Archaeological Archives

A guide to best practice in creation, compilation, transfer and curation

AAF

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FOREWORD

The creation of stable, consistent, logical, and accessible archives from fieldwork is a fundamental building block of archaeological activity. Since the discipline emerged in the late 19th and early 20th centuries, it has been recognised that the process of excavation is destructive and that no archaeological interpretations are sustainable unless they can be backed up with the evidence of field records and post-excavation analysis. Such records and analysis should be available for re-examination and re-interpretation. With this guide to best practice, for the first time the whole archaeological discipline has a single document to use in ensuring archives are created properly, and curated in such a way as to make them usable into the future.

This document was born out of the creation of the Archaeological Archives Forum (AAF) in 2003. This was a recommendation of Kathy Perrin's 2002 report for English Heritage, *Archaeological Archives: documentation, access and deposition: a way forward*. This report built on and developed the Swain report of 1998, *A survey of archaeological archives in England*. These earlier documents marked recognition by the profession that the importance of archives in theory was not being translated into practice. Hopefully, this document and other work of the AAF will correct this.

The author of the report, Duncan Brown, who has for many years championed standards for archaeological archives in Southampton, should be commended for his efforts in producing a comprehensive, practical and exhaustive document. He was supported by a steering committee including myself, James Dinn from ALGAO, Kathy Perrin from English Heritage and Kenneth Aitchison from the IFA. Kenneth also acted as project manager. All organisations involved in AAF have endorsed this guidance and several have contributed materially to its production.

But this guidance should be just the beginning. It will be a great leap forward to have the confidence that all archaeological fieldwork in the UK is generating ordered and usable archives that are curated in a sustainable way and are accessible for all to use. There is then the need to ensure archaeologists are maximising use of this unique resource. Huge amounts of new knowledge are held in archives, waiting to be researched and utilised. The next challenge to the profession is to unlock this knowledge.

Hedley Swain
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1   INTRODUCTION

Archaeological archives are an essential element of the archaeological resource. That mass of collected paper, drawings, photographs, objects and digital data, is a resource that enables not only the reinterpretation of original findings but also provides the raw material for further research, informs museum displays and teaching collections and gives every member of our society access to the evidence for our shared past. The archaeological archive is growing in size and also in significance as its value is more widely recognised. At a time when the reports of many archaeological projects appear as 'grey literature', and are thus only barely within the public domain, the project archive has become a vital source of information. Existing points of access to the archaeological archive include Historic Environment Records (HERs) and archive repositories. The former provide information on the extent of archaeological work carried out in a particular area, while archive repositories can facilitate access to records and objects. There is an increase in requests for consultation of HERs and archives, and it is therefore important that archaeological archives are accessible and comprehensible to all interested parties, archaeologists or otherwise.

Every archaeological project must therefore aim to produce a stable, ordered and accessible archive that can be assimilated easily into the collections of recognised repositories. Any repository that accepts an archaeological archive must be recognised as suitable for providing both long-term care and public access. Examples of these include accredited museums, local record offices and national monument archives. HERs and contracting archaeological organisations are not recognised as suitable permanent repositories for archaeological project archives.

The archive should be a record of every aspect of an archaeological project; the aims and methods, information and/or objects collected, results of analysis, research, interpretation and publication; and as such must be as complete as possible, including all relevant documents, records, data and objects. It is recognised, however, that collection must be subject to selection procedures, which are determined by the overall research aims of the project and requirements of the receiving repository. Selection for archive must follow accepted practice, and aim to preserve a complete and comprehensible record of the project. It is also good practice to prepare and deposit an archive efficiently, with the aim of quickly making it available to the widest audience. Use of

this document by archaeological practitioners should ensure that repositories will accept that an archive is at a required standard.

This Guide is intended to inform every stage of the archive creation and management process. It includes guidelines relating to each identified stage of an archaeological project, which should be used within the framework of existing standards and techniques, to ensure that archaeological archives are properly prepared and delivered. It is understood that individuals or organisations (eg national bodies, planning authorities, contractors, consultants, specialists, laboratories, museums) may develop their own technical manuals, eg for context or finds recording methods, or for labelling boxes. Those documents should refer to this Guide, which sets out best practice and relates to national and international standards.

1.1   How to use this document

This document, hereafter referred to as the **Guide**, sets out recommended standards for the creation, compilation, transfer and curation of archaeological archives. It summarises existing standards and accepted best practice for all parts of the archaeological archive, including written documents, drawings, photographs, digital material, and objects. Relevant current standards are listed in the bibliography.

It is aimed at *all* archaeological practitioners, including those involved in resource management, project planning, project management, consultancy, data collection/fieldwork, finds work, illustration, photography, conservation, analysis, monitoring, report writing, publication and curation.

To use this document you need to
   a. understand the definition of an archaeological archive, **Section 1.2**
   b. understand and accept the principles governing proper compilation and presentation of an archaeological archive, **Section 1.3**
   c. decide which part of the archaeological process you are engaged in, and establish the responsibilities of all personnel working on an archaeological project, or in an archive repository, **Section 2, Appendices I and II**
   d. consult the Standards section for guidance on how to create, compile, transfer and curate material in accordance with current standards, **Section 3**.

It is understood that, in circumstances beyond reasonable control, some standards are difficult to achieve, and where this is the case in this document 'should' is used instead of 'must' when describing what is desirable. At all times, however, archaeologists must acknowledge their responsibilities towards ensuring the longevity and accessibility of their archive, and this Guide describes what is required to achieve that.

Section 5 addresses archive transfer, copyright and transfer of title. This is a complex issue, and requirements often change. The principle of allowing the results of archaeological research to be accessed by as wide an audience as possible should, however, remain constant.

1.2   Definitions

The term 'archive' refers here to an archaeological archive. It is intended that this document will apply to all types of archaeological project. The term 'project' here means an archaeological project.

1.2.1   **Archaeological archive**: All parts of the archaeological record, including the finds and digital records as well as the written, drawn and photographic documentation (after Perrin 2002, 3).

1.2.2   **Archaeological project**: Any programme of work that involves the collection of information about an archaeological site, assemblage or object. Examples are aerial survey, building recording, conservation, desk-based assessment, evaluation, excavation, surface recovery, finds analysis, finds collection, on-site survey, resource management projects, remote sensing, scientific analysis and watching brief. These may broadly be divided into those projects that are destructive in the course of data-collection, eg excavation, and those that are not, eg aerial survey. All types of project are likely to create archive material, but this document is especially relevant to the 'destructive' type, where data collection is an unrepeatable process and the archive represents a unique and invaluable record. It is vital therefore that the archive is properly compiled and presented, so as to facilitate re-use of collected information.

1.3   Principles

This document is based on the following fundamental principles.

1.3.1   **All archaeological projects must result in a stable, ordered, accessible archive.** 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 principle.

1.3.2   **All aspects of the archaeological process affect the quality of the resulting archive**. The archive process begins with planning the creation of the first record, and, if proper 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 some features are photographed with no identifying labels, then those records will have little value.

1.3.3   **Standards for the creation, management and preparation of the archive must be understood and agreed at the beginning of any project**. Archiving is not something that takes place only at the end of a project. Lines of communication are vital in any project, and especially in the archiving process. The standards that are to be followed must be understood from the beginning, and regular communication between all participants in the process, as well as with the intended archive repository, will ensure that the archive meets all requirements. It must be understood that an archive repository can return a project archive if it fails to meet agreed standards.

1.3.4   **Ensuring the security and stability of the archive is a continuous process and a universal responsibility.** All archaeologists must recognise that they must manage archive material, eg record sheets, drawings, digital records, to preserve the content and protect from damage and loss. This is as relevant on site as it is in the laboratory or museum.

1.3.5   **A project has not been completed until the archive has been transferred successfully and is fully accessible for consultation.** It is in the interests of all parties to facilitate the transfer of completed archives to recognised repositories as quickly as possible. It may therefore be appropriate for an archive to be deposited before the project has been fully published. In such instances a copy of the publication must subsequently be added.

1.4   The Archaeological Archive

An archaeological archive consists of all material identified as suitable for curation, and may be divided into two main elements.

- **The documentary archive** comprises all records made during an archaeological project, including those in hard copy and digital form. This includes written records, drawings and photographs (including negatives, prints, transparencies and x-radiographs), reports, publication drafts, published work, and publication drawings and photographs. Digital material comprises all born-digital material, including text, data, drawings, 3D models, photographs and video, as well as files generated from digitised material, such as data entered from paper pro-forma and scanned images or text.
- **The material archive** comprises all objects (artefacts, building materials or environmental remains) and associated samples (of contextual materials or objects).

