellington Pit, a fine fanhouse (for colliery ventilation) at Duke Pit, and an array of castellated revetments, coal drops, and inclines above the harbour and staithes from Wellington to Duke Pits – this whole skyscape was towered and crenellated, forming a major statement by Lord Lonsdale. But precisely what statement is less clear: Lonsdale's feudal power over the town? Connotations of Lonsdale as defender of the town? A reference to the Border Wars against Scotland? An expression of Lonsdale's anti-Americanism? (Whitehaven was raided by John Paul Jones in the American War of Independence – and an earlier generation of Tory Lonsdales, and their pro-American Whig neighbours, the Dukes of Norfolk, had replayed the War of Independence in their castellated farms



A graffito in a sandstone quarry looks very like Stalin – is someone expressing an opinion on power and exploitation seen in the landscape around him? Photograph: Simon Roper, Ironbridge Archaeology

named after victories of their respective sides, across the landscapes of their Lowther and Greystoke estates near Penrith). To some contemporary observers, the fortified landscape may also have conveyed defensiveness, and to the modern eye even a hint of Mordor, statements presumably not intended by the Earl of Lonsdale.

The collieries declined in the 20th century and closed in 1986. But the engine house, winding engine, and headgear of the last colliery, Haig (sunk in 1916), survive, giving an archaeological range from medieval landscape to 20th-century brick, steel, and concrete structures. And there were freestone quarries along the sandstone cliffs of St Bees Head from at least the 17th century to the 20th, alabaster and gypsum mines (and a 19th-century museum) in the undercliff below, and a massive post-War chemical works (producing phosphate chemicals for detergents), demolished during the survey.

Core issues

Links between industry and the rest of archaeology are summed up by three images. A small graffito carved in one of the sandstone quarries looks like Stalin – a working person's response to the power and exploitation expressed in the landscape around him? In a view taken from the north of the study area is the Wellington Pit chimney, with the harbour behind and the line of a wagon way (not visible) zigzagging across the foreground – 'industrial archaeology'. The building is an 18th-century inn with contemporary bowling green behind, a small 19th-century fort built into the wall of the bowling green, and a small 20th-century structure (possibly a Second World War shelter) in front – industrial archaeology? But the harbour, as well as being a fine



A view north across the study area, where an ancient landscape was swept away. Photograph: Simon Roper, Ironbridge Archaeology

piece of engineering, was also where sugar was imported from the Caribbean and tobacco from Virginia, and where John Paul Jones brought the American War of Independence to British soil; so the archaeology of slavery and colonialism is in the picture too. And the hills in the background are Scotland, raising more issues of identity. Those are core issues within 'post-medieval' archaeology now, but hardly 'industrial archaeology'. Whatever term we use, we need to look at it as a whole and to see it as perhaps the most exciting, relevant, and at times uncomfortable period of British archaeology.

Finally, there is a view north across the study area from the sandstone cliffs of St Bees Head. Behind the camera is the 'ancient landscape' of Sandwith township, with curving 'stone hedges' (some fossilising a huge and perhaps early oval enclosure), and enclosed strip fields – a landscape of continuity, of negotiation, and of balanced rights and responsibilities. In front is Preston Quarter, where a similar ancient landscape was swept away by the Earl of Lonsdale in the 1820s and replaced by ruler-straight boundaries at right angles to his colliery incline – a landscape of dislocation, and of imposed power and control. To this day, they feel very different (I am more comfortable in Sandwith than in Preston Quarter, which says something about me as well as the past), yet that junction of landscapes reflects a medieval township boundary, and the arrangements made at the Dissolution – 'post-medieval' and 'industrial' archaeology are part of a long story.

David Cranstone
Cranstone Consultants
cranconsult@btinternet.com

A post-medieval Cattle Market Bury

John Duffy

Excavations have just finished on the site of the former Cattle Market, Bury St Edmunds, involving detailed examination of a purpose built 19th-century cattle market and several 17th- to 20th-century street frontage properties.

Barns, orchards and gardens

The site lies outside the medieval town defences of Bury St Edmunds. A deed, dated 1403, indicates an extra-mural lane running through this area, forming a link between the two western gates of the town. No structural development was identified until the post-medieval period and the evidence is that the

site was in agricultural use when, following the dissolution of Bury Abbey, the town defences were breached and the town ditch filled in, making land outside of the town more accessible. During the 16th and 17th centuries St Andrew's Street was properly established and development started to the west. Deeds and accounts indicate the development was agricultural, with barns, orchards and gardens. Archaeologically this is difficult to identify, though postholes along the street frontage suggest non-domestic development.

