

A REVIEW OF STANDARDS IN ENGLAND FOR THE
CREATION, PREPARATION AND DEPOSITION OF
ARCHAEOLOGICAL ARCHIVES

by

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1. INTRODUCTION

This project has arisen out of the recommendations made in Section 10 of the recent English Heritage publication *Archaeological Archives: Documentation, Access and Deposition. A Way Forward* (Perrin, 2002, 35). Point 10.1.1 recommends that ‘Standards guidance should be developed...which sets out archive procedures, roles and responsibilities for the wider profession’, while 10.3.1 recommends a project ‘to review current...model briefs in order to determine how new standards...can be implemented and monitored’. This review represents the first stage in addressing these recommendations. It has been carried out under the auspices of the Archaeological Archives Forum (AAF), funded by English Heritage (EH) and supported by the Institute of Field Archaeologists (IFA).

It is important to recognise that this is primarily an information gathering exercise, designed to inform future decision-making, rather than providing answers to the problems that have been identified.

1.1 AIMS

- 1.1.1 To provide an overview of existing standards for the creation, compilation, preparation and delivery of archaeological archives.
- 1.1.2 To identify areas where no commonly held standards exist, or where there are inconsistencies, and to make proposals that may rectify any such situation.
- 1.1.3 To gain an understanding of how the archive process is managed by considering the roles of different institutions and organisations and the relationships between them, and indeed how they perceive their own responsibilities and position within the archive process.
- 1.1.4 To establish the feasibility of producing a set of national standards for the preparation and deposition of archaeological archives.

1.2 METHODS

1.2.1 Literature search

This has been achieved by collecting as many documents as possible that set standards of archaeological practice. Project briefs might specify methodologies, for instance, while field and finds manuals would set out systems of terminology and recording, and museums will have standards for archive deposition. Gathering these documents together would provide a means of obtaining a measured understanding of who sets standards and how, where different responsibilities lie, and which areas are not adequately covered.

1.2.2 Consultation

Three meetings were held, in London, Worcester and York, where local representatives of various parts of the archive creation process; planning archaeology, fieldwork, specialist research and museum curation; were invited to discuss the issues arising from the literature search, and provide feedback.

Further consultation took the form of an e-conference based around the first draft of the report.

1.3 DEFINITION

Before considering the results of this work, it may be useful to establish an agreed definition of the term ‘archaeological archive’. Several definitions have been offered in the recent past, and those that are still current are set out in Table 1. It is notable that most of them refer to archaeological projects, or even specifically excavations, as the producers of archive, thus ignoring the various other elements of the nation’s archaeological collections that are not derived specifically from what are presently understood to be systematic methods of investigation and retrieval; for example antiquarian collections and donations.

The main focus of this review *is* on current project-based systems of archive production, but it is as well to establish that museum management plans (which inform their archive deposition standards) define their collections, and therefore the archaeological archive, in line with a broader understanding of possible sources.

The definition which is adopted here as the most useful and comprehensive, is also the latest, and is taken from Perrin’s English Heritage document, *Archaeological Archives: a way forward*:

‘...all parts of the archaeological record, including the finds and digital records as well as the written, drawn and photographic documentation.’

Most importantly, this definition refers to the ‘archaeological record’, which may include all elements of existing museum collections. It might usefully be extended to include extant sites and monuments, which also surely comprise the archaeological record, but that is beyond the scope and remit of this project.

2 THE ARCHIVE PROCESS

Before setting out any results it is important to establish the framework upon which this analysis has been based and there are three main elements to this. The first is the essential premise for the creation of archives in archaeology. The second is the actual process of archive creation, and the various players who influence it. The third is the form that the archaeological record takes, at least within the remit of this project, and the various elements of it that may be prescribed by standards.

2.1 PRINCIPLES

The essential premise upon which this report is based, as indeed is the work of the AAF, is that:

All archaeological work must result in a stable, ordered, accessible archive.

This is true of all parts of the archaeological process, from desk-based work to large-scale excavation, and all archaeological practitioners must acknowledge and accept their responsibilities in this regard. All documents that set out requirements or standards for archaeological work should reflect this requirement.

A second principle is that:

All aspects of the archaeological process affect the quality of the resulting archive.

The archive process begins with the creation of the first record, and if systems of recording are not consistently applied, then the archive will not be ordered or accessible; for example, if there is no recognised terminology for features or deposits, then it will not be possible to separate records of post-holes from pits, or if only some features have their dimensions recorded then it will be difficult to analyse the information.

This is the starting point for this review of the archive process.

2.2 ARCHIVE CREATION

2.2.1 Processes

An archaeological archive is created and established through any or all of the processes of planning, collection, analysis, reporting, ordering, packing and transfer.

- Collection of records, objects, samples
- Analysis of records (written, drawn, photographic), objects, samples, data
- Reporting results from analysis
- Ordering of records, data, objects, samples
- Packing of records, data, objects, samples
- Transfer of records, data, objects, samples

N.B. This is not necessarily the same as the process of creating an archaeological report, where the craft of interpretation, and the processes of publication, are essential elements. The point of an archaeological archive is that it is a resource that can be revisited, reinterpreted and republished.

2.2.2 Players

These processes are under the control of / influenced / monitored by

- Landowners / Developers
- Planning archaeologists
- Consultant archaeologists
- Contracting archaeologists
- Specialists
- Museum archaeologists

Among these, landowners rarely produce method statements, manuals or standards that affect the archive delivery process, and they have not been consulted.

Consultants are a difficult group to identify and approach collectively, and although their machinations often affect the way the archaeological process is carried out on particular projects, they have not produced guidelines or standards that can easily be incorporated into this project.