2 ARCHAEOLOGICAL PROCESSES

An archaeological project can take many forms. A weekend field-walking programme, diving on a wreck site, a remote sensing survey, a watching brief, a large excavation; all produce archive material, and it is the responsibility of project personnel to ensure that this is kept well-ordered and secure at all times.

This section considers the procedure of an archaeological project, identifies the personnel involved, and indicates where this document can inform those processes. It is not possible here to describe every type of archaeological project, but in general the same sequence of events will be followed and similar personnel will be involved. This section should therefore be relevant, at least in part, to all project personnel, and it is intended to show here how archive creation is a fundamental element at every stage of the archaeological process. The aim is to provide a framework, through the life of a project, for the use of this document and the application of appropriate standards. Appendix I 'Archive procedures and archaeological project management', and Appendix II 'Individual responsibilities', set out in more detail how particular personnel and actions relate to the creation and management of the archive. The following sections provide definitions for project personnel, activities and tasks that are couched in neutral terms that it is hoped can be applied to any type of project.

2.1 Personnel

- **Project executive**
  For a development-related project this would be the planning archaeologist, who identifies the scope of the project and monitors on behalf of the planning authority.
  In other projects this may be the same person as the project manager, or project leader, who oversees the whole enterprise from project design to dissemination.
- **Consultant**
  Someone mediating on behalf of the client in a contracted project.

- **Project team**
  This may be a commercial archaeological organisation, group of volunteers, specialist surveyors, divers, etc. It may include all or any of the following
  - project manager
  - on-site data-gatherers (eg surveyors, excavators)
  - finds staff
  - specialist analysts (eg conservators, finds specialists)
  - illustrators
  - editors
  - archive manager.
- **The archive curator (curator)**
  Manager of the archive repository that will receive the project archive for long-term storage.

2.2 Activities

An archaeological archive is created, established and managed throughout the life of a project and beyond. One aim must be to make the final archive a resource that can be revisited, reinterpreted and republished.

A project can be separated into four stages, in each of which certain activities affect the quality, usefulness and longevity of the archive.

Start-up
- project proposal, brief or specification.

Initiation
- detailed project design.

Execution
- data-gathering through the compilation of records
  (written, drawn, photographic, digital) and the collection of objects and samples
- assessment of results from data-gathering
- analysis and interpretation
- report-writing and publication
- preparation of records, data, objects and samples for archive transfer
- deposition.

Curation
- managing the archive to ensure preservation and access.

Specific project activities will usually be described in project designs, manuals and standards documents which should always be used and consulted

- a project brief might stipulate application of certain methods of record creation, thus influencing the format of the archive
- a field manual could influence record creation, eg by explaining the use of context record sheets, aspects of a context that are to be recorded (eg dimensions, stratigraphic relationships, deposit description) and the required scales for plans and section drawings
- a finds manual may, for example, describe techniques of cleaning and marking, set out the terminology applicable in the recording of material and object types, and also explain how finds record sheets are compiled
- a museum deposition standard might, for example, 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

- there are national and international standards for the management of various archive elements, eg long-term preservation of documents and objects; digital archives
- national standards also exist for individual disciplines, eg recording and publication of prehistoric, Roman and medieval pottery assemblages.

The Guide should be used as a supplement to all those documents, informing the creation of local technical manuals or archive deposition standards, and ensuring that all aspects of the archaeological process are carried out with the future of the archive in mind. National and international standards must be recognised and used in association with this document, and by project personnel.

2.2.1 **This Guide, if it is to be applied successfully, must be referred to in pre-project documentation, including specifications, schedules of works and contracts. Reference must also be made to any other more detailed, specific or complementary manuals or standards. It is the responsibility of all monitoring agents, whether acting on behalf of the planning authority, the client, the project team or the archive repository, to apply comprehensive standards for archive management, as outlined below, at the beginning of a project. Monitoring agents must also ensure that standards are followed, and that the ultimate quality of the archive is not compromised.**

2.3 Tasks

The following tasks relate to the activities outlined above. Some are relevant to all types of project, others are more specific.

2.3.1 START-UP

1. The *Project Executive* produces a project proposal that
   a. refers to the standards to which the project must adhere, including this Guide
   b. requires identification of a repository for every element of the project archive
   c. outlines requirements for transfer of title and copyright.

2.3.2 INITIATION

1. The *Project Team* produces a project design that
   a. refers to standards that will be followed, including in-house technical manuals etc
   b. demonstrates commitment to maintaining the integrity and security of archive material during the course of the project
   c. identifies appropriate external specialists and outlines the standards to which they will be working
   d. identifies appropriate archive repositories
   e. states how transfer of title and copyright will be achieved.
2. The *Project Executive* monitors the project design against the brief and agrees the project design.
3. The *Consultant* ensures their client comprehends the project proposal, the project design and the requirement to produce a stable, ordered accessible archive.
4. The *Curator* makes available local standards for the submission of an archaeological archive. It is recommended that they refer to this document.

2.3.3   EXECUTION

1. The *Project Executive* monitors the project to ensure that standards are being met and certifies completion.
2. The *Project Team* ensures that standards are maintained by
    a. establishing systems for managing documents, drawings, film, photographs, digital material, finds and samples to protect from loss or damage, and to make them accessible
    b. establishing systems for collecting and managing finds and other materials, including selection, sorting, cleaning, marking, recording and packing
    c. using appropriate materials
    d. applying consistent terminology when making records
    e. documenting analytical and interpretative activities to ensure that all procedures and terminologies can be clearly understood
    f. arranging for creation of security copies of documents, drawings and digital material as appropriate
    g. preserving draft versions of reports for inclusion in the archive as appropriate
    h. consulting representatives of the archive repository as necessary.
3. The *Project Team* compiles the project archive for transfer by
    a. marking archive storage materials appropriately
    b. packing archive material appropriately
    c. ensuring archive components are indexed
    d. creating a contents list.
4. The *Project Team* arranges transfer of title and copyright.
5. The *Project Team* arranges for the deposition of security copies of the archive as appropriate.
6. The *Consultant* maintains a balance between the requirements of their client and the aims of the project, ensuring that the quality of the archive is not compromised.
7. The *Curator* monitors the project as appropriate, ensuring that the condition and security of archive material is maintained.
8. The *Curator* advises on retention and disposal strategies as necessary.
9. The *Curator* receives the archive and finalises transfer of title and copyright.

2.3.4   CURATION

1. The *Curator* ensures correct standards of storage and care and makes the archive available for use.

3 STANDARDS FOR ARCHAEOLOGICAL ARCHIVES

3.1 Structure

3.1.1 This document is structured in line with the organisation of an archive, so documentary, digital and material elements are considered separately. This approach has been taken because although not all projects produce finds or environmental materials, those that do invariably produce a documentary archive, and it would be repetitive to try to organise this document in line with different types of project. Links are made throughout to the processes that inform archaeological projects, as shown above, including monitoring of a project and the receiving and care of the archive.

3.1.2 The documentary archive includes documents and digital material, although each requires different standards in creation and care. Digital material is therefore presented in a separate sub-section of the documentary archive.

3.1.3 If one purpose of a project is to produce a stable, ordered, accessible archive, then that aim must be recognised at the outset. Consistent use of this Guide at all stages of a project will facilitate recognition of this aim, and it is intended that it will increase people's awareness of their responsibilities towards the archive.

3.1.4 The bibliography lists relevant, detailed standards that should also be consulted and understood.

3.2 The Documentary Archive

3.2.1 COMPOSITION

The documentary archive consists of
- written material eg correspondence, contracts, specifications, notes, records, indexes, catalogues, reports

- drawings; printed, or in pencil or ink
- photographs; eg negatives, contact prints, prints, transparencies, x-radiographs
- digital material.

3.2.2 PAPER

3.2.2.1 Summary of Standards
1. All paper-based material must at all times be stored in conditions that minimise the risks of damage, deterioration, loss or theft.
2. Permanent or high quality paper/card and writing materials must be used.
3. All documents must be marked with the project identifier (eg site code) and/or the museum accession number.
4. All types of record must use a consistent terminology and format.
5. Use non-metal fastenings, and packaging and binding materials that ensure the longevity of documents, especially when preparing the archive for long-term deposition.
6. Copies of reports and appropriate drafts, with associated illustrative material, must be submitted for inclusion with the archive.