Suburban housing

In the 18th century development along the street frontage increased, with more formal tenements along St Andrew's Street. Fences (identified by postholes) marked boundaries between properties. Along the street frontage more substantial domestic buildings were constructed with flint and mortar.

at St Edmunds



Warren's Map, 1747 (left), Payne's Map, 1834 (middle) and First Edition OS Map dated 1881 (right), with excavation area shown in red

Three separate buildings indicate more permanent occupation than in earlier centuries. By the mid-18th century development had reached its height, as shown on Warren's Map, with domestic residences and gardens backing onto pasture.

Market exposed

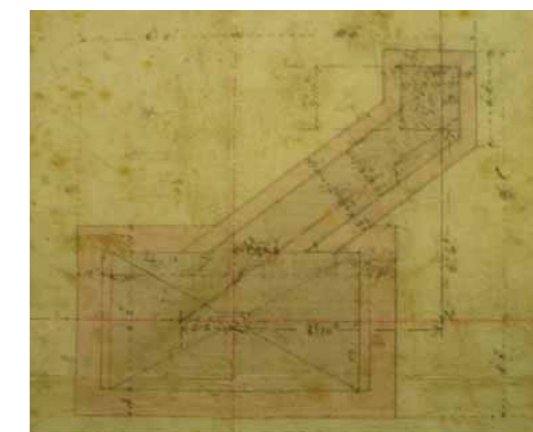
The layout of the site changed in the 19th century with establishment of a cattle market, which covered the northern half of the excavation area. To the south properties were still occupied and houses repaired, rebuilt and extended. The Cattle Market, which had been held in the medieval market square, was relocated here in 1828, and was extended during the 19th century as land was acquired. An extensive area of the market, of which few survive in East Anglia, was exposed and recorded. Market surfaces were of white brick from Woolpit and Culford, both close to Bury St Edmunds. The

position and layout of the pens were clearly identifiable, along with market entrances, cobble roads, a brick built weighbridge and an octagonal settling house. The extent and development of the Cattle Market and the properties to the south can also be seen in Payne's Map (1834) and the First Edition OS Map (1881). The market and properties continued in use to the late 20th century, when the site became a car park.

Combining archaeological evidence with cartographic and documentary sources therefore produced a detailed picture of the site's development, which will be increased as post-excavation work continues.

John Duffy
Suffolk County Council Archaeological Service

Cattle Market surface (bottom) and street fronting houses (top)



Cattle Market Weighbridge. As excavated (left) and from a plan dated 1892 (right)

Post medieval archaeology in the Czech Republic

Patrick Foster

Archaeology in the Czech Republic was considered a 'safe' subject during the communist period and was able to maintain relatively well funded standards of modern practices and research, with two exceptions. Access was strictly forbidden in the broad western frontier zone, which was heavily guarded and policed, and air space here was completely forbidden, whilst over non-military areas it was tightly controlled and rarely attempted.

• Industries in the forest

In 1989 the door was open for both aspects to be addressed by Czech archaeologists, and both were valuable for post-medieval research. The Czech forests and uplands have extensive industries peculiar to those regions, many connected with woodland management and exploitation. For example, before mechanisation felled trees were transported by water down the hillsides in elaborate stone channels. Apart from the logging and paper industries there was production of resins and tars, marked by stone kilns. This region also contains sites of the Bohemian glass industry, which flourished until the area became an exclusion zone and villages were evacuated.



An elaborate portal of the Schwarzenberg logging sluice tunnel. 419m long and dated 1823

• German settlers

This zone is also where villages were established by German settlers in the medieval period, and in 1938 Hitler used the German presence in these Sudetenlands as a propaganda weapon and reason for territorial claims. At the end of the War most ethnic Germans were expelled and their villages deserted. Few of these villages have been investigated. On the positive side the exclusion zone preserved from development an immense area of medieval and post-medieval landscape. Today Germans cross the borders and erect plaques to their old villages. To the Czechs this appears provocatively close to some territorial claim and the German words are scratched out, but the plaques and the small fenced gardens around them appear unmolested.

• German invasion

Another subject which has become popular is military archaeology. The Czech frontier zone has abundant remnants of pre-War defences constructed to counter the growing German threat. Few are so far scheduled but many have been renovated by amateur and veteran groups. The defensive strategy



Restored bunker at Dorošov, complete with tank traps

was to construct static defence lines in depth, on the principles of the 1914-18 war. Czechs could have matched the German forces on the ground, though not in the air. They expected to fall back within their defences, holding up the advance long enough for France and Britain to honour their treaties. In the event the defences were never completed, but they are a formidable set of monuments in the landscape.