Specialists too have no forum that fully represents them all, and although the IFA Finds Group comes very close, there are too many independent specialists who do not belong to the IFA or the Finds Group. Individual specialists have been consulted, but it has been difficult to measure their input into the archive process.

Those that figure most prominently in the literature review have therefore been those that produce, as a matter of course, documents that address the requirement to produce a stable, ordered, accessible archive: planning archaeologists, contractors and museum curators.

2.2.3 Sources

The people who influence, create and manage archaeological archives are themselves informed and influenced by various sources, including existing strategic documents, standards and manuals. These in turn may have national, regional or local status, and may be summarised as shown in Table 2.

Beyond those documents, practitioners are subject to the pressures of necessity (political and practical), the limits of existing technologies and the restrictions of current research strategies.

Methods of data collection, recording and archive preparation, will be affected by: political pressure from sources outside the immediate management of a project (e.g. local planning policy); current research strategies (e.g. the presupposition that 20th century finds are of no interest); practical necessity (e.g. limited resources, or sudden withdrawal of resources); technological condition (e.g. the currency of IT equipment) and expertise.

2.2.4 Procedures and Prescriptions

The archaeological archive may be divided into three main elements:

- The documentary archive includes everything that is in hard copy – including written records, drawings and photographs (including negatives, prints, transparencies and x-radiographs).
- The material archive includes all objects (artefacts or environmental materials) and associated samples (of contextual materials or objects).
- The digital archive includes all computer-generated records, including text, data, drawings and photographs.

As shown above, six procedures have been identified as part of an archaeological project: collection, analysis, reporting, ordering, packing and transfer.

It is possible to set out specific tasks that apply to each element of the archaeological archive as follows:

- Documentary Creation of text, records, drawings, photographs as part of the collection, analysis and reporting process
Classification of text, records, drawings and photographs as part of collection and ordering
Marking documents as part of the ordering and packing process
Indexing documents as part of the collection and ordering process
Packing documents
- Material Treatment of finds as part of the collection process
Marking finds as part of collection
Classifying finds as part of collection and analysis
Recording finds as part of collection and analysis
Packing finds
- Digital Creation of digital media as part of collection, analysis and reporting
Indexing digital media as part of ordering the archive
Submission of digital media as part of packing and transfer

These activities will usually be described in project designs, practise manuals and standards documents. A project brief might stipulate the application of certain methods of record creation, thus influencing the format of the archive. A field manual could influence record creation by explaining the use of context record sheets and the aspects of a context that are to be recorded (e.g. dimensions, stratigraphic relationships, soil colour) and by indicating the required scales for plans and sections drawings. A finds manual may describe techniques of cleaning and marking, set out the terminology applicable in the recording of material and object types, and explain how finds record sheets are compiled. A museum deposition standard might list the types of material to be used in packing particular objects, explain how drawings are to be labelled and packed or stipulate a particular box size for bulk finds.

The purpose of the literature review has been to establish how many such documents prescribe methods for carrying out each task.

3 RESULTS

3.1 RESPONSE

The previous section has described the principles that underpin the collection of the data to be presented. The following sources were approached for the following types of document:

- Planning archaeologists Model or sample project briefs / specifications
- Contracting units All manuals relating to the recording of information, the ordering of records or packing and storing
- Museum curators Standards for archive deposition

3.1.1 The following replies were received:

- Thirty-one planning units were approached and twelve replies were received.
- Forty-four consultants were approached and none of them replied.
- All the IFA Registered Archaeological Organisations were asked to provide documents, and a further 49 contracting units were approached, and fifteen replies were received.
- Twenty-one museums were approached and thirteen replied.
This figure has been enhanced by the addition of 43 museum archive standard documents that were collected by Val Bott in the course of a separate project, which she has most kindly made available to this review.

Thirteen national standard documents were also reviewed.

3.2 REVIEW TECHNIQUE

Each document was reviewed to establish how the tasks relating to the documentary, material and digital archive are addressed and three grades were established:

- 0 No reference
- 1 Reference to other existing standards
- 2 Prescription of specific methods in the undertaking of tasks.

Further aspects of the archiving process have also been identified, and grouped as 'General Archive Requirements':

- Box size
- Print-outs of digital records
- Inventory of archive content
- Microfilming of original records
- Transfer of title

Other, specific issues relate to the material and digital archive. Scientific samples, such as thin-section slides or environmental samples, form part of the material archive and references to these have been graded in the same way. Digital text, usually in the

form of specialist or project reports, is composed of words, tables and figures and each of these elements are also graded separately.

This system of identifying and grading tasks has arisen out of the literature review exercise, as most documents cover the same sort of ground, depending on their type, as will be seen.

3.3 REVIEW RESULTS

3.3.1 DOCUMENTARY ARCHIVE

Table 3 sets out the results that relate to the documentary archive. The pattern that emerges, such as it is, is not unexpected.

- Planning documents rarely prescribe any of the tasks set out in Table 3, although they may refer to other existing standards, particularly those that are nationally recognised, such as the IFA Standards and Guidance, and especially MAP2.
- Contracting units are most prescriptive in the tasks of record creation and management, and less so in the areas of classifying and packing documents.
- Few museums feel that they are in a position to influence the creation of documentary records, but they do prescribe approaches to the tasks of marking and indexing, and especially packing.

No significant differences between each element of the documentary archive can be discerned.