3.2.2.2 Planning
1. Correspondence, contracts, project proposals, project designs, reports and similar documents will normally have been created on, and printed from, a computer. It is difficult to set standards relating to this process, although it should be noted that printer paper and inks are not recognised as stable. Although it is desirable that such documents are submitted in hard copy, they also form part of the digital archive and can be curated as such. Any documents vital to the functioning of the archive as a re-usable resource, and submitted in hard copy, must be printed or copied in a way that offers longevity.
2. The agency involved in the execution phase must demonstrate, to the satisfaction of monitoring agents, that they will work to procedures that ensure the production of a consistent record. This includes use of field manuals that make proper reference to the format of record sheets, plans, etc and the terminology to be applied in recording.
3. It is recommended that project proposals, project designs etc refer to this document as an accepted approach for archive delivery.
4. Intellectual property rights and copyright to all elements of the documentary archive must, if possible, be established at the beginning of a project.

3.2.2.3 Data-Gathering, Analysis, Report-Writing
1. It is advisable that all primary records are made on paper of recognised archival quality, of neutral or mildly alkaline pH, and in media, either printed or hand-written, that are equally long lived. It is recognised, however, that this cannot always be achieved. Always use high quality paper for records intended for archiving. Photocopies have a short life-span and must not be used. Pro-forma should be printed, not photocopied, and completed using black ballpoint pen or permanent black ink. Recycled paper also has a short lifespan and is not recognised as permanent for archive purposes.
2. All project records must be produced to a consistent format. It is recommended that pro-forma are used for recording primary data. There are no national standards for the lay-out of record sheets, nor in every case for the information they require, but the following must apply
   a. all record sheets must include the site identifier and/or similar location information

b. reference to national standards, particularly in the specialist recording of finds information. Use these to ensure that the recognised level of information is recorded, eg in designing record sheets or databases

c. consistent terminology must be used throughout, so that the same term is applied to the same thing every time (eg do not record some metal objects as copper alloy and others as bronze). Include a definition of terms with the archive if necessary. In some instances local terminologies have been developed, and their use required, eg pottery type series

d. records must be written legibly and using clear language/terminology

e. the date of completion of a record, and author, must be included.

3. All archive material in the temporary care of project teams or specialists must be kept in the best conditions possible, ensuring protection against fading, damage, damp and loss. It is highly desirable that archives are retained in temporary storage for as short a time as possible.

4. A security copy of written records may be required in the project proposal or by the archive repository. This may include microfilming or digitisation. Ensure that these requirements are understood at the outset of a project.

3.2.2.4 Preparation for Archive Transfer

1. All elements of the paper archive must be classified to identify their function. This is especially important for pro-forma, which must have an identifier and/or title (eg context record sheet).

2. There must be indexes for all parts of the paper archive. Some of these are compiled on pro-forma during data collection, eg running lists of context numbers, but others, such as lists of correspondence included in the archive, will be completed as part of the archive compilation process.

3. The paper archive must be accompanied by an overall contents list.

4. At all stages of management of the written archive, the use of non-metal fastenings, such as plastic paperclips is recommended. Do not use metal fastenings or bindings such as staples and ring-binders, or adhesive tape, when preparing the paper archive for long term storage. Documents of the same type should be bundled together, using the following criteria

a. fasten paper using plastic treasury tags or plastic paperclips

b. use a separate title page to mark groups of documents

c. do not use self-adhesive labels (or such things as stick-on notes)

d. organise documents of the same type in a logical order (eg record sheets in context order; correspondence in chronological order)

e. do not fold documents

f. store documents in acid-free, dust-proof, cardboard boxes, do not store documents vertically.

3.2.2.5 Curation

1. The paper archive must be stored in darkness.

2. The ideal temperature is a fixed point in the range 13°C to 19°C.

3. The ideal relative humidity is a fixed point in the range 45% to 60%.

3.2.3 DRAWINGS

3.2.3.1 Summary of Standards

1. All drawings must, at all times, be stored in conditions that minimise risks of damage, deterioration, loss or theft.

2. Use polyester based film for drawings.

3. All drawings must be marked with the project identifier (eg site code) and/or museum accession number.
4. All drawings must identify the subject, and include a scale and, where appropriate, a north sign or other means of location/orientation.
5. Wherever possible, all original drawings must be included in the archive.
6. Where possible, store drawings flat.

3.2.3.2 Data-Gathering, Analysis, Report-Writing

1. Use the most stable drawing film available, or low-acid card or low-acid paper. Polyester-based film is recommended because it lasts longer than plastic film.
2. Original drawings on film must be made with a hard pencil, at least 4H.
3. Do not ink over original pencil drawings.
4. Use regular sizes of paper or film for drawings, no smaller than A4 and preferably no larger than A1.
5. Mark all drawing sheets with the project identifier, drawing number, title, scale, date of drawing, name of the person who drew it and, where appropriate, north sign and site grid and/or appropriate location information.
6. Include a key to all conventions used for particular elements, colours etc.
7. Do not use adhesive lettering on original drawings that convey site information as this will eventually fall away.
8. Publication drawings can be produced to less exacting standards, but they must always be properly marked and produced with stable materials.
9. A security copy of written records may be required in the project proposal or by the archive repository. This may include microfilming or digitisation. Ensure that these requirements are understood at the outset of a project.

3.2.3.3 Preparation for Archive Transfer

1. The archive must include an index of all drawings, some of which are compiled during data collection, in the form of running lists of drawing numbers which must be maintained during analysis and in preparation of drawings for publication.
2. Pack drawings so they can be stored flat. Acid-free card folders are preferable for separating groups of drawings. Polyester covers can be used, but use tissue paper to separate the uppermost drawing from the polyester.
3. Do not use adhesive or tape of any kind.

3.2.3.4 Curation

1. Drawings should ideally be stored flat, in the dark, in dust-free containers.
2. The ideal temperature is a fixed point in the range 5°C to 10°C.
3. The ideal relative humidity is a fixed point in the range 45% to 60%.

3.2.4 PHOTOGRAPHS

3.2.4.1 Summary of Standards

1. Photographs must, at all times, be stored in conditions that minimise the risks of damage, deterioration, loss or theft.
2. Media that can be kept in perpetuity, in their original form, must be used for record photographs.
3. All photographs must be marked, or made identifiable with, the project identifier (eg site code) and/or museum accession number.
4. All record photographs must identify the subject, and include a scale and, where appropriate, a north sign or other means of location/orientation.
5. Photographs must be packed using appropriate materials.

3.2.4.2 Data-Gathering, Analysis, Report-Writing

1. Digital photographs are increasingly used for record photography but must only be used as a substitute for photographic film if there is a clearly established procedure for long-term preservation of the digital archive, and if proper measures for the collection and security of digital photographs are followed throughout the life of a project.

2. Black and white film processed to British Standard 5699 is the archival ideal, as it is recognised as suitable for long-term storage, but colour film is now an acceptable alternative. Use processing companies that develop film to high specifications. Commercial, automatic processing techniques do not meet archival standards and must not be used.

3. Transparencies should be duplicated to allow the use of one set, while the other can be stored. This is most easily achieved by taking two original photographs rather than making copies later.

4. Where appropriate, record photographs must include project and object identifiers, and a scale and direction of view indicator.

5. Used films should be processed as soon as possible to counter the effects of film deterioration.

6. Video is not recognised as a record medium of archival quality and must not be used as a primary record, although it can be used as an enhancement to recorded information. If submitted with an archive, it is advisable to transfer it to a DVD, where it will be incorporated into the digital archive and curated as such.

3.2.4.3 Preparation for Archive Transfer

1. Photographs should be classified by type of media, with negatives, prints, transparencies, x-radiographs and others categorised separately, as some media have differing storage requirements.

2. All photographs, or their holders, must be marked with the project identifier, object identifier (if appropriate), film number and frame number
   a. mark negative holders, not negatives
   b. mark prints on the back using a soft pencil, not ink
   c. mark transparency mounts, not the film.

3. The archive must include an index of all photographs, some compiled during data collection, in the form of running lists of frame numbers. These lists must be maintained at all times.

4. A photographic index should record the category of film (or create separate indexes for each category), film number, frame number, title and/or subject, the date the picture was taken and who took it.

5. Silversafe-type paper envelopes are ideal storage media for negatives and x-radiographs, although the careful use of polyester packets or hangers may be more practicable.

