

B.12 Managing HER collections

- [B.12 Managing HER collections](#)
- [Getting advice](#)
- [B.12.1 Cataloguing](#)
- [B.12.2 Collection materials](#)
- [Paper](#)
- [Plastics](#)
- [Photographic materials](#)
- [B.12.3 Storage](#)
- [B.12.4 Storage materials](#)
- [B.12.5 Environmental risks](#)
- [B.12.6 Day-to-day care](#)
- [Everyday housekeeping](#)
- [Handling](#)
- [Useful websites](#)
- [B.12.7 Digital archiving](#)
- [Useful websites](#)

B.12 Managing HER collections#

HERs hold collections of reference materials or sources that supplement the information contained in their databases. HERs are recommended to deposit original archives with an appropriate repository, for example a museum, record office, or digital archive. However, substantial collections of reference materials are held which would be expensive or difficult to replace. It is common sense to consider the storage and documentation requirements of managing these collections. The basic guidelines given in this manual draw heavily on fact sheets available from Museums, Libraries and Archives (MLA), formerly known as Resource.

Getting advice#

HERs are recommended to seek advice from their local museum or record office when planning strategies to manage their collections and from conservators if there is any concern over the condition or deterioration of materials in their care. MLA, the Museums Association and the Association for Information Management (ASLIB) all provide sources of information about collections management and suppliers of conservation materials and resources on their websites. The ADS provides guidance on digital archiving and English Heritage can provide general advice.

B.12.1 Cataloguing#

The first step in managing collections is to prepare a catalogue. This may take the form of a simple list that identifies each item with a unique number, gives a simple description and points users to its current storage location. The benefit of preparing a catalogue is that you know what you have got, where it is and if anything has been lost. Catalogues help you to answer enquiries more efficiently and regular users can be allowed direct access to well organised collections.

In addition to an item list, it is important to record, wherever possible, how and when a collection was acquired and any conditions affecting the HER's rights over its contents, such as copyright, database right or licences for making reproductions of the material for third parties. These conditions may be set out in a deposit licence or through an exchange of letters between the HER and the originator of the material, whether reports, plans, drawings, photographs, digital data, written notes or simply a letter.

B.12.2 Collection materials#

The next step in planning storage and in considering conservation issues is to identify the material on which the collection is based. The majority of HER collections will be based on either paper or plastics.

Paper#

Paper quality is an important factor in conservation. Paper is chemically unstable, is easily soiled and swells and contracts as it gains or loses water from the environment. Even the best rag-made papers need careful treatment. The wood-based papers used in commercial printing are a conservation challenge and newspapers or other short-lived publications are vulnerable to rapid deterioration and discoloration. Another problem is that the drawing and printing inks used on documents or drawings are unstable. They may bleed into or even corrode the paper and some pigments can easily be rubbed off the surface of paper. Paper should never be stored in polythene or plastic bags as condensation can build up inside the bag and cause deterioration.

Plastics#

Plastics are chemically unstable in the long term and their lifespan can only be prolonged by well-planned conservation practices. Light is especially harmful. Some plastics are more chemically stable than others and as plastic boxes and sleeves are commonly used for storage it is important to choose the right materials. Plastics such as PVC rapidly deteriorate and, in the process, give off chemicals that can react with other materials, causing damage. Storage media for photographs, photographic films and audio, video and computer all use plastic materials as a base. Archiving the digital data held on electronic storage media requires special treatment (see [B.10.7](#)).

Photographic materials#

Photographic materials (non-digital) are considered to be mixed media in that they are made up of at least two layers: a layer of emulsion carrying a light-sensitive compound which is suspended on a base layer. In a modern print, the base is normally paper, which may have been laminated with plastic and a gelatine emulsion carrying silver salts. Modern negatives and slides have a plastic base carrying a gelatine emulsion.

The guidance for paper and plastics is relevant to photographic materials but an added problem is that the layers react differently to changes in relative temperature and humidity and can separate. Light is especially damaging as the image-bearing emulsion continues to react chemically, and over time the image may be lost. Chemical deterioration of the base material is another problem: plastics are unstable and poor washing of photographic prints can leave chemical residues in the paper base which cause decay. The gelatine in the emulsion contains nutrients which, in poor conditions, can be used as a food source by fungus, insects and even rodents. Photographic materials should never be stored in the bags or packages in which they come from photographic printers (these are made of lowgrade papers and absorb processing chemicals).

When cataloguing it is important to consider the lifespan of the collection, that is, how long do you anticipate that the HER will retain the material? If the material is destined for permanent storage as archival material, HER managers are recommended to consider whether the original material should be deposited at a museum or record office and a copy retained for HER use. For materials that the HER does retain, those with the longest lifespan should be treated to the best possible storage conditions. Some items may have a fixed useful life, for example a map series may be superseded by a later edition, these items may be stored to lower standards and removed when no longer required. Continuing to store items beyond the end of their useful life can have an adverse impact on the management of higher-priority collections.