There are areas of concern however:

- There seem to be few standards for the classification of different elements of the documentary archive, although how necessary this is may be debatable.
- It may be desirable for the briefs and specifications issued by planning units to be more involved in the archive creation process, particularly methods of recording and especially in ensuring that records are produced to archive standard.
- It is not good that some museums do not prescribe methods for indexing or packing the documentary archive.

3.3.2 MATERIAL ARCHIVE

Table 4 shows the results that relate to the material archive.

- Planning documents are not prescriptive of any aspect of the material archive, and their authors prefer, where they mention this at all, to refer to local museum standards.
- Contracting organisations are better represented, and many prescribe systems for every aspect of finds work and material archive preparation, although a disturbing number do not.
- Museums rarely prescribe methods of treatment, although many do refer to *First Aid for Finds*. Their direct involvement increases with the tasks of marking and packing, and this is largely because these are tasks that aid the retrieval of archive material.

Issues arising from this:

- The most glaring problem is the almost complete lack of recognition of the archive needs of scientific and environmental materials, including microscope slides and samples. This is no longer acceptable and must be addressed, perhaps mainly by museums because it is there that these things are to be preserved, but national standards may also be required. Where museums do acknowledge the possible existence of scientific and environmental material they often prefer them to be curated in the laboratories where analysis was carried out, on the grounds that those places are most likely to have the equipment to access the record. This may not be a satisfactory solution, as there is no guarantee that such places are able, or willing, to safeguard the long-term future of such material.
- The dependence of planning archaeologists on guidance from museums, whose systems may not always be of the highest standard.
- The unwillingness of museums to set standards for the classification and recording of finds. If different terminologies are applied to different project archives, then the museum collection will not be accessible as a unified whole.

3.3.3 DIGITAL ARCHIVE

Table 5 sets out the results relating to the digital archive.

This is an area of major concern. Despite the establishment of the [Archaeology Data Service \(ADS\)](#) their standards are rarely referred to, and few documents set any other measures or standards. The total column summarises the situation: the processes of creation and indexing of digital media are ignored by over 70 documents. The content and format of text files is also ignored. The submission of digital media is considered more frequently, mainly in terms of the types of media (diskette, CD etc.) that are required.

There is a clear need for the guidelines and standards set out by the ADS to be understood and adopted by those who monitor the archaeological process, especially planning archaeologists and museum curators. Nearly all contracting organisations create digital archive, and some archives consist of nothing but digital records. These organisations must accept that they are responsible for helping to ensure the long-term accessibility of the archive they produce.

Implicit in this is the need to understand that digital material is perhaps the most fragile element of the archaeological archive, in terms of both the longevity of the storage media (much data stored on 5¼ inch floppy disks has now been lost) and also the currency of related software. There is also little understanding of the archival suitability of particular storage media, including diskettes, CDs and DVDs and even hard drives or magnetic tape. It is clear that if standards are not followed the risks are immediate, so that in a very short space of time digital material can be irretrievably lost. All producers and curators of digital archive must become aware of this.

3.3.4 GENERAL ARCHIVE REQUIREMENTS

Table 6 shows how different types of document refer to general archive requirements. Most of these have been identified from museum deposition standards, so it is not surprising to find them less well reflected in other types of document. There are, even so, surprising numbers of museums that do not specify box sizes. It is more disturbing, however, to find that 39 museums do not prescribe the need for an archive inventory, although most contractors do, and 39 make no reference to the production of microfiche copies of primary records. Most museums do, however, address the issue of title, but this complex problem might be more easily addressed if it was clearly set out in project briefs or specifications. Museums seem to suffer from lack of support at the planning stage and nowhere is this more clearly represented than in the transfer of title.

3.3.5 SUMMARY FROM LITERATURE REVIEW

The following points have been brought out by the literature review:

3.3.5.1 It is not possible to characterise the production of archaeological archives as a process that is measured, coherent and continuous. Planning documents rarely refer explicitly to the archive, and where they do it is usually to refer to other standards. Contractor's manuals are mainly concerned with collection and ordering procedures, but not always in recognition of the need to produce a stable, ordered, accessible archive. Museums are wary of being too prescriptive, partly because they do not have the resources to monitor archive delivery and perhaps also because they do not always have the support of local planning archaeologists.

3.3.5.2 There is no general recognition of what constitutes an archaeological archive, or the ways in which it should be compiled. Museum standards do not always reflect the likely requirements of future users, they often do not, for instance, prescribe systems of terminology and recording for finds. This problem is made worse by a more acute lack of understanding among planning archaeologists. There is, too often, no obvious mechanism for planners and museum curators to come together in setting standards and monitoring the application of them.

3.3.5.3 Contracting organisations are often more concerned with fulfilling the requirements of a project brief, in the form of a report, than in ensuring they meet their responsibilities in creating an accessible resource for the future.

3.3.5.4 Digital records and scientific/environmental samples, which are increasingly important elements of the archaeological archive, are not fully represented in existing, and especially local, standards. There is no clear strategy for dealing with the growing quantity of digital media.

4. CONSULTATION

4.1 SEMINARS

Three seminars were held, at which preliminary results from the literature review were presented. These meetings were attended by planning archaeologists, contractors, museum curators and specialists. Three very different discussions ensued, and it is difficult to summarise the results here, although the main points can be brought out. All three meetings were recorded on cassette tape for archive purposes.

Various headings may be set out that reflect the emphasis of the various discussions. Some are related to particular players, others to more general or even philosophical issues.

4.1.1 Planning

- Project briefs are not successfully governing archaeological practice, the resources are not always there to enforce them and they are inconsistent from region to region.
- Project briefs are not part of a system that addresses the long-term research potential of a co-ordinated approach to archaeological work.
- The system of developer-led archaeology leads to under-resourcing of too many projects, and there is no recognition among developers that the projects they fund are part of a wider effort to secure access to a national resource.