• Aerial survey

Battlefield archaeology and aerial photography have recently come together. Martin Gojda, now at the University of Western Bohemia, Plzen, began extensive aerial survey in the early 1990s as a member of the Institute of Archaeology, Prague. After initial worries that all archaeological sites had been destroyed by intensive cultivation in the open fields of collective farms, several thousand new sites were discovered, known sites were photographed from the air for the first time and an extensive archive of old town and village centres was compiled. Last year Martin Gojda made a brief



Czech defenders, 1938. Original postcard

survey of early modern fortifications, most now forgotten and seen only as cropmarks. Many relate to the 17th-century Thirty Years War and the general militarisation of the 18th and 19th centuries, culminating in forts such as the Terezin fortification. This fort later became one of the concentration camps for the Jewish population.

• Village jewels

Prague is internationally considered a cultural jewel, mainly due to forty years of communist rule when, through lack of investors and a poor economy, the city core remained preserved. Only the peripheral margins suffered, like cities everywhere, the social realism of high rise buildings in the late 1950s to 70s. What is less known is that the country is full of towns and villages with architectural gems, both grand and folksy. Architecture and history are well documented by art historians and ethnographers, but there are many more subjects worthy of



Wooden houses of the traditional Czech countryside

A redoubt of the 18th-century Terezin fortress, destroyed by agriculture and visible only from the air

Czech Republic

A typical frontier Germanic house at Velký Valtínov. The base is of traditional log cabin construction, the rest half timber and brick. Age unknown. It now no longer exists



Fire engine house in the Cesky Raj



attention, city water towers and the village fire engine houses for example. Virtually every Czech village has a pond or open water tank, with a small garage to house the fire appliance. On the roof there is usually a small gothic-style bell turret to call the local firemen. In the countryside village and town architecture was based on totally wooden constructions.

Virtually anything above ground is the responsibility of the cultural heritage institutes where art historians dominate, while anything below ground is the responsibility of archaeology institutes under the Academy of Sciences. This is a major handicap for post-medieval monuments.

• *Pottery comes alive*

On a personal level, inside the 14/15th-century medieval hospital chapel where I live, excavations are almost complete. The ceramic assemblage is immense, with several thousands medieval and post-medieval sherds. Medieval material is a fairly uniformly dismal mass of hard grey wares, not unlike Roman grey wares in fabric and texture. There is little change until the 16th century, when

pottery comes alive with variety in colours, glazes, slips, decoration and forms. This may be due to the high number of local town and village potteries, a feature of Czech ceramics still found today. There are traditional Central European potters still producing forms and decorative styles that have a general commonality from Poland to Bulgaria and from Russia to the Ukraine. These now aim at the lucrative tourist market, but there are still distinctive regional or individual styles, often with a long history, produced at a local level. For example three large mugs, which came with the purchase of the chapel, are of typical Bohemian country style dated to the 19th century but still produced in the 1930s. The underglaze stenciled and handpainted examples reflect a similar tradition to country hand painted and sponge ware pottery from the Highlands and Islands of northwest Scotland at a similar date.

This short glimpse of Central Europe is about potential rather than action, for Czech archaeology is still in the grip of traditional philosophy and systems. There is virtually no inter-disciplinary co-operation or materials specialists, and archaeological environmentalists are rare. Apart from the University of West Bohemia, Plzen, teaching is generally restricted to traditional subjects and theoretical analysis. The rarity of specialists is circular – without trained specialists and reference collections it is difficult to train the next generation, so post-medieval, industrial, environmental, materials and faunal studies cannot flourish.

Patrick Foster
Svihov, Czech Republic

Post-medieval pottery from the chapel excavations at Svihov



All photographs by Patrick Foster

Three late 19th to early 20th-century handled mugs from Svihov chapel



Finding and losing the fortifications of ANTWERP

Karen Minsaer, Bas Bogaerts, Tim Bellens

17th-century map of Antwerp, showing the bastioned fortification with pentagonal citadel. Courtesy Antwerp City Archives

Antwerp was defended from about 1200 by city walls which are now almost entirely lost. In the 16th century conquering Spaniards built a whole new series of fortifications which, in the 19th century, were razed to ground level and replaced by avenues. There was little investigation of any of these defences until a number of major construction and infrastructure works made it possible to investigate these later city walls.



SPANISH DEFENCES

In the early 16th century Antwerp grew into the most important city of the Low Countries and one of the most flourishing economic centres of north-western Europe. Wealth was expressed in the building of a new city wall following the most modern military architecture, the Old Italian bastioned system. Walls round Antwerp, built by the conquering Spaniards, were designed by Donato Boni di Pellizuoli, the main fortifications architect at the court of Charles V in the Low Countries. The walls consisted of 8 curtains, 9 bastions, 5 city gates with bridges to the main highways, the moat and a counterscarp. Aesthetics applied to the construction were the rustic Renaissance style of Northern Italy.