For items that may be 'borrowed' from the HER for any period of time it is also important to have some form of movement control. At the simplest level this means maintaining a signing-out book and monitoring this to make sure that items such as library books or lecture slides are returned.

B.12.3 Storage#

The next step in managing a collection is to organise its storage. The most frequent causes of damage to collections are poor handling, dirt, damp, heat and light. The following common-sense principles can minimise damage from these agents:

- all collections should be stored above floor level to safeguard them from floods or spillage
- similar materials should be stored together
- all items should be fully supported: for example books and maps should not protrude from the edge of a shelf
- if there is a choice, storage units should be located in the most stable environmental conditions, that is, away from south-facing windows, out of draughts, away from water sources
- the general area in which collections are housed must be kept clean
- cleaning materials must be stored away from the collections
- a table or similar surface on which collections can be viewed should be provided next to the storage area.

Shelves are conventionally used to store books, pamphlets, magazines and other materials. These must be loaded carefully so that material is evenly distributed both across the length and from top to bottom. Overloading the top shelves causes instability. Packing items too tightly on a shelf can cause damage through friction or distortion.

Large books may be better stored on their sides and fully supported by the shelf. Be aware that heavy stacks may cause undue pressure on those items at the bottom. Books that are stored upright are best supported by a bookend when shelves are partially filled. Pamphlets, thin booklets and photographs may be grouped together in archive or magazine file boxes.

Maps, plans and drawings are best stored flat resting horizontally in drawers or shelves. They may also be suspended in plan chests but this form of storage **is** better avoided as it can cause stretching or distortion.

Wooden drawer units may be in use but HER managers should be aware that these are a potential fire hazard. Another disadvantage is that acid from the wood can have a detrimental effect on paper materials stored within the drawer units.

Filing cabinets are conventionally used in HERs to store parish and supplementary files, correspondence and photographs. As with shelves, these should be loaded evenly and care taken to avoid overfilling.

Arrangements should be made for the storage of the digital outputs of archaeological fieldwork and research so that they can be effectively managed and preserved, ideally with a trusted repository. Archaeological Grey Literature, for example, can be added to OASIS <http://oasis.ac.uk> from where it will be deposited with the Archaeology Data Service <http://archaeologydataservice.ac.uk/> and made available in the Grey Literature Library <http://archaeologydataservice.ac.uk/archives/view/greylit/>. At the same time, provision should also be made for the other digital outputs of fieldwork. For specific advice see [Section B.10.7 Digital archiving](#) below.

B.12.4 Storage materials#

Archival-quality storage materials are expensive and in selecting appropriate materials in which to store a particular collection HER officers need to consider its value to the HER, its anticipated

lifespan and the ease of replacement. Sensible measures should always be taken to avoid unnecessary damage to collections.

Archivists use conservation-grade 'acid-free' paper to wrap or separate paper archives. These papers are treated during manufacture to provide a neutral buffer that protects the archive from dirt and other environmental pollutants. HER officers should note that paper that is described as 'wood-free' cannot also be assumed to be 'acid-free'.

Polyester sleeves are also used to offer protection against dirt, but if used, these should be of conservation-grade materials. PVC is not a suitable storage material for films or photographs as it is chemically unstable and will cause damage to archives.

Care should be taken in fastening archives together. Archivists use brass clips as normal office paper clips, pins and staples are made of steel and rust over time. Sticky tapes and glues are best avoided as they are chemically unstable and deteriorate over time, causing stains.

Marking archive collections with identification numbers can cause damage. If collections are to be marked then a soft pencil should be used as ink can bleed into paper, and a number written on the back of a document or photograph can become visible on the front over time.

Fireproof safes or cabinets may be used to store computer discs, tapes and other electronic media.

B.12.5 Environmental risks#

Variations in environmental conditions accelerate the process of decay in all materials. Achieving stable conditions is as important as maintaining the environment at a precise temperature or precise level of atmospheric moisture content. Damp encourages paper to buckle and creates conditions which favour chemical activity, mould growth and pest attack. Dry conditions cause paper to become brittle.

Light accelerates the chemical decomposition of a range of materials, fades inks and dyes and causes plastics to deteriorate. All photographic materials are light sensitive. Both daylight and electronic light contribute to the problem. Windows and other light sources can be screened with UV filters which will need to be periodically replaced as the quality of the filtration decays over time.

Atmospheric pollutants, such as acidic gases, can damage paper and plastics and change colours in pigments. Strong cleaning materials and solvents give off atmospheric pollutants and should be stored well away from collections, particularly plastics.

Biological agents, such as bacteria, insects and mould flourish under conditions of high humidity and temperature. Mice and birds can also get into store rooms and cause obvious damage.

Contact with poor-quality materials may also cause damage: for example chemicals can leach through from a poor-quality mount into a map or print. Yellow stains can be caused by glue or adhesive tapes and these are impossible to remove. In general, combinations of materials (such as plastics and paper) accelerate chemical degradation.