4.1.2 Contractors

- Contracting units require consistent and detailed standards, which will inform their project estimates.
- Contracting units should have manuals, and should be required to submit them as part of the tendering and monitoring process.
- There is a need for clear lines of communication to planning archaeologists and archive repositories.
- Independent, and even internal, specialists are rarely managed from a position of knowledge and understanding, so that their input into the project archive may not be coherent or comprehensive.

4.1.3 Specialists

- Specialists are rarely required to submit for long-term curation all parts of their archive, or any manuals that describe their methods.
- There is no organised or standardised mechanism for consultation between specialists and other players, especially museum curators.
- There is no control of reference collections built up by independent specialists.

4.1.4 Museums

- Museums suffer from a lack of political support, a low profile and insufficient resources, which affects the accessibility of their archaeology collections.
- There is no common understanding of the requirements for archive delivery.

- There may be a case, at least in some areas, for the creation of regional archaeological repositories, but this needs careful planning.

4.1.5 Archaeological archives

- It is necessary to establish why archaeological archives are important, and how we should explain this to other people.
- The prime responsibility of creating, collecting and protecting archaeological archives needs to be recognised in government, perhaps to the extent of making this a statutory requirement for local authorities.
- There is a case for establishing universal standards for the creation, ordering and delivery of archaeological archives, but it will be necessary first to agree distinctions between what *must* be, and what *should* be, in an archive.
- How is archive creation controlled in other disciplines? Are there benefits in making comparisons outside archaeology?

4.1.6 Responsibility

- All archaeological practitioners should recognise that they are responsible for the future accessibility of the archaeological record. The production of a report may satisfy a project brief, but must never be the main purpose of archaeological fieldwork.
- The patchy response from certain areas of the discipline reflects a lack of willingness to accept this responsibility.
- This ought to be reflected in how archaeological projects are resourced, and how research frameworks are developed.

4.2 E-CONFERENCE

The e-conference was held, through the good offices of the [Council for British Archaeology](#) and their Britarch website, over five days from the 1st to the 5th of December 2003. The intention was to devote the first four days to the consideration of specific themes, before a summing up on the final day. The themes included *Minimum Standards*, *Responsibility*, *Digital Archives*, and *Regional Repositories*. The feedback on each of these themes will be considered in turn.

4.2.1 Minimum Standards

This theme was introduced as follows:

The setting out national minimum standards for the compilation and deposition of minimum standards has been raised as a possible recommendation of this project, or at least on the basis of the data it presents. It has been suggested that contractors need to work to consistent standards, but project briefs and museum standards are very variable in their level of detail, and that minimum standards might address this inconsistency. Is this desirable, or even possible? How could such a standard be monitored?

There were five contributions to this discussion. One area of concern was that practitioners might apply 'minimum' standards as a matter of course, and thus not develop their methods or attempt to reach a higher standard:

'...people carefully control their work (expenditure) aiming at no less...but certainly no more.'

There was agreement, however, that general standards might be desirable:

'...it seems reasonable to assert that we should all work to agreed sets of standards in order that the results of the research process be comparable and intelligible'.

'The only solution...is a set of nationally agreed standards, which run all the way through from project design to archive deposit and publication...with some method of reporting and debarring those who will not adhere.'

It was pointed out that standards already exist for many areas of the profession, but that not all of them are universally recognised:

'...many of the specialist study groups...provide common standards... They are not...normally cited in the project briefs set by archaeological curators and nor do they seem to be read or acted upon by project managers...There would seem to be a good case for combining sets of standards into more comprehensive documents – why, for example, do different sets of standards exist for prehistoric pottery, Roman pottery and medieval pottery?'

Nor indeed, are they universally accessible:

'Standards...are much like a dictionary. The problem is...that few want to accept this standard...because: either other researchers speak a different language and need a translation of the dictionary, or the dictionary is not easily available, or the accessibility to the information...is not optimal. The bottom line is, when we have defined standards we have to make them user-friendly...If useful and efficient one would be a fool not to use them.'

'The need for standardization in a form that is easily digitised/computerized and with a fixed protocol is tantamount...'

There are areas where there is little consistency, and perhaps the entire problem needs to be elucidated at a more fundamental level:

'So what standards are necessary? I would suggest: ethical standards: i.e. an obligation on all...archaeologists to archive gathered information in a way that it will be preserved for future use. Procedural standards...what you actually do to archive data. Data standards...[to] ensure that the data you collect can be found, understood, preserved in the long term.'

This approach has great merit, in that the introduction of ethical standards should address the thorny issue of monitoring:

'...will a concern with the implementation of a monitoring regime sabotage discussions of the sorts of standards that we might be able to agree on? I for one would be most unhappy if...the monitoring of any aspect of my work was to be placed in the hands of the I.F.A.'

'...what to do if a unit refuses to meet the standards for an archive?...should I refuse to accept it? In which case what happens to it? And what can be done to enforce our standards when the unit says they are onerous and unreasonable?'

'How do you monitor/enforce these? Well the ethical standards rely on us all to educate and lobby both fellow practitioners and the wage-paying public that archaeology can be done well or it can be done badly, and that archives are part of doing archaeology well.'

The main points of this discussion may be summarised as follows:

- It would be useful to try to combine existing standards, and to place them on the web, in order to improve accessibility to relevant information. It may also be appropriate to provide advice on how to implement them.
- Standards should not represent a compromise but reflect a desirable level of practice. It is inadvisable to apply the word 'minimum'.
- A universally acceptable system of monitoring needs to be found.
- Ethical standards need to be more forcefully propounded and universally accepted.