During restyling of the Antwerp avenues in 2002–2006 a substantial part of the bastion in front of St George's Gate was excavated prior to construction of an underground car park. From this bastion, the two faces, two flanks and gun platforms and the left orillon (semi-circular projection) were examined. At the 19th-century demolition level, below the current road, the 3.2m wide bastion wall with buttresses came to light. The scarp wall had been preserved up to 3.7m and stood on a 1.5m high foundation. On the moat side the slightly sloping wall was covered with rectangular blocks of sandstone, carefully hewn and following the slope of the wall and the curve of the salient.



One of the more intriguing parts of these walls is the salient of the bastions. As can be seen in cartographic sources and on other iconography this is pyramidal at the bottom and changes towards the top into the curve of the bastion point. On top a disc-shaped mark is probably the remains of a demi-sphere. The pyramid-shape on the salient, besides its symbolic and aesthetic aspect, was a transition element in the development of the bastion.

Antwerp, 2003. St George's bastion, near the Emperor's Gate. Photograph: City of Antwerp, Archaeology Department



decorations on an architrave decorated on the underside with lions' heads. Above it was a square pediment decorated with a frieze, with two lions holding a coat of arms. In the background is a winding pennant bearing the inscription 'Plus Oultre', the device of the Habsburgs.

MONUMENTAL FACADES AND FRENCH RE-FACING

During infrastructure works to the Antwerp avenues foundations of the gate were investigated. One large part projected into a new tunnel and was threatened by demolition. The gate, like the bastion, was faced with sandstone and revealed a monumental façade with half-pillars. The rectangular blocks are slightly sloping at the moat side and anchored in the brickwork. In 2003 and 2005 the façade was rescued, but without anywhere obvious to move it. The remains of the counterscarp, the bridge pillars, as well as the Canal of Herentals, which brought fresh water into the city, were encountered in the car park and tunnels. Investigations also focused on the curtains of the city walls during building projects, and these illustrated a uniform architectural plan. Again, the scarp was anchored by buttresses built at regular distances, and the sloping moat side was finished with sandstone. To the north, the original stone facing had been replaced with alternating stone and brick by the French government under Napoleon, for Antwerp had a strategic position in the war with England.

ALVA'S CITADEL (1567-1571)

After the mid-16th century, the Spanish government added a citadel to the south side of the city. The construction was part of a general Spanish policy in the Low Countries instigated by Charles V and applied by Philip II. This dominating fortress was not built to defend the city but to act against any political or religious rebellions within. For its construction, the duke of Alva chose the Italian engineer Francesco Pacciotto, who earlier designed the citadel of Turin, on which Antwerp was modelled. The basic shape of the citadel is a regular pentagon, one side aimed towards the city, with bastions with retired flanks and gun platforms. On the outside the citadel was provided with a moat and counterscarp.

During excavation, parts of the faces and of the southern flank of the Toledo bastion were documented. The bastion wall displays a simple and regular construction plan with a main wall anchored with buttresses into the earthen wall behind. A gentle Renaissance profile in brick, limestone and bluestone girdle stone came to light.

We also found excellent Renaissance architecture in the massive St George's Gate. Construction of this, the most monumental entrance to the city, also known as Emperor's Gate, started in 1542. From a gun platform in the collar of the bastion, the bridge in front of the gate could be covered with gunfire. The gate was symmetrical in plan, consisting of the central gateway and two main aisles. This robust square construction, built in brick, was provided with a facing in stone with decorative bosses. On the moat side the lower part comprises four decorative Doric half-columns integrated in the construction of the façade. The coping had classical

Outside a wall (the counterscarp) bordered the Emperor's Gate assumed that the inner body of the wall dates to the original 16th-century citadel concept. The outer part was restored in the early Belgian period, probably after the battle of 1832 when Dutch troops were still occupying the Antwerp citadel. They only left after being seriously attacked by the French. Cartographic and iconographic sources indicate a canal as a connection between the citadel and the city, along the River Scheldt. Parts of these 16th-century constructions were excavated at Cockerillkaai.

