

Experimental Archaeology Workshop (Queen Elizabeth Country Park and Butser Ancient Farm, 18th June 2008)

Summary

Introduction & Overview

On Wednesday 18th June 2008 a workshop was held at The Queen Elizabeth Country Park and Butser Ancient Farm with the objective of developing ways forward for experimental archaeology. The meeting was attended by 40 representatives from experimental sites, university departments, and English Heritage and by independent / individual researchers.

The following summary provides a record of the discussions both for those present and those who were not able to attend the meeting. This document is a **second draft** of the workshop's discussions, and includes feedback on the 1st draft received from workshop participants during Summer and Autumn 2008. A PDF copy of the 2nd draft document is also available through: <http://www.reading.ac.uk/archaeology/research/Projects/arch-experimental.asp>

Discussions at the workshop ranged widely and the aim of the following summary is to record all of the key topics and issues which were raised. Although there were too many individual issues for them all to be taken forward as direct outcomes of the meeting, a number did emerge as particularly timely priorities for further work and focus in the immediate future and these are identified in the **Priority Topics** list immediately below. A wide range of other issues and points are summarised in the following sections (organised according to the four workshop discussion themes), and which are of potential value both to the development of existing projects and to the development of new experimental research in the future.

Priority Topics

(1) Integrating universities, heritage organisations, and experimental sites: One of the key objectives of the workshop was to help encourage greater use of experimental sites by both universities and heritage agencies. A number of key themes central to the effective development of integrated experimental activities and scientifically robust methodologies are identified below. Greater collaboration will assist experimental sites in developing a wider portfolio of rigorous scientific experiments with which to stimulate visitor interest. Experiments can also provide an ideal context for certain types of student teaching and research. However, for this to work it requires researchers to make some provision in grant applications towards the costs of experimental sites so that, **at the very least**, the extra work involved in housing an experiment is not a drain on the, always very limited, resources of experimental sites. The importance of integrating these three sectors was also highlighted by Roeland Paardekooper (Exeter University). Roeland also emphasised the need for the current initiatives to be developed by

representatives from a variety of different organisations and backgrounds (supporting the longer-term survival of the work in the event of loss of funding, movement of specific individuals between institutions etc).

- 1.1 Experiment diaries:** The development of guidelines concerning the recording of the construction, repair, use and excavation of experimental buildings, earthworks, experimental areas etc. For example, in the case of buildings this might most easily take the form of a notebook diary attached by a chain to the building, in which events in the life of a building are recorded. Roeland Paardekooper (Exeter University) highlighted the need for such experimental diaries and forms to be easy to use.
- 1.2 Research designs:** The introduction of peer-reviewed research design forms, submitted in advance of the start of new experiments, is desirable. This would contribute to experimental archives identifying what was proposed, the objectives, methods, and publication plans. There is potential for existing Butser forms to be developed for use elsewhere. There is clear value in receiving peer reviews of experimental research designs: this can draw additional researchers into the experimental work and creates a design which stands a greater chance of competing successfully for external funding.
- 1.3 Student guidelines:** These are important for the development of worthwhile experimental projects amongst undergraduate, Masters and PhD level students (either as stand-alone dissertations or as part of wider research projects). These guidelines should be designed to encourage greater use of experimental sites in research and to aid students in the development of scientifically robust projects.
- 1.4 *In situ* preservation:** In the context of developing Planning Policy Guidance (UK) and the Valetta (Malta) convention on the protection of the archaeological heritage (international) there is a need for focused research on *in situ* preservation to which the experimental sites can contribute.
- 1.5 Hut floors and activity areas:** Experiment is already making a significant contribution to research on the social use of space. Making the most of this potential requires appropriate recording in diaries of the life history of experimental buildings (see also point 1.1 above).
- 1.6 Testing different models:** Many experimental sites (e.g. Iron Age roundhouses) are strikingly similar. We should actively encourage the testing of different models and interpretations through experimental activity.
- 1.7 Networks:** Throughout the workshop the importance of developing and sharing best practise between experimental sites and projects was highlighted. Particular topics which should be taken forward are: (i) guidelines for students; (ii) experimental biographies (e.g. building diaries: point 1.1 above); and (iii) an archive, at an appropriate level of detail, recording each experiment (e.g. those involving the creation and/or use of material culture). As a means for facilitating networks

and contacts, Roeland Paardekooper (Exeter University) highlighted the following email discussion list (<http://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=ARCH-EXPERIMENT>) and the importance of the current initiatives using existing infrastructure.