Some of this discussion impinges slightly on the second theme addressed in the e-conference.

4.2.2 Responsibility

This part of the conference was introduced as follows:

It became clear during consultation that there is a need for all archaeological practitioners to recognise that the production of a stable, ordered and accessible archive is one of the most important purposes of archaeological work. If that is agreed, then it follows that all of us, planners, contractors, consultants, specialists and museum curators, must own up to, and share, responsibility for ensuring that this aim is incorporated into every part of the archaeological process. Is the current climate of competition and developer funding conducive to the profession uniting in taking collective responsibility on this issue?

There was only one contribution specifically addressing this theme, although some others touched on it. There seems to be a rather pessimistic outlook here.

'It would appear not. The climate is not new and we haven't united, have we?'

'Competition should be a spur to collective responsibility but we've had over a decade of it now and it hasn't resulted in this...there has to be organizational commitment to the...archive, and this is clearly not the case.'

- The collective answer to the introductory question would appear to be no.

There are, however, few recommendations that stem from this that are directly applicable to this project. It seems clear that the acceptance and application of standards is of the utmost importance, not only in providing a measure for good practice, but also in facilitating the universal acknowledgment of a shared ethical responsibility. The fundamental necessity for this goes beyond the bounds of the archaeological profession, however, as it is necessary for the whole of our society to comprehend, embrace and defend the cultural contribution made by those who study the past. Only then will our profession find sufficient security to promote the proper pursuit of excellence and innovation.

4.2.3 Digital Archive

This theme was introduced as follows:

One area that is glaringly under-represented in many documents relating to archive standards is that digital material is rarely mentioned. Yet it is clear that computers are used in all parts of the archaeological process. There is a clear need for archive repositories to work with planners and contractors to provide clear guidance on the management of digital archive. Yet few of us are sufficiently aware of how digital archives should be presented or preserved, so how can these standards be achieved?

Three people contributed to this discussion. One area of concern seems to be that, although there are standards for the curation of digital material, there is no consistency in the composition of digital material:

'...there is no commonality between the files created...In the ideal world it should be possible to open, say, databases of finds from two excavations, merge them and carry out some analysis on the data...the alternative is...thousands of digital archives being created, all incompatible with each other.'

There also seems to be confusion arising from the variety of existing standards for the management and curation of digital archive:

'I am wondering if the debate in England, as you have so many standards and guidance already (for example, EH Digital Archive Strategy, EH Preservation Management Manual, ADS Collections Policy, Guides to Good Practice series, as well as numerous (e- and hardcopy) publications on specific aspects such as file formats) should concentrate on gaining a sense of cohesiveness and agreement between these standards.'

A contribution from William Kilbride at the Archaeology Data Service put these concerns into perspective, while raising others:

'There's a whole raft of activities needed to take this forward. The practical and technical measures are obvious, and many delegates will be familiar with both the guides to good practice series and the current range of archives available through the ADS. The less obvious ones however are just as important - if not more so. These include raising

awareness of the challenge of digital preservation, including clear provision for digital archiving in policy documents and ensuring that digital archives can be retrieved easily through the extraordinary maze of stuff that exists on the Internet.

Perhaps I could propose some discussion points.

1. The demand for digital data is extensive and expectation is insatiable. In my experience, students are surprised that we don't just all routinely provide electronic access to all our documents all the time. Also, requests for help and interest often come from the strangest places. How do we turn this demand for digital materials into demand for conventional materials too? How should the relationship between physical and digital resources develop?

2. Digital preservation places an onus on the creators of data in a way that other forms of preservation do not. You can hand a book to the library and reasonably expect it to look after it for you. But in many cases digital data needs a preservation plan from the outset. This is particularly true of documentation that explains codes or abbreviations. One approach may be complete systematisation of recording- this would make documentation a once and for all standard which we could just trot out when needed. But managerially this is unlikely, and furthermore the means of recording sites are themselves the subject of research and development. How much freedom do we want or need in our recording practices, and what are the implications for digital preservation?

3. The costs of digital preservation are nothing when compared to the costs of 'not' taking steps. Digital archaeology - the task of trying to reincarnate poorly documented files - can be hugely expensive, and isn't a practical solution. This is now largely accepted by the major public sector funding bodies who are actively involved in initiatives to promote digital preservation. How do we make this case to private developers who may only see short term expense?'

The following points arise:

- It is apparent that our expectations of the digital archive exceed our willingness to engage with the proper production and management of it. We need to find a way of balancing research requirements with the development and implementation of effective methodologies.
- The threat to the digital archive is immediate, and too many archaeologists are unaware of this. There needs to be training in all areas of the profession.
- There is a requirement for greater clarity in the presentation of data standards.
- The current system of archaeological funding is probably not conducive to the preservation of digital archive.

4.2.4 Regional Repositories

This is how this theme was introduced:

One way of establishing greater consistency for archive deposition might be to establish regional archaeological archive repositories. Contractors would have no difficulty in identifying places to deposit project archives, and there may be an established infrastructure for monitoring and managing archive preparation and deposition, while full-to-bursting museum stores would be a thing of the past. Is this desirable, or are the local ramifications insuperable? Which organisation(s) would set up and manage such a system? Would this not undermine the local value of archaeology?

Nobody addressed this specific issue, and it was not raised in any of the other contributions.