THE BATTLE FOR PRESERVATION

Despite co-operation between construction workers and archaeologists, much of the walls were demolished. Today, only a few sections of the medieval city wall, dated to around 1200, can still be seen. We were concerned that, at the end of the infrastructure works, not a single stone of the later fortification could be preserved. The Department for Infrastructure Works presented an unusual proposal: the bastion could be moved to a deeper location, and therefore be publicly accessible. Consequently it was cut into 3 ton blocks, and after



As a symbol of Spanish control over the city, the citadel was never accepted by the inhabitants. Anonymous 16th-century engraving, courtesy Antwerp City Archives

'The surface of the earth is covered and loaded with its own entrails'

David Dungworth



Much of today's urban regeneration is in areas vacated by heavy industries in the 1970s and '80s. Unsurprisingly the archaeological mitigation of these sites uncovers substantial remains of historic industries, sites quite different from those where most of us were trained. One obvious difference between sites of historic industry and more traditional archaeology is the scale of the features and earth-moving activities.

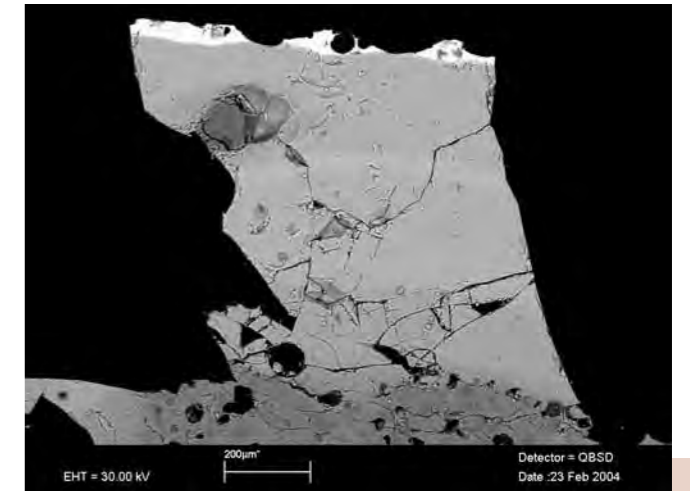
Redistributing waste products

In the early post-medieval period glass furnaces typically occupied less than 20m² but by the mid-19th century they covered more than 100m². Test-pits for evaluating a site with a large glass furnace might be wholly within the furnace, so sites with large industrial features will often require large machine-dug trenches. Problems of waste have to be addressed. A late 18th-century blast furnace typically produced 2000 tons of cast iron each year and at least 1000 cubic metres of slag. If this was dumped beside the furnace, the heap would be taller than the blast furnace in less than a decade and soon the blast furnace would be in danger of being engulfed by its own slag heap. So where did it all go? Some was backfilled into quarries and some to raise ground levels elsewhere. Another important use was as a raw material in other industries. The bottle glass industry for example used waste from the iron, soap and gas industries, and some of its waste was used by the brass industry. Many waste products will therefore be missing from a production site and can turn up in unexpected places.

Why bother?

Historic industries used technologies and materials that few of us are familiar with; we can recognise Roman pottery but what is *sandever* and how would we recognise that? Before attempting to investigate the site of an historic industry it is important to extend the desk-based assessment to predict likely industrial features and waste materials. One might ask though, why should we bother, if there are

Science for Historic Industries, new English Heritage guidelines (Printed copies available from English Heritage, Customer Services Department, PO Box 569, Swindon, SN2 2YP. Electronic copies can be downloaded from www.helm.org.uk)



Scanning Electron Microscope image of glass adhering to a crucible from Silkstone, South Yorkshire. © English Heritage

historic records? The simple answer is that the historical records often do not contain the sorts of information that we need. Industrialists frequently did not understand how a raw material was transformed into a product (and waste material) and working people who understood the process rarely left suitable records. Many new processes were patented but until recently patents rarely provide the necessary detail.

Scientific techniques can be especially valuable for understanding the nature of waste materials and the information they contain about industrial processes. New English Heritage guidelines provide several case studies. Out of many techniques one of the most successful has been the electron microscope which, when fitted with an X-ray spectrometer (the combination usually goes by the acronym of SEM-EDX), can examine the microstructure of materials and determine the chemical composition of discrete areas and inclusions.

Wine bottles and lead crystal

Excavation of a late 17th-century provincial glass manufacturing site at Silkstone, Barnsley (Dungworth and Cromwell 2006) included a large programme of SEM-EDX analysis which will serve as an exemplar. The excavation revealed a deep stratigraphic sequence with two main phases of glassworking separated by demolition c.1680 (and presumably a rebuild of the furnace). The analysis

of over 400 samples of glass and glassworking waste shows that the site produced a dark green high-lime low-alkali glass for wine bottles and a pale green mixed alkali glass, probably for tablewares. The latter contains very high levels of strontium which indicates that seaweed ash was used as a flux, somewhat surprising as Silkstone is 80km from the coast! Following demolition, the wine bottle manufacture continued little changed but the mixed alkali glass was abandoned in favour of a colourless lead-potash glass (lead crystal). Lead crystal was patented by George Ravenscroft in 1674, his patent expiring in 1681. So an out-of-the-way glasshouse in South Yorkshire was adapting to a new technology extremely quickly (it is possibly that it was so quick that they infringed on Ravenscroft's patent).