1.8 International networking: We should make maximum use of the existing EXARC and/or EXAR networks to disseminate and develop the outcomes of this meeting (see also the web links in the e-mail). EXARC and EXAR representatives will be invited to the follow-up workshop in summer 2009. The issue of international collaboration was also strongly emphasised by Roeland Paardekooper (Exeter University), and in particular the need for discussions between UK and European experimental archaeologists/organisations at an early stage in the development of the current initiatives.

1.9 Archiving and publication: The importance of designing projects in the future so that they produce archives of long-term value and lead to publication in refereed, academic journals.

(2) Funding future research: We are actively exploring the funding possibilities for taking forward the networking and best practise agendas developed at the workshop. These include the possibilities of drawing upon funding from one or more of the following sources: Leverhulme, the Science and Heritage Initiative, the Arts and Humanities Research Council (including the AHRC/EPSRC Science & Heritage Programme research clusters), the Natural Environment Research Council, and English Heritage.

Theme 1: Earthworks and buried soils

Key questions and issues identified were:

- Changes in the conditions of sites (e.g. as a result of vegetation changes) need to be considered when defining the scope and limits of new work on existing sites. This is particularly important with reference to long-term experiments, as research questions and methods will change and there is the constant development of new analytical techniques.
- There is a considerable imbalance in the bedrocks on which there are UK experimental earthworks. Most of the sites are on chalk, while only Fishbourne is on brickearth over Pleistocene gravel. The desirability of sites on other bedrocks is obvious. The main need, repeatedly identified, is for a site on river gravels, possibly with part of the site subject to floodplain alluviation.
- The value of experimental buried soils on sites subject to saltmarsh sedimentation was also identified. There were possible contexts in sites of new, managed realignment schemes, some of which were subject to archaeological monitoring.
- Whilst it is impractical to envisage the creation of many additional experimental sites there was a useful discussion of the extent to which archaeologists can make use of existing earthworks of known construction date? Some ditches could be useful, although there is the problem of not knowing the original profile and dimensions. Perhaps the most useful resources are the geographically very extensive and geologically varied

road and railway embankments which bury soils of known date, enabling a variety of issues to be considered (e.g. effects of compression, post-burial biogenic activity etc). Martin Bell will try to take this forward in consultation with Jim Williams and colleagues in Soil Science.

- The value of documenting the effects of animals on earthworks was noted and this has been a major factor in understanding buried soils and erosion at both Overton (soils fauna) and Wareham (the effects of deer and lizards in maintaining open patches on the bank).
- Peter Crow noted the needs of Forest Research for data on the effects of tree growth on earthworks. There is for example significant growth of trees and shrubs on the Fishbourne earthwork after 22 years and the Wroughton earthwork has some scrub and trees.
- Attention was also drawn to current (English Heritage-supported) experimental research at Silsoe on the effects of ploughing on experimental barrows.
- There was concern that some of the lessons of the experimental earthworks have not really fed into the reporting and interpretation of features on archaeological sites. One way of addressing this is to flag (e.g. in websites) contexts where excavators have benefited from consideration of the experimental evidence, not least because this applies much more widely than simply earthworks alone.
- There is little soils teaching in most archaeology degrees, while few training excavations produce really good buried soils, as we are often dealing with truncated and reworked soils. Experimental buried soils can therefore be a most valuable teaching tool.
- However a valuable on-line soil science resource for archaeologists has been produced by a team at Stirling University led by Prof. Donald Davidson. We should do what we can to encourage wider use of this resource through the outputs of the experimental initiative (see the link in the accompanying email).
- Stephen Nortcliff drew attention to the potential of new techniques to investigate the past history of buried soils (e.g. PCR to look at the effects of burial and whether manuring and fertilisation histories can be detected in buried soils). At Bascombe for example we have a soil used for cereal cultivation up to 1991 and at Fishbourne a buried soil with a previous (18th and 19th centuries) history of market gardening.
- The earthworks also have more potential than has so far been utilised for research on standard palaeoenvironmental techniques (e.g. molluscan microenvironments on the chalk sites, seeds and pollen assemblages as evidence of vegetation cover, and the detection of hedges such as at Fishbourne)
- Peter Reynolds also established experimental earthworks at L'Esquerda, Catalonia, Spain. The erosion and vegetation monitoring of these has been carried out by Christine Shaw and Jane Esden. There is a case for excavations of these earthworks and the local archaeologists in Spain may be encouraged to carry this out.
- There is a bank, ditch and palisade experimental earthwork at Lejre, constructed in c. 1989 (at the time of the AEA Roskilde meeting). It is not known if any analysis or excavation has been done on this earthwork.