6. Store prints in acid-free paper enclosures or polyester sleeves, and/or in archival print boxes.

7. Pack transparencies into polyester packets or hangers if they are to be stored in cabinets. Some repositories may accept transparencies stored in archival boxes.

3.2.4.4 Curation

1. Prints should ideally be stored in archival boxes or dust-proof cabinets, at a fixed point within a temperature range of 13°C to 19°C, and a relative humidity of 40% to 60%.

2. Negatives and transparencies should be stored in dust-proof cabinets, although archival boxes may also be appropriate.

3. Colour film should ideally be stored in a temperature range of 0°C to 2°C, in accordance with BS Standard 5454:2000. This is likely to be impracticable, not least because it is difficult to access them for consultation, and it creates acclimatisation problems. The recommended conditions are a fixed point in a temperature range of 5°C to 10°C, at a fixed point of relative humidity in the range 30% to 40%. This temperature range will still necessitate a period of acclimatisation prior to handling.

4. Black and white film should ideally be stored at a fixed point of temperature no higher than 18°C, and preferably much cooler. The recommendation here is a fixed point in the range 15°C to 19°C, and a relative humidity between 30% and 40%. There may still be the need to acclimatise materials prior to handling if conditions of storage vary greatly from those of consultation.

3.2.5   REPORTS AND PUBLICATIONS

1. When first submitted, the archive must include a short summary report explaining the background to the project, when it was carried out, by whom, where the project was located, and the results of the work.

2. Copies of all published material relevant to the project must be submitted with the archive, or sent to the archive repository if the archive has been deposited before a publication appeared.

3. Restrictions on public access to sensitive material must be identified and discussed prior to archive deposition.

4. It is often informative to keep copies of draft reports or publications in the archive, and the archive repository should be consulted to determine whether this is required and which drafts are appropriate. The first draft is often the most relevant. Version control is as relevant here as it is with digital records, and it must be possible to identify each different draft. Do not submit unannotated duplicates with the archive.

5. Reports and publication text are normally written directly onto a computer, thus becoming part of the digital documentary archive. File naming protocols and version control must be exercised to ensure that different drafts can be identified, see Section 3.2.6.

6. All original drawings and photographs prepared for a report or publication must be submitted with the archive, refer to Sections 3.2.3 and 3.2.4.

7. Copies of all born-digital material created for a report or publication must be submitted with the archive, refer to Section 3.2.6.

3.2.6   DIGITAL MATERIAL

The digital archive consists entirely of digital data; example file types are CAD files, databases, digital aerial photograph interpretations, excavation archives, geophysical and other survey data, GIS files, images, satellite imagery, spreadsheets, text files and 3-D data. All born digital material should be included in the digital archive.

Transfer and short-term storage media include CD-ROMs, data-sticks or flash drives, DVDs, floppy discs, hard discs, and magnetic tape, which are not suitable for the long-term preservation of the digital archive and should be used only to submit digital material for permanent archiving. Long-term storage must be on permanent servers that are regularly backed up.

3.2.6.1   Summary of Standards
1. All digital storage media must, at all times, be stored in conditions that minimise the risks of damage, deterioration, loss or theft.

2. Creation of the digital archive must be fully documented, with information such as software used, operating systems, types of hardware, dates, personnel, field descriptions, and the meanings of any codes.
3. Data must be created according to consistent, accepted standards of terminology, content, format and file naming.
4. Digital archives should conform to existing standards and guidelines on how data should be structured, preserved and accessed.
5. Digital files must be regularly backed up throughout the course of a project and in archive.
6. All media and files must be free of viruses before archive deposition.
7. A digital archive index must be compiled and deposited in digital form with the digital archive.
8. Copies of digital archives should be deposited in a secure digital archiving facility where they can be curated properly, maintained for the future and accessed easily.

3.2.6.2 Planning

1. Project specifications and the project repository archive deposition standards must establish measures for managing the creation of digital data.
2. The archive repository must specify that copies of all digital material that can be subjected to further analysis, or used for presentation, are submitted with the archive.
3. The archive repository must specify the types of media to be used for submitting digital material.
4. The archive repository must specify the preferred file type for specific types of digital data.
5. The project design must include a summary of the types of digital data that will be created or acquired during the project, and media on which they will be stored.
6. The project design must specify file formats, as recommended by an approved digital archive repository, that will be used for both the secure archiving and the dissemination of data.
7. Arrangements must be made to deposit either copies of the digital archive, or a catalogue, with a suitable specialist digital archive repository, which in the UK is often the Archaeology Data Service (http://ads.ahds.ac.uk/). The digital repository must be identified at the outset of a project.
8. A clear copyright agreement should be established at the beginning of a project, which will enable the repository to make the digital archive available for future study and/or publication.

3.2.6.3 Data-Gathering, Analysis, Report-Writing

1. Data collection must be in accordance with defined internal or national standards for content and format, including use of consistent field names, terminologies etc.
2. Digital files should be named to reflect their content, preferably incorporating the project identifier, and different versions should be numbered. Consistent file naming strategies should be used, and it is good practice not to use spaces, or non-standard characters such as commas, full stops etc.
   For advice go to http://ads.ahds.ac.uk/project/userinfo/deposit.html#filenaming.
3. Version control must be maintained, so that it is possible to identify the most up to date version of every file.
4. The digital archive creation process must be documented, so that its development throughout the course of the project can be understood.
5. All data must be routinely backed up, because during a project digital data may be created on a variety of separate computer hard drives or on a network, and data may be acquired from a variety of other formats.

6. Back-up and restore procedures must be tested regularly.
7. The analysis phase of a project is likely to result in a wide variety of databases, spreadsheets, CAD files etc, all of which must be submitted as part of the digital archive.
8. Different versions of born digital reports should be made available for inclusion in the digital archive.

3.2.6.4 Preparation for Archive Transfer

1. A digital archive index, in digital form, must be compiled and deposited with the archive.
2. Digital files must be ordered into a comprehensible directory structure, with folders named to conventions that aid retrieval.
3. A digital archive is usually copied onto temporary storage media (eg discs) for transfer to an archaeological archive repository. Use high quality transfer media, or any other solution likely to reduce risk of data loss.
4. Pack transfer media to protect from dust and damage.
5. Transfer media must be marked or labelled clearly and permanently in a way that identifies the project and the contents of each disc, tape, etc and relates to the digital archive index. Adhesive labels must not be stuck directly onto CDs and DVDs, which must be marked with non-acidic, specialised marker pens.
6. Copies of standards or conventions used in creating the content of digital data files, and in ordering the archive, must be kept with the digital archive.
7. Transfer media must be checked for viruses and be clean before final packing.
8. Depositors of a digital archive are advised to retain their own copy, at least until it is certain that the archive has successfully been transferred to an approved digital archive repository.

3.2.6.5 Curation

1. Archaeological archive repositories such as museums that are not specialist digital media archives should ensure that their digital archives are also stored in recognised trusted digital repositories such as ADS. Trusted repositories may soon receive a form of accreditation, in accordance with the emerging RLG/NARA standard (Research Libraries Group/National Archives and Research Administration); see www.archives.gov.
2. It is best practice to transfer the digital archive from transfer media (eg discs) to networked servers that are protected and regularly backed up. If this is not within the capabilities of the archaeological archive repository, then it is even more important to copy the digital archive to a trusted digital repository, where this procedure will be carried out.
3. If digital storage media are retained, store them in fireproof and, where appropriate anti-magnetic, facilities, and keep back-up versions at a separate location.
4. Repositories must have a data management system that ensures regular back-up and records how files are stored and labelled.
5. The integrity of the digital archive must be monitored, and backup and restore procedures tested regularly.

3.3 The Material Archive

3.3.1 SUMMARY OF STANDARDS

1. All finds must at all times be treated carefully and kept secure.
2. All finds must be cleaned as appropriate to ensure their long-term survival.

3. Finds must be recorded to a consistent format.
4. All metal objects retained with the archive must be recorded by x-radiograph (with some exceptions, including gold or lead).
5. Finds recording must classify objects to consistent, accepted terminologies of material and object types.
6. All finds intended for deposition with the archive must be marked or labelled, as appropriate, with the project and context identifiers and, where relevant, the individual identifier (eg small-find number).
7. All finds intended for deposition with the archive must be packed in appropriate materials to ensure risk-free, long-term storage.
8. The material archive must be stored in conditions conducive to the long-term survival of each object.