Now we are hoping that scientific techniques will play an increasing role in improving understanding of historic industries. Future English Heritage projects will include pottery, copperas, alum and iron founding.

David Dungworth
Materials Scientist
English Heritage
Fort Cumberland
Portsmouth PO4 9LD

Dungworth D and Cromwell T 2006 'Glass and pottery manufacture at Silkstone, Yorkshire'. *Post-Medieval Archaeology* 40, 160-190

Archaeology now: machine excavation at Murray's Mill, Manchester. Photograph: Ian Miller, Oxford Archaeology North



An 18th-century corn mill at Stanley Mills, Perthshire

Mike Cressey and Peter Yeoman



Excavating corn mill footings.
Photograph: CFA

Historic Scotland will shortly be completing conservation and interpretation works on water-powered cotton mills at Stanley Mills, Perthshire, ready to open to the public in 2008. Archaeological recording has been an important part of this project.

Stanley is a unique complex of Grade A listed mills on a majestic site within a bend in the Tay. Water-power was used here from at least 1729, when a tunnel was driven through the peninsula to power a corn mill, until 1965 when the mills were finally connected to the National Grid. The lade system and water-wheel pits remain largely intact and have been investigated and conserved. The six-storey East Mill and four-storey Mid Mill were built of local sandstone around 1800, with later changes as a result of fire damage and accommodation needs. Bell Mill was completed in 1787 to the design of Richard Arkwright, inventor of the water-powered spinning process and pioneer of the factory production system. It is the finest, most complete surviving example of an 18th-century water-powered spinning mill in Scotland. The mills closed in 1989 and were only saved with the intervention of Historic Scotland and the Phoenix Trust.

Excavations and refurbishment works led to discovery of a 1729 corn mill on the riverside terrace. Historical maps show that it was supplied by a lade, part of which survives today. The corn mill survived as low wall footings forming a large



Corn mill footings in foreground on the Tay terrace, with Arkwright's Bell Mill behind.
Copyright: Historic Scotland Images

rectangular building, 18.5m by 9m, with two rooms. The west room formed the main corn mill and contained several structures associated with the mill wheel and axle.

Remains of several interior features key to understanding the mills gearing have survived. A large plinth stood on the east side of the internal wall, built from mortar-bonded sandstone blocks in random courses. This had square settings at each corner, formed by single sandstone blocks with a pecked square depression in the centre. This feature is interpreted as the base for a Hurst frame, a common type of timber-framed mill machinery. During the excavation several complete millstones were found, and evidence that the mill was partially destroyed by fire.

Mike Cressey
CFA Archaeology

Peter Yeoman
Historic Scotland

HISTORICAL ARCHAEOLOGY COMES TO GLASGOW

Michael Given

The Department of Archaeology at the University of Glasgow has announced a new postgraduate (Diploma/MLitt) course in Historical Archaeology.

This offers a detailed introduction to this thriving interdisciplinary field, focusing on the centuries from 1500 to the present but with due attention given to the Middle Ages. It explores individual world regions – including the UK and Ireland, the Mediterranean and Middle East, North America and the Caribbean, South Africa, and Australia – and the historical and contemporary themes that connect these regions in global terms.

Archaeology at Glasgow has always had a strong focus on the historical past. Today, Glasgow is home to the Leslie & Elizabeth Alcock Centre for Historical Archaeology, and the Centre for Battlefield Archaeology. Individual staff in the Department and the University's Archaeological Research Division (GUARD) have research interests in the historical archaeology of Scotland, Britain, Europe and the Mediterranean.