4.2.5 Summary of e-conference

Because there were so few contributions to the e-conference, any summary of the proceedings can scarcely be representative of the views of the wider archaeological community. One conclusion may be that the lack of debate is a reflection of a general lack of interest in this subject, and that has to be reflected in the recommendations arising from this project. It is encouraging, however, to find that the e-conference attracted contributions from beyond England, including Holland, Iceland and the USA. This suggests that it would be useful to extend the project into other countries and gather information that could inform current practice both here and abroad.

The main points can be summarised as follows.

- There is little interest in this subject within the archaeological community in England, and this needs to be addressed.
- There is scope for extending this survey to other countries.
- There may be a demand for establishing national standards and this needs to be explored more fully.
- There is a need for standards to be universally accepted, applied and monitored.
- The value and fragility of the digital archive are not fully understood within the wider archaeological community and this is reflected in a general lack of awareness, or lack of understanding, of existing standards and the prime importance of following them.

5. AREAS OF CONCERN

This review has illustrated the following areas where standards are either inconsistent, insufficient or entirely absent. These give rise to the recommendations presented in Section 6.

- 5.1.1 There is no common acceptance of the prime responsibility for producing an ordered, stable, accessible archaeological archive.
This is true both within and outside the archaeological community. There has been no attempt by archaeologists to have this nationally understood, so it is not accepted within government and therefore has not been communicated to developers who provide funding.
- 5.2 Standards of data collection are extremely varied.
This is true for the recording of structures and finds. Some contractors employ single-context recording while others do not. Some classify and quantify finds in great detail while others simply order finds by material type and count fragments. Planning briefs rarely specify a consistent approach to data collection and nor do archive repositories.
- 5.3 There is no common system for the organisation, classification and indexing of an archive.
Many contractors have no system for organising an archive, and some archive repositories do not make requirements for organising and labelling archives. This will lead to difficulties of access.
- 5.4 Almost every archive repository specifies different box sizes.
This would be a very difficult problem to overcome, but it is an issue for contractors, who often have to deliver to several different repositories.
- 5.5 There are very few standards for the curation of scientific samples.
- 5.6 There is a dire need for the universal adoption of existing digital archive standards.
Few planning briefs, contractors manuals or archive deposition standards address the creation, presentation and preservation of digital material.
- 5.7 There are insufficient resources, within planning archaeology and museums, for monitoring archive creation and delivery.
This is true for the monitoring of contractors, and independent specialists (who may require monitoring by the contracting organisations that engage them).
- 5.8 There are too many archive repositories with different archive deposition requirements.
This is confusing for those who wish to deposit in archives and those who want to access them.

6. RECOMMENDATIONS

(Relevant paragraphs from section five are given in parentheses).

1. The archaeological profession needs to accept that archives are a primary responsibility. MLA, EH, IFA, ALGAO, SCAUM and SMA all need to address this in their literature, standards and communications with other bodies. (5.1)
2. The AAF, in association with IFA, SMA and perhaps MLA, should attempt to establish universally accepted standards for the creation, preparation and deposition of archaeological archives. (5.2, 5.3, 5.4)
3. The paucity of local standards that consider the archiving of scientific and environmental material needs to be addressed through the compilation of national guidelines. This might be led by the EH Scientific Advisory Panel. (5.5)
4. The lack of recognition among local standards of the issues surrounding digital archives needs to be addressed by ALGAO, EH and the IFA (and perhaps the SMA) in association with ADS. All local repositories must be fully cognizant of, and able to implement, current standards for digital archives, as promoted by ADS. (5.6)
5. A guideline mechanism for the monitoring of archive delivery to national standards must also be developed, perhaps led by IFA and ALGAO. (5.7)
6. Specialists need to be more involved in archive preparation and delivery, and the onus is at present on their employers. A survey based on interviews with independent specialists, might provide the basis for a more organised approach that sets out the responsibilities of specialists, units, planners and museum curators alike. (5.7)
7. A feasibility study into the establishment of a regional repository should be undertaken for a suitable area of the country, the choice of which may be informed by the map of archaeological collecting areas. (5.8)

1991	EH	MAP2	‘The site archive will contain all the data gathered during fieldwork’ ‘The research archive will be derived from the work done during the analysis phase’ (pages 30 and 37).
1992	MGC	Standards in the museum care of Archaeological Collections	‘all the finds and records, in whatever form, generated by an archaeological excavation or other fieldwork programme’
1995	SMA	Towards an Accessible Archaeological Archive	‘the archive is taken to include both the documentation associated with a project, and any archaeological material found during the project’ (page 54).
1998	MGC	A Survey of Archaeological Archives in England	‘Archaeological archives comprise the physical record and the collected remains resulting from archaeological activity...’ (page 13).
2000	MDA	Standards in Action	‘All material, both documentation and objects, produced from an excavation’
2002	EH	Archaeological Archives: a way forward	‘..all parts of the archaeological record, including the finds and digital records as well as the written, drawn and photographic documentation.’ (page 3)

Table 1: Various definitions of the term ‘archaeological archive’.