B.12.6 Day-to-day care#

Everyday housekeeping#

Keep materials free of dust and dirt. Make sure that all shelves, books, boxes etc are carefully cleaned at least once a year. This means careful dusting using a soft brush and paying special attention to top edges and the tops of shelves. Remember that solvents, everyday polishes and water can cause damage and are best avoided.

Handling#

Normal use of books, maps and other materials inevitably produces wear and tear. Sensible precautions such as easing books open, providing tables for use when viewing materials and careful handling will prolong life. Care should be taken when transferring materials to and from shelves, plan chests or other storage.

It is recommended that you do not allow people to eat, drink, smoke or use ink pens while they are consulting the HER collections.

Useful websites#

Alliance of Museums Libraries and Archives <http://almauk.org/>

Museum Net (products & services) <http://www.museums.co.uk/products/default.asp>

Museums Association <http://www.museumsassociation.org>

B.12.7 Digital archiving#

Digital archiving is often confused with the backing-up of data. In fact these activities have different goals that require different approaches to implement. Back-up strategies are concerned with the recovery of dynamic data that changes frequently whereas archiving deals with long-term preservation and future use of static data.

Research has been undertaken into the preservation and reuse of digital data by a number of organisations including the ADS. A number of archiving strategies have been identified:

- **Technology preservation** involves the maintenance of hardware, operating systems and applications used to create specific data. The problem with this approach is that the technology will become increasingly difficult to maintain over time as system components become unavailable. The data may still exist but become increasingly difficult to access.
- **Emulation** is seen as a short-term strategy for preservation. Usually it involves a software interface between operating system and the data together with the program needed to read it. The problem with this approach is that new emulation software must be developed as operating systems change and the process of emulation becomes increasingly difficult over time.
- **Data migration** involves the planned movement of data to new formats and more recent versions of software as the support for existing ones declines. Wherever possible, existing data standards such as ASCII text or delimited text for structured data from a database should be used. Proprietary software is needed to access some data types, such as CAD. Clearly, moving data into common standards will result in the loss of formatting but intellectual content is generally secure, however, proprietary formats change over time and care must be taken to minimise the effect of this during migration.

Generally, data archivists consider that migration is the only viable long-term solution to preservation. The costs and implications of long-term digital archiving are considerable. The timescales and the complexity of migration routines together with the need for secure deep storage facilities can only be provided by specialist data-archiving organisations. The ADS is one such organisation that has been set up to ensure preservation and to maintain data access.

Recent thinking is towards moving data into standardised formats based on XML (see [B.11.4](#)). The CAMiLEON project developed a demonstrator tool that migrates drawings created with proprietary software into the XML-based SVG (Scaleable Vector Graphics) format. Similarly Xena, open source digital preservation software developed by the National Archives of Australia, undertakes the ?XML Electronic Normalising of Archives?. Xena uses a plugin architecture to handle various formats.

The use of XML for long-term archiving of digital data is also an objective of the FISH Interoperability Toolkit project (see [B.6.4](#)). The MIDAS XML schema which lie at the heart of the Toolkit, have been developed in line with recommendations of the World Wide Web consortium. They provide a suitable XML format for the storage of text data output from typical Historic Environment Records. No special software is required to access XML files: they can be read with standard PC accessories such as Notepad, Wordpad or recent versions of Internet Explorer.

A major archival function is the categorisation and description of datasets. Such metadata (see [B.11.3](#)) is used to describe both the data format/medium and the content of a resource. The former aids preservation strategies while the latter helps in locating and accessing a desired resource. Of late much research has gone into agreeing metadata standards, such as the Dublin Core, in order to promote accessibility and to facilitate the use of distributed resources.

Storage of data, in either digital or printed (hard copy) form, within a records management system such as a HER does not correspond with curating the same material within a recognised archive.

HERs are receiving greater amounts of digital data, such as fieldwork reports in .pdf format, and ever growing quantities of digital images, especially from the increased use of digital cameras. At the same time, HERs often create digital data, such as word documents, databases, and GIS files, as part of their own projects. These all take up increasing amounts of disc or server space and in turn may merit curation as part of a digital archive to ensure their long-term preservation and accessibility. HER managers should consider which parts of their collections will require digital archiving and may need to seek the advice of their host organization regarding their storage and archiving whilst maintaining access to these files. Alternatively, it may be necessary to look at options for depositing these digital files with appropriate local archives or national bodies such as the ADS, who can host the files as part of their archive and allow access to them via a web link.

Useful websites#

Archaeology Data Service (ADS) Guides to Good Practice <http://guides.archaeologydataservice.ac.uk/>

CAMILEON <http://www2.si.umich.edu/CAMILEON/>

Xena <http://xena.sourceforge.net/>

FISH Interoperability Toolkit <http://archaeologydataservice.ac.uk/fishtoolkit/>

RCAHMS digital archives guidelines <http://www.rcahms.gov.uk/freedom-of-information.html>