Field projects run by the Department, which offer fieldwork experience and research opportunities to students, include

- Strathearn Environs & Royal Forteviot Project, Perthshire: an early medieval power centre in central Scotland, location of King Kenneth mac Alpin's 'palace'
- Historic Glasgow: with excavations and wider research at Glasgow Cathedral, in Govan (early medieval royal and ecclesiastical centre which developed into one of Glasgow's key industrial districts), and the wider industrial city.
- Ben Lawers Historical Landscape Project, Perthshire: interdisciplinary research on the shieling grounds, agricultural lands, lochside settlements and crannogs

- Dun Eistean Archaeology Project, Lewis: island hillfort and other medieval structures associated with the traditional stronghold of Clan Morrison
- Troodos Archaeological and Environmental Survey Project, Cyprus: landscape project with interests in Medieval, Ottoman and British colonial periods
- Tawahin es-Sukkar, Jordan: investigating the medieval sugar industry at the southern end of the Dead Sea

Core modules of the taught element are *Historical archaeology: theory and practice*, and *World historical archaeology*. Students will also select three modules from options that include the historical archaeology of the British Empire; Gaelic Scotland from clanship to clearance and the creation of the Scottish Highland diaspora; landscape archaeology in the historical Mediterranean; monuments in transition in medieval Scotland. Other available options include thematic studies (eg in History, Celtic Studies, History of Art); artefact studies; practical and professional archaeological skills; IT skills, eg multimedia analysis and design, GIS, and 3D digitisation. MLitt students also undertake a dissertation.

For further information see <http://www.gla.ac.uk/archaeology/>

Michael Given
Course convenor
0141-330 5690
enquiries@archaeology.gla.ac.uk



Glasgow's Historical Archaeology prospectus

NEW BOOKS REVIEWED

The English Buildings Book

Philip Wilkinson and Peter Ashley

English Heritage 2006, 390 pp £35.00

English Heritage has again delivered a well-produced volume in a user-friendly format, layout and approach. It describes a selection of 700 English buildings from the 7th-century church at Escomb in County Durham to the 2004 Swiss Re Building (the Gherkin) in London. It claims to be a 'comprehensive volume on all types of English architecture' covering the diversity of construction in England. Its aims are to encourage people to look around them and increase awareness not only of buildings which are architectural masterpieces, but also those that are more utilitarian in style such as the telephone box or bike shed.

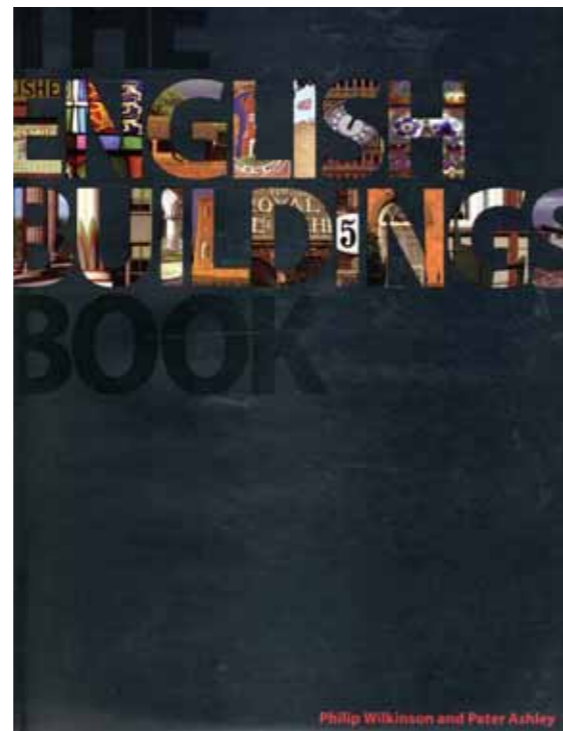
The introduction summarises the architectural heritage of England and subdivides it into specific building types. It examines each type within its historical context, briefly addressing the reasons for its evolution and development. Seventeen chapters examine specific building groups, such as transportation, residential, commercial, educational, religious, military, or agricultural. Each chapter discusses the diversity of layout, form and provinciality of architectural style and use of local materials. Photography is in colour, largely exterior views. Unfortunately some images are slightly disappointing, with shadows, encroaching vegetation, vehicles and even overhanging trees detracting from the view of the building being examined.

It is worth noting that major engineering structures are not included, nor grottos, hunting lodges, motorway service stations, tanneries, tramsheds,

restaurants or sewage plants. There is clearly scope for a second volume to address these. The bibliography contains an excellent selection of published reference works, although for those wishing to examine a particular building type in more detail it is disappointing that no journal articles or grey-literature sources are included.

The book is a useful starting point, providing a broad coverage of architecture found within England. The easy to use layout and informative descriptions makes this a welcome addition to any book shelf.