3.3.2 COMPOSITION

The material, or finds, archive is comprised of four elements

- bulk finds; finds that often occur in quantity, and do not require special treatment or closely controlled storage conditions, eg animal bone, ceramic building material, pottery, shell, slag, stone
- sensitive finds; also known as small-finds or registered finds. These usually require controlled storage conditions, and/or more detailed recording procedures, in situ or after collection; examples include ancient glass, leather, metalwork, textile, worked bone, worked flint and wood
- human remains; these require specific treatment in accordance with national standards and legislation
- materials recovered from scientific sampling; these are often the product of laboratory analysis, eg environmental remains, thin-sections, microfossil slides.

The following standards apply to all elements of the material archive. Specific standards are set out in subsequent sections dealing with particular types of finds.

3.3.3 PLANNING

1. Agencies involved in the collection phase must demonstrate, to the satisfaction of monitoring agents, that they will work to procedures that ensure the production of a consistent record. This includes the use of finds processing manuals that establish the format of record sheets, cleaning, marking etc and the terminology to be applied in classification. Such manuals should also make reference to relevant national standards.
2. Collection, selection and retention policies must be agreed at the outset of a project, but with the understanding that these may be adjusted as the site is better understood (see Section 4). Those involved in such decisions would normally be personnel monitoring the project, site and finds staff involved in collection and analysis, and a representative of the archive repository.
3. Specialists, including conservators, must be identified at the beginning of a project, and consulted as appropriate during the project.

3.3.4 DATA-GATHERING

This includes the recovery of finds, initial cleaning, classification and sorting, primary recording and initial packing.

1. Recovery must be undertaken to current standards of care, avoiding damage, cross-contamination of contexts, and loss or theft.
2. Recovery should be in accordance with collection and retention strategies agreed and documented at the outset of the project.
3. Finds must be cleaned to recognised standards, using methods described in nationally recognised documents, (eg *First Aid for Finds*). Bulk finds especially may be subject to over-cleaning, leading to the removal of residues etc, so it may be appropriate to assess cleaning requirements at the outset.
4. Finds intended for retention with the archive must be marked with site and/or context identifiers, as appropriate. Where the size or stability of individual objects precludes this, use tie-on, rot-proof labels or store them in marked containers that contain rot-proof labels carrying relevant information.
5. Pack finds to ensure that finds from different contexts are kept together, and to protect against loss or damage
   a. bulk finds of the same material type, from the same context, may be packed together in stable paper or polythene bags of suitable weight
   b. mark all bags on the outside with site and context identifiers and the material type, and include a polyethylene label marked with the same information. It may not be possible to mark some polythene bags, in which case they must contain two marked polyethylene labels
   c. use permanent ink on bags and labels
   d. bulk finds may be boxed together, but it is inadvisable to place heavy and delicate objects together in the same box
   e. sensitive finds must be packed individually in bags or boxes marked with the site identifier, context number and/or find number, and if appropriate the repository accession number
   f. sensitive finds must be supported, where appropriate, on inert plastic foam or acid-free tissue paper, designed to prevent movement within the box. It is not advisable to wrap objects in tissue because the act of unwrapping could cause damage
   g. fragile finds, or those that are not marked, or have a tie-on label, must be packed to be visible without removal from their container.
6. Specimen finds, eg those used for analysis, must be packed in containers marked with site and context identifiers. A note detailing the removal of the specimen must be attached to or inserted into the original container from which the specimen was extracted.
7. Human remains must be treated with respect, in accordance with national guidelines. Human skeletal remains must be marked. Apply protocols for the storage, management and examination of human remains that recognise their sensitivity.
8. Conservation work, including cleaning sensitive finds, must be carried out by ICON-accredited conservators.
9. All finds must be sorted and classified according to accepted systems of terminology, of both material types and object types.
10. Primary recording must facilitate an understanding of the character and extent of the assemblage. Initial finds records must identify material and object types, and quantify each type as appropriate, preferably by two measures, normally weight and fragment count.

11. Most metal objects must be recorded by x-radiography. Exceptions include
    a. lead alloys or copper alloys with a high lead content
    b. objects too thick to be x-rayed effectively
    c. objects, such as modern finds, for which x-rays will add no useful information
    d. finds of no archaeological significance, eg unstratified
    e. every example of a large homogenous assemblage, eg nails.
12. All finds must, at all times, be stored in conditions that minimise the risks of damage, deterioration, loss or theft.
13. Transfer of finds from one location to another must be undertaken with due care and attention, and must be fully documented.

3.3.5   ANALYSIS AND REPORT-WRITING

The analysis and interpretation phases relevant to the material archive include specialist study, detailed conservation and scientific analysis.

1. Specialists, conservators, and scientific analysts must comply with current standards of object care, minimising the risk of damage, loss and theft.
2. Specialists must follow accepted standards for recording finds, both in terms of what is recorded and terminology.
3. Type series created during analysis must be submitted as part of the archive, accompanied by appropriate documentation.
4. Conservation work, including cleaning sensitive finds, must be carried out by qualified conservators.
5. Scientific analysis must be carried out by properly qualified practitioners.
6. When transporting finds, eg to or from specialists, finds must be packed appropriately and carried by project staff or trustworthy carriers.
7. All records and reports relating to the specialist study of finds, conservation and scientific analysis, must be submitted with the archive.
8. Records and reports created with a computer will form part of the documentary digital archive. Refer to 3.2.6.

3.3.6   PREPARATION FOR ARCHIVE TRANSFER

1. Finds must be ordered according to their material type, packing and storage requirements. Bulk finds, sensitive finds, human remains and samples should be kept separate.
2. The material archive must be boxed in standard sized boxes as specified by the archive repository.

3.3.7   CURATION

1. All finds must be stored in the dark.
2. Finds must be stored in conditions that are not susceptible to wide fluctuations in temperature or relative humidity (RH)
   a. bulk finds remain stable at low and high temperatures, and low and high relative humidity, but they must not be subjected to variations in either. Ideal storage is at low temperatures (around 15°C) and 35% to 70% RH
   b. metals must be stored in a range of 15° to 24°C, and below 35% RH
   c. organic finds (leather, textile, wood, worked bone) must be dried out before deposition with the archive and stored at 18° to 22°C and 45% to 55% RH.

3.3.8   HUMAN REMAINS

1. Projects excavating human remains that require a licence or directions from the Department of Constitutional Affairs may be set a time limit for analysis and may also be required to rebury. This must be understood by all parties involved with the project archive.
2. Human skeletal remains should be marked with site and context/skeleton identifiers in indelible ink.
3. Pack human remains so that it is possible to distinguish different individuals.
4. Excavated skeletal remains may be deposited with a museum as long as existing recognised standards for their treatment have been met.
5. Skeletal remains must be stored in stable conditions with 35% to 70% RH.
6. Treatment of soft tissue remains should be the subject of specialist advice.
7. Human remains must, at all times, be stored in secure stores that are accessible only to authorised staff. It is desirable for archive repositories to have dedicated storage areas.
8. Museums with collections of human remains should develop a strategy for their care.

3.3.9   SCIENTIFIC SAMPLES

A wide variety of samples may be taken during the course of a project, and these may be subdivided into two groups

- samples taken on site for processing during the collection phase, including samples of structures or deposits for dating or environmental analysis.
- samples taken off-site to enhance further analysis, including samples of individual objects taken for a variety of purposes.

3.3.9.1 Samples taken on site

1. Project planning must establish sampling strategies, recognising the need for subsequent adjustment as appropriate.
2. Some samples will be taken for analysis rather than retention with the archive, so there may be no requirement for preparing them for permanent storage. Other techniques may result in accumulation of large quantities of small fragments, which may themselves be sampled again in order to retain a representative quantity in the archive. An example of this might be industrial waste, such as hammer-scale, where the scientific value of full retention may not be justifiable. In such cases on-site sampling, or sampling after post-excavation analysis, may be appropriate, but should only occur following consultation with the relevant specialist.
3. At the outset the requirements of the archive repository must be established. Some repositories are happy, where appropriate, for individual laboratories to retain any samples they have produced and/or analysed, while others specify which samples must be deposited with the archive. The aim must be to ensure long-term preservation and accessibility of samples.
4. The sampling process must be fully documented, providing an understanding of how, why and in what conditions samples were recovered.
5. Each sample must be given a unique identifier, which must be marked on the object and/or on all associated labels.
6. Structures may be sampled to gather evidence of types of building material (bricks, clay, mortar, stone, timber) and these representative objects can be archived in the same way as the rest of the material archive.