- The BBC Living in the Past series involved the establishment of an earthwork at Cranbourne Chase in 1980. It is believed that this still exists but it has not been subject to any subsequent monitoring or study.

During the afternoon session at Butser a further series of issues were raised with regards to buried soils and earthworks:

- There was general agreement that for reasons of scientific replication more than the single section cut in December 2007 should be cut of the Bascombe earthwork
- Since the planned 10 year life of the earthwork had now passed consideration was given to the use of the earthwork for additional experimental purposes. Two were discussed in particular:
 - (1) Exposing part of the earthwork to the effects of grazing animals (sheep or goats) to observe the effects on sedimentation. We believe that in the past this has been done with one section of the bank where it abuts a paddock. This would help answer one of the criticisms of experimental earthworks: that they are potentially artificial situations with far lower levels of animal and human disturbance than on many archaeological sites.
 - (2) Burial within the earthwork of organic and inorganic materials as part of experiments on *in situ* preservation. Buried materials could be inserted when excavations take place in any earthwork such as Bascombe where we can be reasonably confident that the site will survive for up (for example) 10 years. This type of work is particularly relevant to English Heritage's interest in developing understanding of the burial environment (Jim Williams). Burial of metals and glass in chalk environment would be particularly useful since none were included at Overton, although they were included at Wareham.
 - (3) Jim Williams also noted the problems of redox measurements to look at changes in the burial environment and the value of using, for example, iron coupons to document the end product of reactions. This is an approach which might be applicable in the Science and Heritage *in situ* preservation project on the Somerset Levels which starts in October 2008.
- Peter Crow drew attention to the potential of laser scanning (or maybe 3D photogrammetry) to record earthwork erosion both before and after vegetation removal. This would certainly be an interesting approach if it proves necessary to make a final record of the Fishbourne earthwork prior to destruction (the future of that earthwork is at present uncertain).

Theme 2: Built structures and activity areas

Key questions and issues identified were:

- Experiment can be utilised to explore the social aspects of activity areas: e.g. acoustics, experiments involving the public etc.
- There is a need to find means of balancing active experiments against the need of the public and visiting school children with regards to the experimental sites.

- Authenticity in the structural elements of buildings determines in part the life-history of buildings
- The archaeological discipline has to lead experimental archaeology. It cannot be led by, for example with regards to replication, traditional craftsmen whose craft history may only extend back 100-150 years.
- How do buildings survive and how do they function? Does the location of a building change how it was used? Consideration should be given to wind directions, air flows, entrance positions etc.
- There is a need to draw together published information
- Experiments are required which are related to the patterns of movement within buildings. For example deposits are very different in doorways (e.g. through trampling), while the trapping of residues around fixed objects such as hearths and querns is another important factor. These are key locations for the sampling of residues for analysis.
- Mapping artefact residues needs to occur not just inside, but also outside, of buildings
- Greater understanding is required into how the processes of construction, use and abandonment of buildings affect residues
- At what scales do we need to sample?
- Many experimentally built structures are not lived in, but rather used for school parties. Because they are not lived in we can't look at how their residues reflect (or not) past archaeological contexts. Roeland Paardekooper (Exeter University) notes the distinction between house reconstructions and house experiments, but argues that the former can still be informative through appropriate monitoring and documentation.
- Consideration needs to be given to the sustainability agenda: archaeology has to feed into how people live today.
- Sponsorship should be considered, including how and where it may be relevant to particular experiments
- There is currently not enough public involvement and support
- Roeland Paardekooper (Exeter University) has highlighted the extensive range of experiments and experiences present in the Netherlands, and noted the importance of developing a reference inventory of previously applied methods and approaches (including those which were not successful).

The discussions at QECP were focused towards how buildings were constructed, rather than the activities taking place inside them. At Butser however, discussions were focused towards activity traces within residues.