Oliver Jessop



Archaeological resource management in the UK: an introduction

Ed: John Hunter and Ian Ralston

2006 (2nd ed) Sutton, 402 pp hardback £25

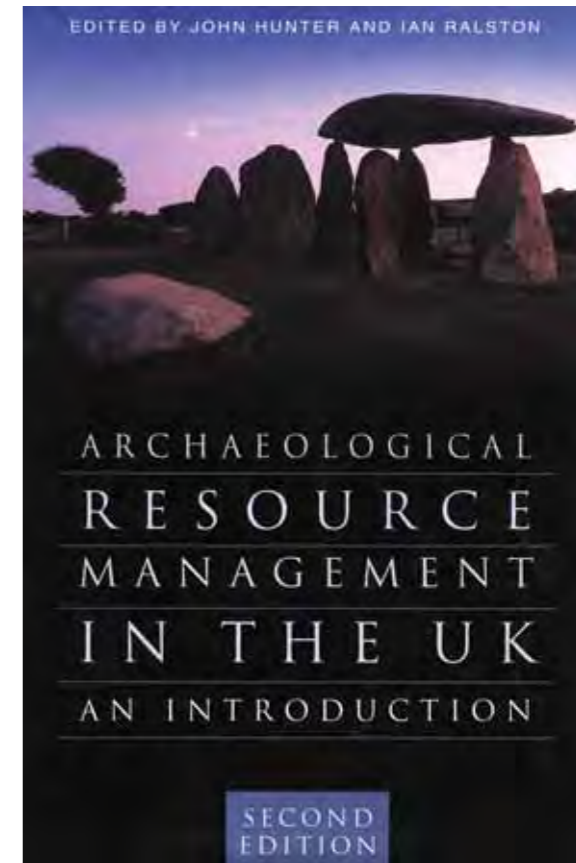
This impressive volume is an updated replacement of the 1993 book of the same name (and same editors) in a time of rapidly evolving practice. It

includes 22 chapters by leading practitioners, covering aspects from working practices in field archaeology (Tim Darvill) to archaeology and land use (Lesley Macinnes), and from EH funding policies (Roger Thomas) to whether visitors are made welcome (Mike Parker Pearson and Francis Pryor). Constructive criticisms from within the profession enliven descriptions throughout. David Fraser and Martin Newman's review of the British archaeological database for example

summarises its various components as 'messy, ill-defined and constantly being refined' which surely should be sorted more than thirty years after SMRs were laboriously created, and Hunter and Ralston's own attempt to describe the structure of British archaeology complains of its 'underdeveloped structure in any formal sense' and queries whether our still-disparate structure is now entirely appropriate. David Baker and Ken Smith, describing local authority opportunities, lament that uncertainties have not diminished though they are optimistic for the future (written in 2004 – they might not be so sanguine today). They rightly stress the fundamental contribution local authorities *can* (rather than 'do') make and the values of positive conservation. Ian Shepherd gives a cheering account of strengthening local authority involvement in archaeology in Scotland (from a very low base), and at last developer-funding is entrenched there.

Summaries of heritage legislation are useful aide memoires and again should help refine needs for change. David Breeze provides an analytical account of shifting ancient monuments legislation (with causes and effects) throughout the UK, and Antony Firth does a similar job for underwater archaeology, including its international context. Henry Cleere discusses protection of the archaeological heritage world wide. The 1992 Malta (Valleta) Convention, ratified by Britain in 2000 but not so anyone would notice, is still not universal in Europe, and the Hague Convention was 'something of a dead letter' in Iraq and Yugoslavia and is desperately in need of agreement and implementation. He introduces us too to the Lausanne Charter, whose nine articles cover a range of activities and measures of concern to heritage managers.

Andrew Lawson tracks the growth of the archaeological profession from the early 1970s, including the lead role played by IFA since 1982 in issues of standards and ethics. He faces squarely the shortcomings of present systems – needs for not just better pay but also structure, training and career development. In similar vein Jane Grenville concludes that 'Archaeology (in its broadest sense) in the early 21st century is arguably more attuned to its audiences, more businesslike in its operations and receives more money... than it was ten years ago'. However 'it continues to dissipate its intellectual talents through inadequate career



structures and poor communication between the field profession, the curatorial arm and the academic community'. Parallel criticism comes from Catherine Hills and Julian D Richards on dissemination of information, without which our time is wasted. They review various reports and recommendations, but despair of the increasing gap between academics and practitioners at a time when the 'results of contract archaeology *must* be drawn on for research' and when 'academic debate needs data and fieldwork needs purpose'. However, digital archives are already proving a popular success and other electronic solutions can now at least help with practical problems.

The book is rather disappointingly illustrated and inevitably, with so many authors, slightly out of date in places, but it is an invaluable snapshot of our profession today and all chapters contain useful data, references and strong opinions. The book's main value however is its analyses of strengths and weaknesses. These are healthy pointers to self-improvement which should be heeded by those in a position to manage change within the archaeological position.

Alison Taylor

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