7. Samples taken for dating purposes may be destroyed during analysis, leaving no archival material. Dendrochronological cores are one exception, and some dating agencies will ask to retain samples for reference. There is no reason why repositories should require chronological samples to be submitted with the archive, but all data derived from them must be deposited.

8. Environmental samples are usually broken down for sorting of the objects they contain (mainly plant and animal remains).

9. Artefacts recovered from environmental samples must be marked (on the object or with labels) with the site, context and sample identifiers, and packed and stored as appropriate for the type of material and/or object.

10. Some animal and plant remains (insects, seeds etc) are extracted during flotation and cannot be dried out. It is not desirable for any wet material to be submitted with the archive, but if it is not be possible or desirable to dry it out, wet material must be stored in air-tight containers of 70% IMS, preferably in the dark and refrigerated.

11. Repositories must have a system for monitoring the condition of wet samples.

12. Finds from the sorting of dry residues must be stored in bags marked with site, context and sample identifiers, containing a polyethylene label with the same information.

13. Finds from the sorting of dry residues must be stored in conditions appropriate for the material type.

14. Soil analysis may result in preparation of microscope slides (eg thin-sections). There is potential conflict here, as some laboratories will want to keep these for reference, while some repositories will ask for them to be included in the archive. An ideal solution is for a duplicate set of slides to be prepared for archive. If this is not possible then the preference must be for the material to be deposited wherever it is most likely to survive in perpetuity.

15. Column samples may be stored for some time in drainpipes and kept dark and cool, but this does not guarantee permanent preservation, and analysis must be undertaken as soon as possible.

16. Some on-site sampling (eg C-14), rarely results in any material archive for deposition, but all associated data must be copied into the archive.

17. All archived samples must be boxed separately from bulk and sensitive material and stored in appropriate environmental conditions, dependent upon the material type.

3.3.9.2 Sampling in analysis

1. Artefacts may be sampled for a variety of purposes, and using various techniques, many of which are destructive, and no material will survive for archiving. The sampling and analysis process must be fully documented, however, and all associated records must be submitted with the archive.

2. Where samples can be archived, it is possible that some specialists will want to keep these for reference, while some repositories will ask for them to be included in the archive. This is especially true of techniques that result in microscope slides, eg thin-sectioning, pollen and diatom analysis. An ideal solution is for a duplicate set of slides or samples to be prepared for archive. If this is not possible then the preference must be for the material to be deposited wherever it is most likely to survive in perpetuity and be easily accessible for further study; in general that should be the archive repository.

3. Environmental materials preserved by anoxic conditions (eg insect remains or macroscopic plant remains) must be stored in 70% IMS. A drop of glycerol may be added to prevent samples drying out if the IMS evaporates.

4. Metallurgical samples are worthy of retention and have great potential for further study. They should be cleaned and de-greased. Copper-alloy and silver should be

coated with an acrylic resin with a corrosion inhibitor, such as *Incralac*. Iron should be coated with an acrylic resin with no inhibitor, such as *Paraloid B72*. Samples should be packed securely, protecting surfaces, and stored dry (below 15% RH for iron, less than 35% RH for other metals).

5. Microscope slides must be packed to prevent damage, in boxes designed for the purpose.

6. All samples must be permanently marked or labelled, as appropriate, showing the project identifier, sample number, nature of the sample and other relevant information.

7. All collections of retained samples must be fully documented, incorporating a description of collection methods and conditions, and cross-referencing of each sample with sample labels, the original artefact, other relevant records such as databases, photographs or drawings, and publications.

4. SELECTION AND RETENTION OF FINDS

Few projects retain all finds from all archaeological deposits. Unstratified material, for instance, may have little archaeological significance, while some particular types of finds, such as fragmented slate roofing material, can be recorded on-site or in post-excavation and not retained in the final archive.

Deciding which finds are to be retained should not be the sole responsibility of the project team. The project executive and the archive curator should ensure that finds selection is carried out in accordance with the aims of the project and the requirements of the archive repository.

This is a project planning issue, and a selection strategy must be put in place at the outset, whereby there is a clear mechanism for deciding which finds are to be retained, and what should be done to those that are not.

This will usually involve the agreement of an on-site finds selection procedure, and an off-site process of assessment of the finds assemblage.

4.1 Principles

1. Project planning must consider finds selection.
   Strategies for selection must be agreed between all relevant parties, especially the project executive, the project team and the archive curator, and the fact that this has been agreed must be stated in project documentation.
2. The agreed procedure for selection must be fully described in the project design or associated documentation (eg archive repository guidelines).
3. Changes to the finds selection strategy must, where possible, be agreed by the project executive, the project team and the archive curator.
   It is recognised that a finds selection strategy agreed before finds retrieval has begun may need revision during the course of a project. Unexpected quantities of a particular find type, or unusual depositional circumstances, may instigate reassessment.

The mechanism for altering the finds selection strategy must be described in the project design.

4. The archive curator, with relevant members of the project team, should assess the finds assemblage after fieldwork and decide which finds are to be retained in the project archive.

    This process should be included in the initial selection strategy.

    The character of the finds assemblage and/or the site stratigraphy will inform the final selection process.

5. The selection process must be adequately resourced.

    Some finds may be recorded but not retained, and this process should be realistically costed in project estimates.

    It should be recognised that selection is undertaken by the project team, in accordance with agreed strategies, prior to transfer of the archive, and it is the responsibility of the project manager to ensure that there are sufficient resources within the project budget to complete that task.

6. The selection process must be completed before transfer of the project archive.

5   ARCHIVE TRANSFER, COPYRIGHT AND TITLE

Archive repositories should have ownership of any archive deposited with them, and ideally should also have copyright, sole or shared, over the documentary archive. This must be in line with existing legislation, such as the 'Copyright, Designs and Patent Act, 1988', 'Treasure Act 1996', 'Merchant Shipping Act 1995' and 'Burials Act 1857', and laws and regulations particular to different countries in the UK. Because of the legal complexities surrounding this issue, it is not possible to establish any universal standard, but general recommendations can be made. Specific or pro forma agreements should be the subject of legal advice.

5.1   Transfer of Documentary and Digital Archives in England and Wales

1. The Museums and Galleries Commission standards state that museums are required to 'acquire the right to research, study, display, publish and provide access to all the information and finds contained in the archive either immediately or after an agreed period' (MGC 1992).
2. The archive repository should obtain a written assignment of copyright from the copyright holders. This can be complicated as various elements of an archive may have different copyright holders, eg OS maps, and the depositor must assist in this task by providing clear documentation relating to the copyright holders of the individual elements of the archive. Ideally, there should be a mechanism to allow licensed use of all archived material.
3. If a copyright holder wishes to retain certain rights to the material, then the archive repository could agree an appropriate copyright licence.
4. If a copyright holder is unwilling to assign copyright, then they may grant a copyright licence to the archive repository, which the latter should obtain in writing.
5. An archive repository should seek to obtain rights in perpetuity, and fixed period licences should therefore be avoided.
6. The licence must also represent the interests of third parties, such as the NMR or ADS, which receive copies of the documentary or digital archive.

7. In Wales, guidance on the transfer of documentary and digital archives may be obtained from the Royal Commission on the Ancient and Historical Monuments of Wales, who maintain the National Monuments Record of Wales.

5.2 Transfer of Documentary and Digital Archives in Northern Ireland

1. All documentary and digital archives resulting from licensed excavations should be deposited with the Environment and Heritage Service of the Department of the Environment.
2. While the depositor would retain intellectual copyright to the archive, the Environment and Heritage Service will make it be accessible upon request to members of the public.
3. Documentary and digital archives from archaeological projects that have not required a licence may be offered to any appropriate repository, although this will usually be the Environment and Heritage Service. Any appropriate repository should ensure public access to the archives.

5.3 Transfer of Documentary and Digital Archives in Scotland

1. In Scotland all documentary and digital archives resulting from projects grant-aided or funded by Historic Scotland are submitted to the RCAHMS, as part of the contract signed between Historic Scotland and the contractor. Deposition in RCAHMS of documentary or digital archives from projects funded by developers or others is actively encouraged.
2. At the time of deposit, the museum in receipt of the material archive, or RCAHMS, will require clarification on the copyright and ownership of all aspects of the material, eg sub-contracted drawings.
3. The repository may request a written assignment of copyright from the various copyright holders, or may put in place a written license agreement.