National	Government	PPG16
	English Heritage	MAP2
		Environmental Archaeology
		A Model for the Description of AA
	Resource (or MGC)	Museum registration scheme
		Standards in the Museum Care of Archaeological Collections
		Models for the Curation of Archaeological Archives in England
	IFA	Standards and Guidance
		Documentary Archives, Technical paper
		Microfilming, Technical Paper
	MDA	Spectrum (Standards in Action)
	SMA	Towards an Accessible Archaeological Archive
		Selection, Retention and Dispersal of Archaeological Collections
	UKIC	First Aid for Finds
		Environmental Standards for permanent storage
		Guidelines for Excavation Archives
	ADS	Digital Archives from Excavation and Fieldwork
		Strategies for Digital Data
	Specialist	The study of Later Prehistoric Pottery: parts 1 and 2
		Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics
		Draft minimum standards for the recovery, analysis and publication of ceramic building material
Local Standards	Planning	Briefs / Specifications
	Contracting	Site / finds manuals
	Museums	Collecting policies
		Archive deposition standards

Table 2: Some sources for the production and management of archaeological archives

			National	Planning	Contractor	Museum	Total
Written	Create	None	5	4	7	41	57
		Refer	5	6	2	14	27
		Prescribe	3	2	6	1	12
	Classify	None	10	11	11	52	84
		Refer	2	1	3	2	8
		Prescribe	1		1	2	4
	Mark	None	10	9	5	31	55
		Refer	2	2	2	7	13
		Prescribe	1	1	8	18	28
	Index	None	10	7	3	41	61
		Refer	2	5	2		9
		Prescribe	1		10	15	26
	Pack	None	9	6	7	13	35
		Refer	3	6	3	9	21
		Prescribe	1		5	34	40
Drawn	Create	None	7	1	7	46	61
		Refer	3	10	2	8	23
		Prescribe	3	1	6	2	12
	Classify	None	10	11	11	52	84
		Refer	2	1	3	2	8
		Prescribe	1		1	2	4
	Mark	None	10	8	4	33	55
		Refer	2	3	2	7	14
		Prescribe	1	1	9	16	27
	Index	None	10	6	1	41	58
		Refer	2	6	1	1	10
		Prescribe	1		13	14	28
	Pack	None	9	5	8	14	36
		Refer	3	7	2	11	23
		Prescribe	1		5	31	37
Photo	Create	None	7	4	7	52	70
		Refer	3	7	2	3	15
		Prescribe	3	1	5	1	10
	Classify	None	9	11	11	0	31
		Refer	2	1	3	2	8
		Prescribe	2		1	4	7
	Mark	None	10	9	4	31	54
		Refer	2	2	2	9	15
		Prescribe	1	1	9	16	27
	Index	None	10	6	2	41	59
		Refer	2	6	1	1	10
		Prescribe	1		12	14	27
	Pack	None	9	5	8	12	34
		Refer	3	7	2	10	22
		Prescribe	1		5	34	40
Totals			13	12	15	56	96

Table 3: Numbers of documents that set out tasks relating to the documentary archive.

			National	Planning	Contractor	Museum	Total
Bulk	Treat	None	7	3	3	31	44
		Refer	4	9	4	21	38
		Prescribe	2		8	4	14
	Mark	None	7	4	3	15	29
		Refer	4	8	4	13	29
		Prescribe	2		8	28	38
	Classify	None	7	11	5	44	67
		Refer	3	4	3	8	18
		Prescribe	3		7	4	14
	Record	None	7	8	4	46	65
		Refer	3	4	2	7	16
		Prescribe	3		9	3	15
	Pack	None	8	3	3	2	16
		Refer	5	9	5	14	33
		Prescribe			7	40	47
Sensitive	Treat	None	8	1	3	22	34
		Refer	4	11	5	30	50
		Prescribe	1		7	4	12
	Mark	None	8	4	4	15	31
		Refer	4	8	4	12	28
		Prescribe	1		7	29	37
	Classify	None	9	8	5	46	68
		Refer	3	4	3	6	16
		Prescribe	1		7	4	12
	Record	None	9	8	4	46	67
		Refer	3	4	3	7	17
		Prescribe	1		8	3	12
	Pack	None	9	3	3	2	17
		Refer	4	9	5	15	33
		Prescribe			7	39	46
Sci/Env	Slides	None	11	12	15	52	90
		Refer	2			3	5
		Prescribe				1	1
	Samples	None	11	10	10	40	71
		Refer	2	2	3	14	21
		Prescribe			2	2	4
	Other	None	11	12	12	48	83
		Refer	2		2	7	11
		Prescribe			1	1	2
Totals			13	12	15	56	96

Table 4: Numbers of documents that set out tasks relating to the material archive.

			National	Planning	Contractor	Museum	Total
Data	Create	None	9	11	12	52	84
		Refer	3	1	2	3	9
		Prescribe	1		1	1	3
Index	None	11	12	12	49	84	
	Refer	1		1	3	5	
	Prescribe	1		2	4	7	
Submit	None	7	7	10	26	50	
	Refer	5	5	2	21	33	
	Prescribe	1		3	9	13	
Images	Create	None	12	12	13	54	91
		Refer			1	2	3
		Prescribe	1		1		2
Index	None	11	12	12	49	84	
	Refer	1		1	3	5	
	Prescribe	1		2	4	7	
Submit	None	10	10	10	30	60	
	Refer	2	3	2	17	24	
	Prescribe	1		3	9	13	
CAD	Create	None	12	12	12	54	90
		Refer			1	2	3
		Prescribe	1		2		3
Index	None	11	12	12	49	84	
	Refer	1		2	3	6	
	Prescribe	1		1	4	6	
Submit	None	10	9	10	30	59	
	Refer	2	3	2	17	24	
	Prescribe	1		3	9	13	
Text	Words	None	12	11	12	54	89
		Refer		1	2	2	5
		Prescribe	1		1		2
Figures	None	12	12	13	56	93	
	Refer			2		2	
	Prescribe	1				1	
Tables	None	12	12	11	56	91	
	Refer			4		4	
	Prescribe	1				1	
Submit	None	9	8	9	31	57	
	Refer	3	3	2	16	24	
	Prescribe	1	1	4	9	15	
Totals			13	12	15	56	96

Table 5: Numbers of documents that prescribe tasks relating to the digital archive.