Theme 3: Experimental agriculture

Key questions and issues identified were:

- The requirement to focus not just on cereals, but also to consider animals
- The issues of fertilising fields, crop yields, and the transfer of nutrients from pasture to arable
- Studies of the differing pre- and post-depositional taphonomies of cereals through experimentation can be a key starting place for understanding the relative contribution of cereals to diet on archaeological sites

- Taphonomy is a huge problem for the study of cultivation as we are rarely deal with primary contexts. How can this be explored through experiments?
- Pests and diseases: experimentation is required to examine the control of pests and diseases (e.g. through sanitisation, burning). There has been very little experimentation on this issue. How does it affect yields?
- The different methods of processing cereals: what survives in the botanical record?
- Evidence for prehistoric horticulture
- A clear need for an active gazetteer of completed and ongoing experiments and communication between participants regarding methods, results and implications
- The experimental sites are keen to encourage collaboration with other experimental sites in this area

Theme 4: Material culture and metalworking

Key questions and issues identified were:

- The new technology area currently being established at Butser offers opportunities for new research on metalworking etc. However, it is important that base level samples of the soil are taken before any experimental activity begins (e.g. selected samples taken by Chris Speed of Reading University on 27.6.08 as part of proposed PhD research linked to metalworking and activity area traces and stratification at Silchester: additional material was taken so that background samples are available for other researchers).
- The value of having a separate recorder documenting technological processes as they take place was highlighted by the experiences of both Damian Goodburn and Richard Darrah (e.g. on the Dover Boat).
- The value of film archives was also emphasised.
- Recording certain types of activity may be very well carried out by volunteers rather than professional archaeologists (i.e. actively involving the public).
- The need for guidelines for the recording of experiments was identified.
- The development and transmission of appropriate skill levels and skills' networks was identified as a key area for collaboration in relation to topics such as metalworking, wood working, pottery production, glass working, building construction etc.
- Roeland Paardekooper (Exeter University) has noted that there are opportunities to be exploited through the iron smelting workshops being run annually in mainland Europe (e.g. in 2006 a one week seminar was held at Eindhoven, with 120 participants from across Europe) and in Ireland (focusing on smaller Irish bronze casters). More generally Roeland has also emphasised the need for greater collaboration with the key European organisations (EXAR and EXARC).

On-Site at Butser

The round-up session at the end of the Butser Ancient Farm visit highlighted a range of broader issues and practical examples of potential research questions and future projects:

- Damian Goodburn highlighted the value of experimental sites for the teaching of survey and building recording techniques, particularly of non-western building types
- Storage pits which had been left open at Butser for up to a decade were an opportunity to investigate their role as pit fall traps and to record the small mammals and amphibians which had accumulated. The sediment increments in such a pit can also contribute to a better understanding of what we find in, for example, Iron Age storage pits (e.g. through ½ or ¼ sectioning).
- A project was mooted by Richard Macphail and others on the collection of floor sweepings from buildings of various types (e.g. the villa, roundhouse, industrial area etc), storage of sweepings in a pit, and use of these samples for subsequent analytical work.

Round-up Discussions

The final discussions divided into three main themes:

(1) Participation and future activities

- Identification of key areas for future experimental research should be in terms of: a) academic significance; b) education and outreach potential; and c) funding potential. The need for the grounding of experiments in the problems or questions raised by particular sites or groups of sites (and therefore being part of overall archaeological research projects) was also emphasised by David Robinson (English Heritage)
- Seawall experiments on foreshores (e.g. building a small earthwork to investigate whether one could pick up flood-events: Damien Goodburn) were highlighted as a means of tying experimental archaeology into the issue of managed retreat. What about the possibility of Environment Agency involvement?
- There is a need for the stronger linking of the issue of *in situ* preservation with buried soils and earthworks
- There is a need to look at ditch fills in a wider-range of bedrock types (i.e. not just chalk)
- Sweeping experiments were proposed for the roundhouses and villa at Butser (by Richard Macphail, Rowena Banerjee, Wendy Matthews)
- There needs to be consideration of the use of space: e.g. how do groups of people experience space, what are the impacts of different furnishings or variable sizes of group (Sarah May)? The education and outreach potential of experiments needs to be developed: e.g. trying to promote the outcomes of previous experiments where they have been applied. However David Robinson (English Heritage) has commented that there can be conflicts between research objectives and outreach/education (e.g. reconstructed Iron Age houses used for teaching school parties rather than being actively lived in). David argued that in these circumstances the research objectives should take priority, with parallel set-ups for teaching etc. if necessary.
- There is a need for more detailed work on woodland management and coppiced woodland (with potential for student involvement).