5.4 Transfer of Title in England and Wales

1. At present landowners retain all rights of ownership to archaeological materials found on their land, with the exception of items classified as Treasure.
2. It is highly desirable that the landowner transfers title to all archaeological objects, other than treasure, to the appropriate archive repository. Archive repositories should have forms for this purpose, which will require the signature of the landowner and witnesses.
3. In order to facilitate transfer of title, it is important that the archive repository is identified at the planning stage of a project, and referred to in project briefs and specifications. This is the responsibility of the planning archaeologist, the archaeological contractor and representatives of the archive repository.
4. The archaeologist undertaking fieldwork is responsible for obtaining the written consent of the landowner to transfer ownership of the finds to the identified archive repository.
5. It is highly desirable that transfer of title forms be signed by the landowner at the planning stage of a project, although it is recognised that landowners may be reluctant to do this, and forms may therefore be signed when the archive is prepared for deposition.

5.5 Transfer of Title in Northern Ireland

1. In Northern Ireland all excavations are licensed by the Environment and Heritage Service of the Department of the Environment.
2. The Environment and Heritage Service issues their own transfer of title form to licensees, and they have a responsibility to attempt to secure the signature of the landowner. The form seeks to transfer title to excavated material to the Department of the Environment on the understanding that it would be offered to the Ulster Museum.
3. No licensing arrangement is in place for archaeological projects that produce a material archive, but are not excavations, such as field-walking. A suitable archive repository should be identified, and arrangements for transfer of title finalised, before the project commences.
4. The 'Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995' makes it a statutory duty of finders to report all archaeological objects to the Environment and Heritage Service, or to the Director of the Ulster Museum, or to the officer in charge of a police station, within fourteen days of discovery, unless the finds have been made in the course of a licensed excavation. Issues of title may then be resolved as appropriate.

5.6 Transfer of Title in Scotland

1. In Scotland all archaeological artefacts may be claimed as the property of the Crown. All such finds must be reported to the Scottish Archaeological Finds Allocation Panel.
2. Finds from projects funded by Historic Scotland must report to Historic Scotland, who will liaise with the Scottish Archaeological Finds Allocation Panel. These bodies determine which archive repository will have responsibility for, and assume ownership of, the material archive.
3. Further information may be found at www.treasuretrovescotland.co.uk.

5.7 Marine Wreck and Finds

1. The seabed in British waters is owned by the Crown, and all seabed finds must be reported to the Receiver of Wreck. This includes all wreck material, and stray finds or groups of finds. The Receiver of Wreck resolves issues of ownership and reward in accordance with The Merchant Shipping Act 1995, and decides how to dispose of any recovered finds.
2. If wreck is not claimed for ownership within one year of being reported to the Receiver of Wreck, then ownership is decided by the Receiver of Wreck, who is empowered to transfer title to a recognised repository.

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APPENDIX I   ARCHIVE PROCEDURES AND ARCHAEOLOGICAL PROJECT MANAGEMENT

The following charts follow a project through each stage towards delivery of the archive, identifying specific tasks and matching them to project personnel. It should be recognised that this is not a comprehensive exercise but it seeks to identify and address the most common issues that arise. Different types of project have not been dealt with separately because this is intended as a generic framework, and there will always be anomalies. If, during a project, the correct procedures are unclear, then the best action is to consult relevant personnel, especially the intended curators of the archive. Regular project monitoring procedures should be in place at the outset, and this should reduce the risk of confusion and mistakes.

	PROJECT PLANNING	Action	Archive Task	Personnel Responsible (re archive task)
1		Project brief sent out for tender A copy may be sent to archive curator	Preserve project brief for archive	Project manager
		Contractor submits project specification	Preserve project specification for archive	Project manager
		Establish methodologies and technical procedures, including those of independent specialists	Methodologies and technical procedures collected for preservation in archive	Project manager
		Identify appropriate archive repository/repositories	Archive deposition standards understood and agreed	Project manager
			Finds selection strategy agreed	Project executive Project manager Archive curator
			Transfer of title and copyright agreed	Project manager Archive curator
2		Project design or scheme of investigation written	Preservation of all relevant correspondence, documentation	Project manager
		Methodologies and technical procedures, including those of independent specialists, established	Preserve project design for archive	Project manager
		Appropriate archive repository/ repositories identified	Methodologies and technical procedures submitted for preservation in archive	Project manager
			Archive deposition standards understood and agreed	Project manager
			Transfer of title and copyright agreed	Project manager Archive curator

	DATA GATHERING	Action	Archive Task	Personnel Responsible (re archive task)
3	If you are creating a written, drawn or photographic record	Fill out pro-forma, make drawings and photographs	Record to a consistent, accepted standard	Project team
			Ensure appropriate materials are used	Project team
		Document record creation	Maintain indexes of drawings and photographs	Project team
		Ensure security of archive	Establish protective measures	Project manager
		Ensure longevity of archive	Create microfilm copy	Project team
4	If you are creating digital material	Collect data	Follow established standards for content and format	Project manager and staff
		Ensure preservation of data	Back up data using appropriate media	Project manager and staff
		Document data collection process	Establish data history record	Project manager and staff
		Initiate digital archive index	Use comprehensible file naming protocols and directory structures	Project manager and staff
		Ensure security of digital archive	Establish protective measures	Project manager
5	If you are collecting finds	Collect finds	Follow agreed selection strategy Consult with appropriate personnel before altering finds selection process	Project manager
		Ensure security of finds	Establish protective measures	Project team
		Clean finds	Employ accepted standards	Finds manager
		Mark/label finds	Employ accepted standards	Finds manager
		Document finds	Record consistently	Finds manager
		Record metal finds	X-radiograph	Finds manager
		Pack finds	Employ accepted standards	Finds manager
		Conserve finds	Use a trained conservator	Project manager
6	If you find human remains	Obtain licence		Project manager
		Pack and store	Treat human remains sensitively and store securely	Finds manager
7	If you are collecting scientific samples on site	Document sample collection process	Use systems to identify samples and record how they were taken	Project manager
		Establish where samples will finally be deposited	Communicate with archive repository and any relevant laboratories	Project manager Finds manager Analyst Archive curator
		Label samples	Use unique identifiers	Project manager and staff
		Collect finds from samples	Treat as other finds of the same type	Finds manager

	ANALYSIS	Action	Archive Task	Personnel Responsible (re archive task)
8	If you are creating new documents, drawings or photographs	Refer to 3		Project manager and staff
9	If you are a specialist creating new documents, drawings or photographs	Refer to 3		Specialist
		Ensure systems of classification and terminology accord with local or national guidelines	Facilitate availability of local reference collections etc NB address this at planning stage	Project manager Archive curator
			Monitor specialist	Project manager
10	If you are creating born digital material	Ensure existing standards are maintained	Refer to 4	Project manager and staff
11	If you are a specialist creating born digital material	Refer to 4		Specialist
		Ensure systems of classification and terminology accord with local or national guidelines	Facilitate availability of local reference collections etc NB address this at planning stage	Project manager Archive curator
			Monitor specialist	Project manager
12	If you create a reference collection/type series during finds analysis	Document and order	Submit for inclusion in the archive	Specialist Finds manager
13	If finds are being sent out to external specialists	Make sure conservators and specialists are properly qualified		Project manager Finds manager
		Pack and transport finds	Pack finds to minimise the risks of damage Label clearly to avoid loss Employ reliable couriers	Finds manager
		Ensure specialists will exercise due care towards finds	Exchange information about working practices and storage	Finds manager Specialist
14	If you are an external specialist returning finds	Pack and transport finds	Pack finds to minimise the risks of damage Label clearly to avoid loss Employ reliable couriers	Specialist

	REPORTING/ PUBLICATION	Action	Archive Task	Personnel Responsible (re archive task)
15	If text is created	Write text	Identify and preserve drafts to be archived	Author Archive manager
16	If drawings and photographs are created	Ensure they are ordered for archiving	Submit originals with archive	Authors
17	If digital material is created	Ensure existing standards are maintained	Refer to 4	Authors