		National	Planning	Contractor	Museum	Total
Box size	None	10	8	11	12	41
	Refer	3	4	3	2	12
	Prescribe	0	0	1	42	43
Print-out	None	11	10	11	34	66
	Refer	2	2	3	3	10
	Prescribe			1	19	20
Inventory	None	9	7	4	24	44
	Refer	2	5	2	15	24
	Prescribe	2		9	17	28
Microfiche	None	10	5	5	39	59
	Refer	2	5	2	1	10
	Prescribe	1	2	9	16	28
Title	None	8	7	7	3	25
	Refer	4	5	4	2	15
	Prescribe	1		4	51	56
Total		13	12	15	56	96

Table 6: Numbers of documents that prescribe tasks relating to general archive requirements.

Appendix 1

A list of national documents used in the literature review.

Archaeological Ceramic Building Material Group, 2000, 'Draft Minimum Standards for the Recovery, Analysis and Publication of Ceramic Building Material'

English Heritage, 1991, 'Management of Archaeological Projects'

English Heritage, 2002, 'Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post-excavation'.

English Heritage, 'Waterlogged wood. Guidelines on the recording, sampling, conservation, and curation of waterlogged wood'

Institute of Field Archaeologists, 'Archaeological documentary archives' IFA Paper No.1

Institute of Field Archaeologists, 1999, 'Standard and Guidance for archaeological excavation'

Institute of Field Archaeologists, 2001, 'Standard and Guidance for the collection, documentation, conservation and research of archaeological materials'

Longworth C., and Wood B., 2000, 'Standards in Action Book 3. Working with Archaeology' Museum Documentation Association

Medieval Pottery Research Group, 2001, 'Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics' Occasional Paper No. 2

Owen J., (ed) 1995, 'Towards an Accessible Archaeological Archive' Society of Museum Archaeologists

RCHME, 1996, 'Recording Historic Buildings. A Descriptive Specification'

Richards J., and Robinson D., 'Digital Archives from Excavation and Fieldwork: Guide to Good Practice' Archaeology Data Service

Study Group for Roman Pottery, 1994, 'Guidelines for Archiving of Roman Pottery'.

Swain H., 1998, 'A Survey of Archaeological Archives in England' MGC, EH

Appendix 2

A list of organisations who submitted relevant documents, or whose documents were included in the archive compiled by Val Bott, that were used in the literature review.

Planning authorities

Bedfordshire, Buckinghamshire, Cheshire, Coventry, East Anglia, Eastern England, Hampshire, Kent, Peak District, Wiltshire, Worcester, York.

Contractors

Archaeological Project Services, Archaeological Services and Consultancy Ltd., Bath Archaeological Trust, BUFAU, Cambridgeshire County Council, Chester, Essex County Council, Gifford and Partners, John Samuels Archaeological Consultancy, Norfolk Archaeology, Northamptonshire County Council, Oxford Archaeology, The Heritage Network, Wessex Archaeology, York Archaeological Trust.

Museums

Bath and NE Somerset, Bath Roman Baths, Bedfordshire, Bradford, Bristol, Buckinghamshire, Canterbury, Carlisle Tullie House, Cheltenham, Cheshire, Chester, Colchester, Cornwall, Cotswold, Coventry, Derbyshire Museum Group, Dorset, Durham County, Durham University, Epping Forest, Essex Museum Group, Exeter, Gloucester, Hampshire, Herefordshire, Hertfordshire Museum Group, Hull, Isle of Wight, Leeds, Leicestershire, Lincolnshire, Lincolnshire North-East, Liverpool, Museum of London, Norfolk, Northampton, Nottingham Brewhouse, Oxfordshire, Peterborough, Plymouth, Portsmouth, Reading and Newbury, Rotherham, Sheffield, Shropshire, Somerset, Southampton, Southend, Stoke-on-Trent, Stroud, Swindon, Warwickshire, Wiltshire, Winchester, Worcestershire, Yorkshire East Riding.

Appendix 3

Other documents considered but not included in the review.

Bewley R., Donaghue D., Gaffney V., van Leusen M., Wise A., (eds) 'Archiving Aerial Photography and Remote Sensing Data' Archaeology Data Service

Brown A. and Perrin K., 2000, 'A Model for the Description of Archaeological Archives' English Heritage

Condron F., Richards J., Robinson D., Wise A., 'Strategies for Digital Data'

English Heritage, 2001, 'Archaeometallurgy'

Handley, M., 1999, 'Microfilming archaeological archives' IFA Paper No.2

Holm S., 1998, 'Facts and Artefacts. How to document a museum collection' Museum Documentation Association

Jones S., MacSween A., Jeffrey S., Morris R., Heyworth M., 2003, 'From the Ground Up. The publication of archaeological projects: a user needs survey'

Miller P. and Greenstein D., (eds) 1997, 'Discovering Online Resources Across the Humanities. A practical implementation of the Dublin Core' Arts and Humanities Data Service

Perrin K., 2002, 'Archaeological Archives: Documentation, Access and Deposition. A Way Forward' English Heritage

RCHME, 1996, 'Recording Historic Buildings. A Descriptive Specification'

Resource, 2003, 'Registration Scheme for Museums and Galleries: Registration Standard'

Society of Museum Archaeologists, 1993, 'Selection, Retention and Dispersal of Archaeological Collections'

Thackray C., 'Archaeological Artefacts and Archives in the Ownership of the National Trust: towards a national policy'.

Yorkshire Museums Council, 2000, 'Increasing Antiquity: Archaeology collections and collecting in Yorkshire and Humberside'.