- There is a need for expanded experimentation with axes and woodworking (Damien Goodburn)
- There is potential for long-term experiments (e.g. for burial/surface modification of residues in a wide-variety of landscape settings) at the experimental sites
- There is no single way of undertaking experimental archaeology, but there is a need for shared best-practice recommendations (this was also re-emphasised by David Robinson (English Heritage))

(2) Best practice

- Robust experiment designs (e.g. when, where, by whom etc) are vital
- Clearly defined hypotheses are essential for experimental archaeology. With regards to both this and the above point, David Robinson (English Heritage) has commented that there is clearly no shortage of ideas for archaeological experiments. However, at its worst, experimental archaeology can just be an expensive and fun way of finding out what we know already or can discover from more appropriate sources. David argues that it is essential to have very stringent sets of aims and objectives which are rooted in concrete archaeological problems and questions.
- Projects should lead to either archived analytical results or carefully documented materials or samples which can be archived. With regards to archiving, Roeland Paardekooper (Exeter University) emphasised the need for archives to be on-line and open access, and suggested that by connecting experimental archives into wider heritage collections, funding could become available. He also highlighted the potential role of students as a workforce for compiling and maintaining archives.
- It is important that projects contain clear publication plans
- A consolidated database of experimental archaeology and publications is required
- Site documentation is critical: e.g. diaries for each experimental structure, including documentation of repairs, use and activities (when they take place and by whom). The possibility of photo diaries was considered. It was noted that documentation might not record activities in all structures: e.g. some might be designed for mainly educational use.
- Following a number of the above points, David Robinson (English Heritage) has commented that there is a need for (1) appropriate recording strategies (these are often lacking); and (2) consideration of the long term plans and consequences (e.g. the future of the experimental set-up, the archive etc).
- Early communication is vital: talking at early stages in the process about what will be needed to be recorded
- There is potential for English Heritage involvement in project design/analysis, including with undergraduate student projects. Regarding student involvement Roeland Paardekooper (Exeter University) raised the question of which universities would be able to “deliver” students interested in experimental archaeology? This may well relate to the provision and level of experimental teaching/research in individual departments. Roeland noted that while there can be competition between

Departments, experimental activities offer students excellent opportunities to develop fieldwork and research skills (and, as this document highlights, there is much work to be done). He also raised the issue of how experimental opportunities (as identified and developed through a structured research framework by universities, experimental sites, and heritage organisations) could be marketed to students? Through individual academics and/or meetings/conferences (e.g. the Edinburgh Experimental Archaeology conference in November 2008)?

- English Heritage involvement might not be able to provide funding in terms of smaller amounts over longer periods of time (more likely that larger amounts of money over shorter periods of time could be identified)
- English Heritage suggested that they could provide funding to get publications ready, particularly with well-defined rather than open-ended projects. Roeland Paardekooper (Exeter University) has highlighted the current existence of the EXARC International Journal EuroREA as a potential destination for the reporting of experimental activity.
- Commitment was need for the maintenance of resource/archive databases etc (this could not be an English Heritage commitment/responsibility). It was noted that there might be potential for reduced input with the use of a wiki-type website instead.
- Identifying/securing sources of money over the long-term is problematic
- The importance of follow-up meetings to sustain interest generated by the workshop was emphasised

(3) Funding/collaboration

- Possibilities for a Leverhulme/AHRC bid to develop best practice in the designing of experiments
- The possibility of developing website on experimental archaeology, although such resources would require funding (this would also apply to the development of e-newsletters etc). Farina Sternke (Glasgow University) highlighted the on-line experimental archaeology database she is currently developing (its aim is to facilitate networking (1) and provide information (2): a resource maintained by the researchers for the researchers). First trials of the database (which is intended to be multi-language) were intended for end of 2008, with the database intended to go live in spring 2009. Roeland Paardekooper (Exeter University) has also developed an on-line database of experimental archaeology (including an extensive bibliography). It would therefore seem logical to work through these existing resources rather than to try and re-invent the wheel.
- Regarding the issue of funding, Roeland Paardekooper (Exeter University) has highlighted the need to fund organisations (e.g. EXARC) as well as individual experimental projects and ideas.

Thank you,

Prof. Martin Bell, Dr Rob Hosfield, Dr Wendy Matthews, Prof. Stephen Nortcliff, Dr Alex Brown, and Rowena Banerjea (on behalf of all those who attended the workshop)