ARCHIVE COMPILATION	Action	Archive Task	Personnel Responsible
18 If you are compiling written documents	Follow the archive deposition standards of the relevant repository		Archive manager
	Sort and classify different elements of the written archive	Compile indexes and contents lists	Project manager Archive manager
	Pack	Use appropriate materials to bundle and identify documents	Archive manager
		Store documents in appropriate boxes	Archive manager
		Include copies of standards, conventions etc. used in creating records	Project manager Specialists Archive manager
19 If you are compiling drawings	Follow the archive deposition standards of the relevant repository		Archive manager
	Sort and classify different types of drawings	Compile indexes and contents lists	Illustrator Archive manager
		Ensure drawings are properly marked	Illustrator Archive manager
	Pack	Pack flat in acid-free card folders	Illustrator Archive manager
20 If you are compiling photographs	Follow the archive deposition standards of the relevant repository		Archive manager
	Sort and classify by type	Compile indexes and lists	Archive manager
		Ensure photographs are properly marked	Archive manager
	Pack	Negatives in polyester packets or hangers	Archive manager
		Prints in polyester sleeves	Archive manager
		Transparencies in polyester packets or hangers	Archive manager
21 If you are compiling digital material	Follow the archive deposition standards of the relevant repository		Project manager Archive manager
	Follow national standards		Project manager Archive manager
	Sort and classify	Compile index	Project manager Archive manager
		Use a comprehensible directory structure	Project manager Archive manager
	Copy and store	Use media that are free from viruses etc	Project manager Archive manager
		Mark media and store appropriately	Project manager Archive manager
		Include copies of standards, conventions etc. used in creating records	Project manager Archive manager

ARCHIVE COMPILATION		Action	Archive Task	Personnel Responsible
22	If you are preparing finds	Follow the archive deposition standards of the relevant repository		Finds manager Archive manager
		Sort and pack according to type and sensitivity	Avoid packing inappropriate material or object types together	Finds manager Archive manager
			Pack sensitive finds separately and securely	Finds manager Archive manager
			Use boxes of the correct size and materials	Finds manager Archive manager
			Label properly	Finds manager Archive manager
		Organic finds	Make sure they are dried out before packing	Finds manager Conservator
23	If you are preparing human remains	Follow the archive deposition standards of the relevant repository		Finds manager Archive manager
		Follow national standards		Finds manager Archive manager
		Pack	Ensure different individuals can be distinguished	Finds manager Archive manager
24	If you are preparing scientific samples	Follow the archive deposition standards of the relevant repository		Specialist Finds manager Archive manager
		Sort and classify by type	Compile indexes and lists	Specialist Finds manager Archive manager
		Pack	Use appropriate materials	Specialist Finds manager Archive manager
			Box samples separately from other finds	Finds manager Archive manager

Table for Curation on next page.

	CURATION	Action	Archive Task	Personnel Responsible (re archive task)
25	All elements of the archaeological archive	Provision of access	Maintain accession and location registers	Archive curator
			Store logically and keep boxes together	Archive curator
26	Written material	Storage	In darkness	Archive curator
			13° to 19°C	Archive curator
			45% to 60% RH	Archive curator
27	Drawings	Storage	Store flat, in darkness	Archive curator
			5° to 10°C	Archive curator
			45% to 60% RH	Archive curator
28	Photographs	Storage: prints	In darkness	Archive curator
			13° to 19°C	Archive curator
			40% to 60% RH	Archive curator
		Black and white negatives	In darkness	Archive curator
			15° to 19°C	Archive curator
			30% to 40% RH	Archive curator
		Transparencies and colour negatives	In darkness	Archive curator
			5° to 10°C	Archive curator
			30% to 40% RH	Archive curator
29	Digital archive	Access	Ensure a copy of the digital archive is stored with another recognised facility	Archive curator
		Storage	In appropriate facilities, with backed up versions in a separate location	Archive curator
		Management	Ensure regular backing up	Archive curator
30	Objects	Storage	In darkness	Archive curator
		Bulk finds	Maintain constant temperature and RH	Archive curator
		Metals	15° to 24°C	Archive curator
			Below 35% RH	Archive curator
		Organic finds	18° to 22°C	Archive curator
			45% to 55% RH	Archive curator
31	Human remains	Storage	Must be in secure storage accessed only by authorised staff	Archive curator
		Access and care	Repositories should have a strategy for the care of human remains	Archive curator
32	Scientific samples	Access	Ensure there is access to appropriate equipment to examine samples	Archive curator

APPENDIX II   INDIVIDUAL RESPONSIBILITIES

Project Executive

- write project brief, specifying adherence to best practice or accepted professional and specialist standards
- provide local standards as appropriate
- assess project specifications and approve, or require amendments, as appropriate
- identify the appropriate archive repository and open and maintain communications
- monitor the project throughout to ensure that it is carried out to standards that will lead to the production of a secure, stable, accessible archive
- ensure that specialist advice and support is available as appropriate, to enable effective monitoring
- ensure that the project manager liaises with the Historic Environment Record so that appropriate links are made between the project archive and the HER
- certify completion following the deposition of the archive and appropriate reporting.

Project Manager

- preserve project brief or project design for archive
- write project specification and preserve for archive
- communicate with the appropriate archive repository
- arrange for transfer of title and copyright
- ensure preservation of all documentary material suitable for archive
- ensure that all digital material is managed to facilitate security and access
    - document the creation of the digital archive
    - ensure all media are uncontaminated
    - back up all digital files
    - initiate an index to the digital archive
    - use a comprehensible directory structure

- ensure that post-fieldwork activities, including the work of external specialists, meet accepted standards to ensure the production of a secure, stable, accessible archive
- ensure the collection of data and/or finds, and/or samples, and the creation of the primary record, meet accepted standards to ensure the production of a secure, stable, accessible archive
  - use appropriate materials
  - use a consistent system of classification and terminology
  - maintain indexes of documents, drawings, photographs, finds, samples
  - label or mark clearly and logically
  - ensure the security of the archive
- obtain microfilm copies of appropriate records and drawings
- employ properly qualified conservators and specialists
- monitor the work of specialists
- liaise with specialists, laboratories and the archive repository over the archiving of scientific samples
- ensure final reports, published material and draft reports are submitted with the archive.
- ensure that keys to conventions etc used in creating the primary record are included in the archive, or in the possession of the archive repository
- supervise all staff involved in the creation and preparation of the archive.

Finds Manager

- ensure finds are treated and recorded to accepted standards, or to the standards of the archive repository
  - clean, mark and store finds as appropriate
  - document finds using consistent terminologies and methods of quantification
  - manage the production of x-radiographs of metal objects
  - liaise with conservators
- liaise with finds specialists to ensure accepted standards are followed
- ensure the security of finds in transit
- ensure the proper treatment of human remains
- manage the collection and ultimate deposition of scientific samples
- pack finds according to national standards and those of the archive repository.

Specialist

- work to accepted national and local standards in the creation of records and the treatment of archaeological materials
  - ensure the security and preservation of all materials in your care
  - use local reference collections
  - use accepted terminologies and apply them consistently
  - employ accepted methods of quantification
- organise documentary and digital data for submission with the project archive
  - document the creation of digital records
  - create an index to documentary and digital records
- ensure the security of finds in transit from your premises.

Archive Manager

- follow the archive deposition standards of the relevant repository
- compile the documentary archive
  - sort, classify and label different types of documents, drawings and photographs
  - pack as appropriate
  - ensure the microfilming of documents and drawings
- liaise with the project manager in the compilation of the digital archive
  - ensure there is an index to the digital archive
  - ensure the digital archive is submitted on clean media
  - ensure there is a comprehensible file naming and directory structure
  - ensure transfer media are clearly marked in an appropriate way.
- liaise with the finds manager in the preparation of the material archive

Archive Curator

- ensure the project team has a copy of your archive deposition standards at the beginning of a project
- liaise with the project executive, project monitor, project manager, finds manager and archive manager throughout the course of a project
- liaise with the project manager and finds manager in determining retention and disposal policies
- arrange for copies of the digital archive to be submitted to a recognised digital archiving facility
- store all archive material to accepted standards
- liaise with the Historic Environment Record to ensure accessibility of the documentary archive
- ensure the provision of access to all parts of the archive.

APPENDIX III   GLOSSARY OF ACRONYMS

AAF	**Archaeological Archive Forum**
ADS	**Archaeology Data Service**
ALGAO	**Association of Local Government Archaeological Officers (UK)**
DCMS	**Department for Culture, Media and Sport**
EH	**English Heritage**
IFA	**Institute of Field Archaeologists**
MLA	**Museums Libraries and Archives**
NMR	**National Monuments Record**
RCAHMS	**Royal Commission on the Ancient and Historical Monuments of Scotland**
SCAUM	**Standing Conference of Archaeological Unit Managers**
SMA	**Society of Museum Archaeologists**
UKIC	**United Kingdom Institute of Conservators**

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